Attachment D
Draft Environmental Impact Report

DRAFT EIR

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

STATE CLEARINGHOUSE NO. 2013011001

ENGINEERING CITY OF LOS ANGELES

LADOT Moving Los Angeles Forward

Los Angeles STREETCAR!

Metro

ERRATA TO THE DRAFT EIR

The City of Los Angeles ("City") has prepared this Errata sheet to correct information in the Draft Environmental Impact Report ("Draft EIR" or "DEIR") for the Restoration of Historic Streetcar Service in Downtown Los Angeles ("Project"), State Clearinghouse No. 2013011001. This Errata sheet includes a global edit to the DEIR that entirely removes the 11th Street and Olive (West) Maintenance and Storage Facility ("MSF") from the Project and DEIR. The revision herein does not contain significant new information that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect.

The Project requires a MSF to provide for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition. This Errata is intended to clarify that the MSF would be located at one of three potential sites; these three potential sites do not include the 11th Street and Olive Street (West) MSF site; it is not a part of the Project. This Errata sheet corrects the DEIR by removing the 11th Street and Olive Street (West) MSF from the list of potential MSF locations.

The removal of the 11th Street and Olive (West) MSF herein merely corrects the DEIR and no new information is added. In conformance with Section 15121 of the State California Environmental Quality Act (“CEQA”) Guidelines, the DEIR, together with this Errata, are intended to serve as documents that would generally inform the decision-makers and the public of environmental effects of the Project.

DRAFT EIR

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

STATE CLEARINGHOUSE NO. 2013011001

CONTACT:

City of Los Angeles Department of Public Works, Bureau of Engineering
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
Attention: William Jones
eng.lastreetcarproject@lacity.org
http://eng.lacity.org/techdocs/emg/historic_streetcar.htm

PREPARED BY:

ICF International
601 W. Fifth Street, Suite 900
Los Angeles, CA 90071

June 2016

ICF International. 2016. Draft EIR Restoration of Historic Streetcar Service in Downtown Los Angeles. June. (ICF 00646.11.) Los Angeles, CA. Prepared for City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

Executive Summary ES-1

ES.1 Introduction ES-1
ES.2 Background ES-1
ES.3 Project Description and Alternatives Considered ES-2
ES.3.1 Alternative 1: No Project Alternative ES-7
ES.3.2 Alternative 2: 7th Street with Grand Avenue Extension ES-7
ES.3.3 Alternative 3: 7th Street without Grand Avenue Extension ES-7
ES.3.4 Alternative 4: 9th Street with Grand Avenue Extension ES-7
ES.3.5 Alternative 5: 9th Street without Grand Avenue Extension ES-7
ES.3.6 Maintenance Storage Facility ES-7
ES.4 Areas of Controversy ES-8
ES.5 Issues to Be Resolved ES-9
ES.6 Permits, Approvals, and Intended Uses of the EIR ES-9
ES.7 Summary of Environmental Impacts of the Project Alternatives ES-11
ES.7.1 No Project Alternative ES-11
ES.7.2 Alternatives 2, 3, 4, and 5 .... ES-11

1.0 Introduction 1-1

1.1 Purpose of the EIR 1-1
1.2 Intended Uses of the EIR 1-1
1.3 Environmental Review Process 1-2
1.4 Community/Public Outreach Efforts 1-3
1.5 Areas of Public Concern and Known Controversy 1-3
1.6 Organization of the EIR 1-4

2.0 Project Description 2-1

2.1 Introduction 2-1
2.2 Project History and Background 2-7
2.3 Project Objectives and Need 2-8
2.3.1 Statement of Need 2-8
2.3.2 Project Objectives 2-12
2.4 Project Alternatives 2-13
2.4.1 Alternative 1 – No Project Alternative 2-13
2.4.2 Alternative 2 – 7th Street with Grand Avenue Extension 2-13
2.4.3 Alternative 3 – 7th Street without Grand Avenue Extension 2-13
2.4.4 Alternative 4 – 9th Street with Grand Avenue Extension 2-13
2.4.5 Alternative 5 – 9th Street without Grand Avenue Extension 2-13

2.5 Street Segments 2-14
2.5.1 Grand Avenue 2-14
2.5.2 1st Street 2-14
2.5.3 Broadway 2-15
2.5.4 11th Street 2-15
2.5.5 Figueroa Street 2-16
2.5.6 9th Street 2-16
2.5.7 7th Street 2-16
2.5.8 Hill Street 2-17
2.6 Elements of Streetcar Alternatives 2-17
2.6.1 Vehicles 2-18
2.6.2 Platforms 2-18
2.6.3 Support Facilities 2-19
2.7 Project Design Elements 2-25
2.7.1 Proposed Intersection Improvements 2-25
2.7.2 Proposed Lane Reconfiguration 2-27
2.7.3 Streetcar Safety Elements 2-27
2.7.4 Bus Service Coordination and Traffic Rerouting Notifications 2-27
2.8 Construction Activities 2-28
2.8.1 Introduction 2-28
2.8.2 Utility Relocation 2-31
2.8.3 Track Construction 2-32
2.8.4 Maintenance and Storage Facility 2-32
2.8.5 Streetcar Stop Platforms 2-32
2.8.6 Operating Systems Installation 2-33
2.8.7 Testing and Start-Up 2-33
2.9 Streetcar Operations 2-33
2.9.1 Streetcar Ridership 2-34
2.10 Permits, Approvals, and Intended Uses of the EIR 2-34
2.11 Related Projects 2-35

3.0 CEQA Environmental Impact Analysis 3-1
3.1 Aesthetics 3.1-1
3.1.1 Regulatory Setting 3.1-1
3.1.2 Federal 3.1-1
3.1.2.1 Federal Highway Administration Visual Impact Assessment Guidance 3.1-1
3.1.3 State 3.1-1
3.1.3.1 California Environmental Quality Act 3.1-1

3.1.4 Local and Regional 3.1-2
3.1.4.1 Los Angeles Municipal Code..3.1-2
3.1.4.2 City of Los Angeles General Plan 3.1-2
3.1.4.3 Central City Community Plan 3.1-2
3.1.4.4 Bunker Hill Specific Plan 3.1-2
3.1.4.5 Los Angeles Sports and Entertainment District Specific Plan..................3.1-3
3.1.4.6 Convention and Event Center Specific Plan 3.1-3
3.1.4.7 City of Los Angeles Walkability Checklist 3.1-3
3.1.4.8 Citywide Design Guidelines 3.1-3
3.1.4.9 Downtown Design Guide...3.1-4
3.1.4.10 Historic Downtown Los Angeles Design Guidelines 3.1-4
3.1.4.11 Broadway Streetscape Master Plan 3.1-4
3.1.4.12 Figueroa Corridor Streetscape Project..3.1-5
3.1.4.13 City of Los Angeles Tree Preservation Ordinance 3.1-5
3.1.4.14 City of Los Angeles Tree Preservation Policy..3.1-5
3.1.5 Environmental Setting/Affected Environment 3.1-6
3.1.5.1 Scenic Vistas 3.1-6
3.1.5.2 Visual Resources...3.1-6
3.1.5.3 Visual Quality and Character 3.1-7
3.1.5.4 Light, Glare, and Shadow Environment..3.1-14
3.1.6 Environmental Impact Analysis..3.1-14
3.1.6.1 Methodology 3.1-14
3.1.6.2 Thresholds of Significance 3.1-18
3.1.6.3 Environmental Impacts 3.1-19
3.1.7 Mitigation Measures..3.1-55
3.1.7.1 Construction Period 3.1-56
3.1.7.2 Operational Period 3.1-56
3.1.8 Significant Unavoidable Adverse Impacts..3.1-57
3.1.9 Cumulative Impacts 3.1-57
3.2 Air Quality 3.2-1
3.2.1 Regulatory Setting..3.2-1
3.2.1.1 Federal...3.2-1
3.2.1.2 State 3.2-4
3.2.1.3 Local 3.2-5
3.2.2 Environmental Setting/Affected Environment 3.2-7
3.2.3 Environmental Impact Analysis..3.2-13
3.2.3.1 Methodology 3.2-13
3.2.3.2 Thresholds of Significance 3.2-21
3.2.3.3 Construction Impacts 3.2-22

3.2.3.4 Operational Impacts ... 3.2-25
3.2.4 Mitigation Measures ... 3.2-31
3.2.5 Cumulative Impacts ... 3.2-32
3.3 Cultural Resources ... 3.3-1
3.3.1 Regulatory Setting ... 3.3-1
3.3.1.1 Federal ... 3.3-1
3.3.1.2 State ... 3.3-2
3.3.1.3 Local ... 3.3-4
3.3.2 Environmental Setting/Affected Environment ... 3.3-6
3.3.2.1 Paleontological Setting ... 3.3-7
3.3.2.2 Prehistoric Setting ... 3.3-7
3.3.2.3 Native American Ethnographic Setting ... 3.3-8
3.3.2.4 Historic Context ... 3.3-9
3.3.3 Environmental Impact Analysis ... 3.3-20
3.3.3.1 Methodology ... 3.3-20
3.3.3.2 Thresholds of Significance ... 3.3-36
3.3.3.3 Environmental Impacts ... 3.3-37
3.3.4 Mitigation Measures ... 3.3-60
3.3.4.1 Archaeological Resources ... 3.3-60
3.3.4.2 Historical Resources ... 3.3-60
3.3.4.3 Paleontological Resources ... 3.3-61
3.3.5 Significant Unavoidable Impacts ... 3.3-62
3.3.6 Cumulative Impacts ... 3.3-62
3.3.6.1 Archaeological Resources ... 3.3-62
3.3.6.2 Historical Resources ... 3.3-62
3.3.1.1 Paleontological Resources ... 3.3-65
3.4 Energy ... 3.4-1
3.4.1 Regulatory Setting ... 3.4-1
3.4.1.1 Federal ... 3.4-1
3.4.1.2 State ... 3.4-1
3.4.1.3 Local ... 3.4-2
3.4.2 Environmental Setting/Affected Environment ... 3.4-4
3.4.2.1 Electricity ... 3.4-4
3.4.2.2 Transportation Energy ... 3.4-5
3.4.3 Environmental Impact Analysis ... 3.4-6
3.4.3.1 Methodology ... 3.4-6
3.4.3.2 Thresholds of Significance ... 3.4-7
3.4.3.3 Alternative 1: No Project Alternative ... 3.4-8
3.4.3.4 Alternative 2: 7th Street With Grand Avenue Extension ... 3.4-9

3.4.3.5 Alternative 3: 7th Street Without Grand Avenue Extension 3.4-13
3.4.3.6 Alternative 4: 9th Street With Grand Avenue Extension 3.4-13
3.4.3.7 Alternative 5: 9th Street Without Grand Avenue Extension 3.4-14
3.4.4 Mitigation Measures 3.4-14
3.4.5 Cumulative Impacts 3.4-14
3.5 Geology, Soils, and Seismicity 3.5-1
3.5.1 Regulatory Setting 3.5-1
3.5.1.1 Alquist-Priolo Earthquake Fault Zoning Act 3.5-1
3.5.1.2 Seismic Hazards Mapping Act 3.5-1
3.5.1.3 California Building Standards Code 3.5-1
3.5.2 Environmental Setting/Affected Environment 3.5-2
3.5.2.1 Regional Geology 3.5-2
3.5.2.2 Local Topography 3.5-2
3.5.2.3 Stratigraphy and Subsurface Materials 3.5-2
3.5.2.4 Faulting and Seismicity 3.5-5
3.5.2.5 Liquefaction 3.5-7
3.5.2.6 Other Seismic Hazards 3.5-7
3.5.3 Environmental Impact Analysis 3.5-8
3.5.3.1 Methodology 3.5-8
3.5.3.2 Thresholds of Significance 3.5-8
3.5.3.3 Impacts 3.5-9
3.5.4 Mitigation Measures 3.5-18
3.5.5 Cumulative Impacts 3.5-18
3.5.5.1 Construction Impacts 3.5-18
3.6 Greenhouse Gas Emissions 3.6-1
3.6.1 Regulatory Setting 3.6-1
3.6.1.1 Federal 3.6-1
3.6.1.2 State 3.6-3
3.6.1.3 Local 3.6-7
3.6.2 Environmental Setting/Affected Environment 3.6-8
3.6.3 Environmental Impact Analysis 3.6-11
3.6.3.1 Methodology 3.6-11
3.6.3.2 Thresholds of Significance 3.6-12
3.6.3.3 Construction and Operational Impacts 3.6-12
3.6.4 Cumulative Impacts 3.6-18
3.7 Hazards and Hazardous Materials 3.7-1
3.7.1 Regulatory Setting 3.7-1
3.7.1.1 Federal 3.7-1

3.7.1.2 State 3.7-2
3.7.1.3 Regional and Local..3.7-3
3.7.2 Environmental Setting/Affected Environment 3.7-5
3.7.2.1 Records Review 3.7-5
3.7.3 Environmental Impact Analysis..3.7-12
3.7.3.1 Methodology 3.7-12
3.7.3.2 Thresholds of Significance 3.7-12
3.7.3.3 Impacts 3.7-13
3.7.4 Mitigation Measures 3.7-24
3.7.4.1 Level of Significance after Mitigation 3.7-26
3.7.5 Cumulative Impacts 3.7-26
3.7.5.1 Risk of Upset/Emergency Preparedness 3.7-26
3.7.5.2 Human Health Hazards...3.7-27
3.8 Land Use and Planning...3.8-1
3.8.1 Regulatory Setting...3.8-1
3.8.1.1 State Plans 3.8-1
3.8.1.2 Regional Plans 3.8-1
3.8.1.3 Local Plans and Regulations 3.8-2
3.8.2 Environmental Setting/Affected Environment 3.8-10
3.8.2.1 Project Study Area...3.8-10
3.8.2.2 Surrounding Land Uses...3.8-15
3.8.3 Environmental Impact Analysis..3.8-21
3.8.3.1 Methodology 3.8-21
3.8.3.2 Thresholds of Significance 3.8-21
3.8.3.3 Alternative 1: No Project Alternative 3.8-22
3.8.3.4 Alternative 2: 7th Street with Grand Avenue Extension 3.8-23
3.8.3.5 Alternative 3: 7th Street without Grand Avenue Extension...........3.8-49
3.8.3.6 Alternative 4: 9th Street with Grand Avenue Extension 3.8-50
3.8.3.7 Alternative 5: 9th Street without Grand Avenue Extension...........3.8-50
3.8.3.8 Traction Power Substations and Laydown and Storage Areas.......3.8-51
3.8.3.9 Maintenance and Storage Facility Sites 3.8-52
3.8.4 Regulatory Compliance Measures 3.8-57
3.8.5 Mitigation Measures 3.8-58
3.8.5.1 Construction 3.8-58
3.8.5.2 Operation 3.8-58
3.8.6 Significant and Unavoidable Impacts..3.8-58
3.8.7 Cumulative Impacts 3.8-58
3.8.7.1 Construction 3.8-59
3.8.7.2 Operation 3.8-59

3.9 Noise and Vibration 3.9-1
3.9.1 Regulatory Setting 3.9-1
3.9.1.1 Federal Regulations 3.9-1
3.9.1.2 State Regulations 3.9-2
3.9.1.3 Local Regulations and Standards 3.9-2
3.9.2 Environmental Setting/Affected Environment 3.9-2
3.9.2.1 Noise Fundamentals 3.9-2
3.9.2.2 Environmental Vibration Fundamentals 3.9-5
3.9.2.3 Existing Noise Conditions 3.9-7
3.9.2.4 Existing Vibration Conditions 3.9-9
3.9.3 Environmental Impact Analysis 3.9-9
3.9.3.1 Methodology 3.9-10
3.9.3.2 Thresholds of Significance 3.9-11
3.9.3.3 Alternative 1: No Project Alternative 3.9-16
3.9.3.4 Alternative 2: 7th Street with Grand Avenue Extension 3.9-16
3.9.3.5 Alternative 3: 7th Street without Grand Avenue Extension 3.9-35
3.9.3.6 Alternative 4: 9th Street with Grand Avenue Extension 3.9-36
3.9.3.7 Alternative 5: 9th Street without Grand Avenue Extension 3.9-36
3.9.4 Mitigation Measures 3.9-37
3.9.4.1 Construction Noise Mitigation 3.9-37
3.9.4.2 Construction Vibration Mitigation 3.9-38
3.9.4.3 Operational Noise Mitigation 3.9-39
3.9.4.4 Operational Vibration Mitigation 3.9-40
3.9.5 Cumulative Impacts 3.9-40
3.10 Transportation and Traffic 3.10-1
3.10.1 Regulatory Setting 3.10-1
3.10.1.1 2010 Congestion Management Program 3.10-1
3.10.1.2 Mobility Plan 2035 .... 3.10-1
3.10.1.3 Traffic Study Policies and Procedures 3.10-1
3.10.2 Environmental Setting/Affected Environment 3.10-2
3.10.2.1 Study Area 3.10-2
3.10.2.2 Roadway System 3.10-2
3.10.2.3 Existing Traffic Conditions 3.10-11
3.10.3 Environmental Impact Analysis 3.10-16
3.10.3.1 Methodology 3.10-16
3.10.3.2 Thresholds of Significance 3.10-18
3.10.3.3 Impacts 3.10-21
3.10.4 Mitigation Measures 3.10-58
3.10.4.1 Construction 3.10-58

3.10.4.2 Operation 3.10-59
3.10.5 Cumulative Impacts 3.10-60
3.10.5.1 Construction 3.10-60
3.10.5.2 Intersection Capacity....................3.10-61
3.10.5.3 Bicycle, Pedestrian, and Vehicular Safety 3.10-61
3.10.5.4 Transit System Capacity 3.10-61

Chapter 4 Alternatives to the Project 4-1
4.1 Introduction 4-1
4.2 Project Objectives 4-2
4.3 Alternatives Considered but Eliminated from Further Discussion 4-3
4.3.1 Alternatives Analysis 4-3
4.3.2 Rubber-Tired Transportation Systems Management Alternative 4-24
4.3.3 Alternatives Suggested during Scoping....................4-25
4.4 Further Modifications Considered 4-27
4.5 Comparison of Alternatives 4-28
4.5.1 Traffic and Transportation 4-29
4.5.2 Bicycle Safety 4-29
4.5.3 Noise 4-30
4.5.4 Energy 4-30
4.5.5 Greenhouse Gas Emissions 4-31
4.6 Relationship of Alternatives to Project Objectives 4-31
4.6.1 Alternative 1 – No Project Alternative 4-31
4.6.2 Alternative 2 – 7th Street with Grand Avenue Extension 4-31
4.6.3 Alternative 3 – 7th Street without Grand Avenue Extension 4-32
4.6.4 Alternative 4 – 9th Street with Grand Avenue Extension 4-32
4.6.5 Alternative 5 – 9th Street without Grand Avenue Extension 4-32
4.7 Environmentally Superior Alternative (CEQA) 4-32

Chapter 5 Other Environmental Considerations....................5-1
5.1 Impacts Found to Be Less than Significant (CEQA) 5-1
5.1.1 Agriculture and Forestry Resources....................5-1
5.1.2 Air Quality 5-2
5.1.3 Biological Resources 5-3
5.1.4 Hazards 5-5
5.1.5 Hydrology and Water Quality 5-6
5.1.6 Land Use and Planning....................5-9
5.1.7 Mineral Resources 5-10
5.1.8 Noise 5-10
5.1.9 Population and Housing....................5-11

5.1.10 Public Services and Recreation 5-12
5.1.11 Traffic and Transportation 5-14
5.1.12 Utilities and Service Systems 5-14
5.2 Growth-Inducing Impacts 5-16
5.3 Irreversible and Irretrievable Commitment of Resources 5-18

6.0 Agencies and Organizations Consulted 6-1
6.1 Agencies....6-1
6.2 Organizations....6-1

7.0 List of Preparers 7-1

8.0 References 8-1
8.1 Printed References 8-1
8.2 Personal Communications....8-11

Appendices

A Notice of Preparation/Initial Study—Restoration of Historic Streetcar Service in Downtown Los Angeles

B Restoration of Historic Streetcar Service in Downtown Los Angeles—Scoping Summary Report

C Restoration of Historic Streetcar Service in Downtown Los Angeles—Construction Methods Technical Memorandum

D Visual Impact Assessment for the Restoration of Historic Streetcar Service in Downtown Los Angeles

E Air Quality and Climate Change Assessment Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

F Restoration of Historic Streetcar Service in Downtown Los Angeles—Phase I Environmental Site Assessment

G Archaeological Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles and Paleontology Correspondence

H Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

I Noise and Vibration Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

J Restoration of Historic Streetcar Service in Downtown Los Angeles—Transportation Technical Study

K MSF Methodology Memo

L Small Starts Speed Improvement Analysis, Technical Memorandum

M Energy Calculations

Tables

Page

ES-1 Summary of Construction Period Environmental Impacts ES-12
ES-2 Summary of Operation Period Environmental Impacts ES-31
ES-3 Summary of Cumulative Environmental Impacts ES-45
2-1 Potential Maintenance and Storage Facility Properties Currently Under Consideration 2-22
2-2 Estimated Streetcar Operating Plan 2-33
2-3 LA Streetcar Daily Ridership and Auto Travel Reduction Estimates 2-34
2-4 Related Projects 2-37
3.2-1 Federal and State Ambient Air Quality Standards 3.2-2
3.2-2 Air Quality Data from Los Angeles – North Main Street Station (ARB 70087, EPA AQS 06=037-1103) 3.2-11
3.2-3 LA Streetcar Daily Ridership and Auto Travel Reduction Estimates 3.2-15
3.2-4 Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 3.2-16
3.2-5 Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 3.2-17
3.2-6 Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 3.2-18
3.2-7 Worst-Case Regional Construction Emissions (pounds per day) 3.2-23
3.2-8 Worst-Case Localized Construction Emissions (pounds per day) 3.2-24
3.2-9 Estimated Change in Passenger Vehicle Emissions due to VMT Reduction during Operations (pounds per day) 3.2-26
3.2-10 Estimate of Operations-Period Mass Emissions (pounds per day) 3.2-27
3.2-11 Estimate of Operation-Period Localized Emissions (pounds per day) 3.2-27
3.2-12 Modeled Maximum Carbon Monoxide Concentrations (ppm) at Receptors in the Vicinity of Affected Intersections during the PM Peak Hour 3.2-30
3.2-13 Worst-Case Localized Construction Emissions with Mitigation (pounds per day) 3.2-32
3.3-1 Historical Resources Included in the NRHP and Listed in the CRHR 3.3-29

3.3-2 Historical Resources Previously Determined Eligible for the NRHP and Listed in the CRHR ... 3.3-30
3.3-3 Additional Historical Resources Declared by the City of Los Angeles to Be Historic-Cultural Monuments ... 3.3-33
3.3-4 Historical Resources Eligible for the NRHP, Pending SHPO Concurrence ... 3.3-35
3.4-1 Transportation Energy Intensity ... 3.4-7
3.4-2 Reduction of Daily Vehicle Miles Traveled by Speed under the Build Alternatives ... 3.4-11
3.4-3 Operational Energy Usage under each Alternative ... 3.4-12
3.5-1 Proximity of the Alignments to Potentially Active Faults ... 3.5-5
3.6-1 LA Streetcar Daily Ridership and Auto Travel Reduction Estimates ... 3.6-13
3.6-2 Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins ... 3.6-14
3.6-3 Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins ... 3.6-15
3.6-4 Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bin ... 3.6-16
3.6-5 Project-related Greenhouse Gas Emissions under the 2015 plus Project Condition (metric tons CO2e per Year) ... 3.6-18
3.7-1 Hazardous Materials Release Cases ... 3.7-6
3.7-2 Leaking Underground Storage Tank Cases ... 3.7-7
3.7-3 Underground Storage Tank Sites ... 3.7-11
3.7-4 Sites of Concern Identified from Sanborn Insurance Maps ... 3.7-12
3.8-1 Project Land Use Plan Conflicts ... 3.8-28
3.9-1 Definitions of Acoustical Terms ... 3.9-3
3.9-2 Typical Noise Levels in the Environment ... 3.9-4
3.9-3 Ambient Noise Measurement Results ... 3.9-8
3.9-4 Ambient Nighttime Noise Measurement Results – 1-hour Leq (dBA) ... 3.9-9
3.9-5 Community Noise Exposure CNEL ... 3.9-12
3.9-6 FTA Land Use Categories and Noise Metrics ... 3.9-13
3.9-7 FTA Impact Thresholds for Groundborne Vibration, General Impact Assessment ... 3.9-15
3.9-8 Groundborne Noise and Vibration Impact Criteria for Special Buildings ... 3.9-16
3.9-9 Construction Activity and Equipment Typical Noise Levels (dBA) at 50 feet ... 3.9-17

3.9-10 FTA Damage Risk Vibration Criteria 3.9-19
3.9-11 Summary of FTA Noise Impacts and Mitigation 3.9-21
3.9-12 CEQA Noise Impact Analysis for Category 1 Land Uses – Ldn (dBA) 3.9-27
3.9-13 CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA) 3.9-28
3.9-14 CEQA Noise Impact Analysis for Category 3 Land Uses – Ldn (dBA) 3.9-30
3.9-15 Summary of Vibration Impact Assessment for Category 2 Residential Land Uses 3.9-33
3.9-16 Summary of Vibration Impact Assessment for Category 3 Institutional Land Uses 3.9-34
3.10-1 Arterials in the Study Area 3.10-2
3.10-2 Existing (2014/2015) Intersection LOS Analysis 3.10-11
3.10-3 Existing and Proposed Bicycle Facilities in the Study Area 3.10-14
3.10-4 Signalized Intersections—LOS Definitions 3.10-17
3.10-5 Intersection LOS Comparison (2014/2015) (No Project and Alternative 2) 3.10-26
3.10-6 Intersection LOS Comparison (2020) (No Project and Alternative 2) 3.10-30
3.10-7 Intersection LOS Comparison (2040) (No Project and Alternative 2) 3.10-33
3.10-8 Intersection LOS Comparison (2014/2015) (No Project and Alternative 4) 3.10-42
3.10-9 Intersection LOS Comparison (2020) (No Project and Alternative 4) 3.10-45
3.10-10 Intersection LOS Comparison (2040) (No Project and Alternative 4) 3.10-49
3.10-11 Significant and Unavoidable Intersection Impacts 3.10-60
4-1 Initial Screening Alternatives by Segment 4-5
4-2 Final Screening Alternatives 4-23

Figures

		Page
ES-1	Regional Location Map	ES-3
ES-2	Proposed Downtown Los Angeles Streetcar Route	ES-5
2-1	Regional Location Map	2-3
2-2	Proposed Downtown Los Angeles Streetcar Route	2-5
2-3	Potential Maintenance and Storage Facility Locations Currently Under Consideration	2-23
2-4	Proposed Intersection Improvements	2-29
2-5	Related Projects Map	2-43
3.1-1	Broadway at West 2nd Street, Looking South	3.1-9
3.1-2	Grand Avenue at West 2nd Street, Looking South	3.1-9
3.1-3	Broadway, Mid-block between West 5th and 6th Streets, Looking South	3.1-10
3.1-4	Hill Street, Approaching West 6th Street, Looking North	3.1-10
3.1-5	West 7th Street, Approaching Flower Street, Looking East	3.1-11
3.1-6	Figueroa Street at Olympic Boulevard, Looking North	3.1-11
3.1-7	West 11th Street, Approaching Olive Street, Looking West	3.1-12
3.1-8	West 9th Street, Approaching Hope Street, Looking East	3.1-13
3.1-9	(KOP 1) Existing View along Grand Avenue at 2nd Street, Looking North	3.1-26
3.1-9A	Simulated View along Grand Avenue at 2nd Street, Looking North	3.1-26
3.1-10	(KOP 2) Existing View along Broadway, between 5th and 6th Streets, Looking North	3.1-28
3.1-10A	Simulated View along Broadway, between 5th and 6th Streets, Looking North	3.1-28
3.1-11	(KOP 3) Existing View along Figueroa Street at Olympic Boulevard, Looking North	3.1-30
3.1-11A	Simulated View, North along Figueroa Street at Olympic Boulevard	3.1-30
3.1-12	(KOP 4) Existing View along 7th Street at Flower Street, Looking East	3.1-31
3.1-12A	Simulated View, 7th Street at Flower Street, Looking East	3.1-31
3.1-13	(KOP 5) View along Hill Street at 6th Street, Looking North	3.1-32

3.1-13A Simulated View, Hill Street at 6th Street, Looking North ... 3.1-32

3.1-14 (KOP 6) Existing View along 11th Street at Broadway, Looking West ... 3.1-34

3.1-14A Simulated View along 11th Street at Broadway, Looking West ... 3.1-34

3.1-15 (KOP 7) Existing View along 11th Street at Grand Avenue, Looking West ... 3.1-36

3.1-15A Simulated View along 11th Street at Grand Avenue, Looking West ... 3.1-36

3.3-1 Looking south down Broadway at the intersection of 5th Street in 1926 ... 3.3-9

3.3-2 A View of 3rd Street, 3rd Street Tunnel, and Angels Flight (to the left) in 1901 ... 3.3-10

3.3-3 Crowds crossing the intersection of 7th Street and Broadway, looking north on Broadway in 1928 ... 3.3-11

3.3-4 Looking north on Broadway from 7th Street during the Armistice Day parade in 1944 ... 3.3-12

3.3-5 View of Spring Street looking north between 6th and 7th Streets in 1932 ... 3.3-13

3.3-6 A view of the intersection of Broadway and 7th Street, looking west on 7th Street in 1926 ... 3.3-15

3.3-7 Northeast corner of Flower and 7th Streets looking at the east elevation of the Roosevelt Building circa 1940 ... 3.3-16

3.3-8 Exterior of the Examiner newspaper building at 1111 South Broadway in 1937. ... 3.3-17

3.3-9 A retired Los Angeles Transit Lines streamliner wearing government Los Angeles Metropolitan Transit Authority's green and white color scheme in 1963. ... 3.3-20

3.3-10 Index. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles ... 3.3-23

3.3-10 Sheet 1 of 2. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles ... 3.3-25

3.3-10 Sheet 2 of 2. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles ... 3.3-27

3.4-1 LADWP Energy Mix, 2011 ... 3.4-5

3.4-2 California Energy Consumption by End-Use Sector (2013) ... 3.4-6

3.5-1 Regional Faults and Alquist-Priolo Fault Zones ... 3.5-3

3.7-1 High or Moderate Risk Recognized Environmental Conditions ... 3.7-9

3.8-1 Downtown Los Angeles Districts ... 3.8-13

3.8-2 Land Uses ... 3.8-17

3.8-3 Zoning Designations ... 3.8-19
3.9-1 Common Groundborne Vibration Levels ... 3.9-6
3.9-2 Noise and Vibration Measurement Locations ... 3.9-7
3.9-3 FTA Noise Impact Criteria ... 3.9-14
3.9-4a Receiver Locations, Diagram 1 ... 3.9-22
3.9-4b Receiver Locations, Diagram 2 ... 3.9-23
3.9-4c Receiver Locations, Diagram 3 ... 3.9-24
3.10-1a Study Area Intersections ... 3.10-5
3.10-1b Existing Intersection Lane Configurations ... 3.10-7
3.10-1c Existing Intersection Lane Configurations (continued) ... 3.10-9
4-1a Alternative 1 ... 4-9
4-1b Alternative 2 ... 4-11
4-1c Alternative 3 ... 4-13
4-1d Alternative 4 ... 4-15
4-1e Alternative 5 ... 4-17
4-1f Alternative 6 ... 4-19
4-1g Alternative 7 ... 4-21

Acronyms and Abbreviations

2010 Standards	2010 ADA Standards for Accessible Design
µG/M^3	micrograms per cubic meter
°F	Fahrenheit
AA	Alternatives Analysis
AADT	annual average daily traffic
AB	Assembly Bill
AC	Alternating Current
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
ACWM	asbestos-containing waste materials
ADA	Americans with Disabilities Act
Alquist-Priolo	Alquist-Priolo Earthquake Fault Zoning Act
APE	area of potential effect
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
ASTM	American Society for Testing and Materials
AVO	average vehicle occupancy
BACT	Best Available Control Technology
Basin	South Coast Air Basin
BIDs	business improvement districts
BOE	Bureau of Engineering
BMPs	Best Management Practices
B.P.	Before Present
BSMP	Broadway Streetscape Master Plan
BTU	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CA FID	California Facility Inventory UST database
Cal ARP	California Accidental Release Prevention
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CBSC	California Building Standards Code

CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFC	Chlorofluorocarbons
CFD	Community Facilities District
CFR	Code of Federal Regulations
CH_4	methane
City	City of Los Angeles
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
CO Protocol	Transportation Project-Level Carbon Monoxide Protocol
Commission	California Building Standards Commission
CPUC	California Public Utilities Commission
CRA/LA	Community Redevelopment Agency of the City of Los Angeles
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
DASH	Downtown Area Short Hop
dB	decibel
dBA	A-Weighted Sound Level
DC	direct current
DDG	Downtown Design Guide
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPR	Department of Pesticide Regulation
DPW	Department of Public Works
DTSC	Department of Toxic Substances Control
E	Environmental
EA	Environmental Assessment
EDR	Environmental Data Resources
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report

EIS	Environmental Impact Statement
EJ	environmental justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPD	Environmental Programs Division
ESA	environmental site assessment
FHWA	Federal Highway Administration
FIDM	Fashion Institute of Design and Merchandising
FONSI	finding of no significant impact
FR	Federal Register
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	fiscal year
GHG	greenhouse gas
H_2S	hydrogen sulfide
HAPS	hazardous air pollutants
HCFCs	hydrochlorofluorocarbons
HCMs	Historic-Cultural Monuments
HD	heavy duty
HDLADG	Historic Downtown Los Angeles Design Guidelines
HDR	HDR Engineering, Inc.
HFCs	Hydroflourocarbons
HIST UST	Historical UST registered database
HMMP	Hazardous Materials Management Plan
HP	horsepower
HREC	Historical Recognized Environmental Conditions
HSC	Health and Safety Code
HWCL	Hazardous Waste Control Law
Hz	Hertz
ICIS	Integrated Compliance Information System
Interstate 110	Harbor Freeway
kHz	kilohertz
KOPs	Key observation points
LABOE	City of Los Angeles Department of Public Works, Bureau of Engineering
LACE	Los Angeles Consolidated Electric Railway
LADOT	City of Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code

LAPD	Los Angeles Police Department
LARy	Los Angeles Railway Corporation
LASI	Los Angeles Streetcar Inc.
LASD	Los Angeles County Sheriff's Department's
LASED	Los Angeles Sports and Entertainment District
LACM	Natural History Museum of Los Angeles County
LCFS	low carbon fuel standard
L_{dn}	Day/Night Noise Level
LED	Light Emitting Diode
LEED	Leadership in Energy & Environmental Design
LEP	limited English proficiency
L_{eq}	equivalent noise level
LID	Low Impact Development
LOS	level of service
LPA	Locally Preferred Alternative
LST	localized significance threshold
LUST	leaking underground storage tank
MA	millions of years ago
MAP-21	Moving Ahead for Progress in the 21st Century Act
MATES III	Multiple Air Toxics Exposure Study III
MBTA	Migratory Bird Treaty Act
MDHD	medium-and heavy-duty vehicle
Metro	Los Angeles County Metropolitan Transportation Authority
MG/M_3	micrograms per cubic meter
MMBTU/yr	million British thermal units per year
MMRP	Mitigation Monitoring & Reporting Program
MMT	million metric tons
MOA	Memorandum of Agreement
MOCA	Museum of Contemporary Art
mph	miles per hour
MPO	metropolitan planning organization
MSAT	mobile source air toxics
MSF	maintenance and storage facility
msl	mean sea level
MT	metric tons
MTBE	methyl tertiary butyl ether
$MTCO_2e$	metric tons of carbon dioxide equivalent
MTY	metric tons per year
MW	megawatt

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NGO	Non-Governmental Organization
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO	Nitric Oxide
NOAA	National Oceanic and Atmospheric Administration
NOP	notice of preparation
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
O_3	Ozone
OCS	overhead contact system
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
OVA	organic vapor analyzer
PDF	Project Design Feature
PB	lead
PE	Pacific Electric
PFCs	Perfluorocarbons
PM2.5	fine particulate matter (2.5 microns in diameter or less)
PM10	respirable particulate matter (10 microns in diameter or less)
PMT	person miles traveled
POAQC	project of air quality concern
ppb	parts per billion
PPD	pounds per day
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
Project	Restoration of Historic Streetcar Service in Downtown Los Angeles
PSI	Preliminary Site Investigation
psi	pounds per square inch
RCM	Regulatory Compliance Measures
RCP	Regional Comprehensive Plan
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act of 1976

REC	Recognized Environmental Conditions
Reporting Rule	Greenhouse Gas Reporting Rule
RMP	Risk Management Plan
RMPP	Risk Management and Prevention Program
RTP	regional transportation plan
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
sf	square feet
SHPO	State Historic Preservation Officer
SIATech	School for Integrated Academics and Technologies
SIP	State Implementation Plan
SRA	Source Receptor Area
SLIC	spills, leaks, investigation and cleanup
SO_2	sulfur dioxide
SSO	State Safety Oversight
STOPS	Simplified Trips-On-Project Software
SUSMP	Standard Urban Storm Water Mitigation Plan
SSPWC	Standard Specification for Public Works Construction
SWEEPS	Statewide Environmental Evaluation and Planning System UST database
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
Tanner Act	Toxic Air Contaminant Identification and Control Act
TBA	tertiary butyl alcohol
TIP	transportation improvement program
TMP	Traffic Management Plan
TPH	total petroleum hydrocarbon
TPSS	traction power substation
TRPH	total recoverable petroleum hydrocarbons
TSCA	Toxic Substance Control Act
TWC	train-to-wayside-communication
UBC	Uniform Building Code
UFC	Uniform Fire Code
USC	U.S. Government Code

USDOT	U.S. Department of Transportation
UST	Underground Storage Tank
V/C	vehicle to capacity
VdB	velocity decibel
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VRP	visibility reducing particles
WCI	Western Climate Initiative
WRCC	Western Regional Climate Center
ZIMAS	Zone Information and Map Access System

Executive Summary

ES.1 Introduction

The purpose of this Draft Environmental Impact Report (EIR) is to inform decision-makers and the general public of potential environmental impacts that could result from development of the Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). For more information regarding the EIR process, refer to Chapter 1, *Introduction*.

The Project would require certain discretionary approvals from the City of Los Angeles (City) and other government agencies. Therefore, the Project is subject to environmental review requirements under the *California Environmental Quality Act* (CEQA). The lead agency for the Project under CEQA is the City. The Project may seek funding for construction and project development costs through the Federal Transit Administration (FTA) Capital Investment "Small Starts" Grant Program. Therefore, the Project may also be subject to subsequent *National Environmental Policy Act* (NEPA) review process. If federal funding is sought, a separate Environmental Assessment (EA) document would need to be completed for FTA review. If federal funding is sought, the City would be a joint lead agency with FTA under NEPA.

ES.2 Background

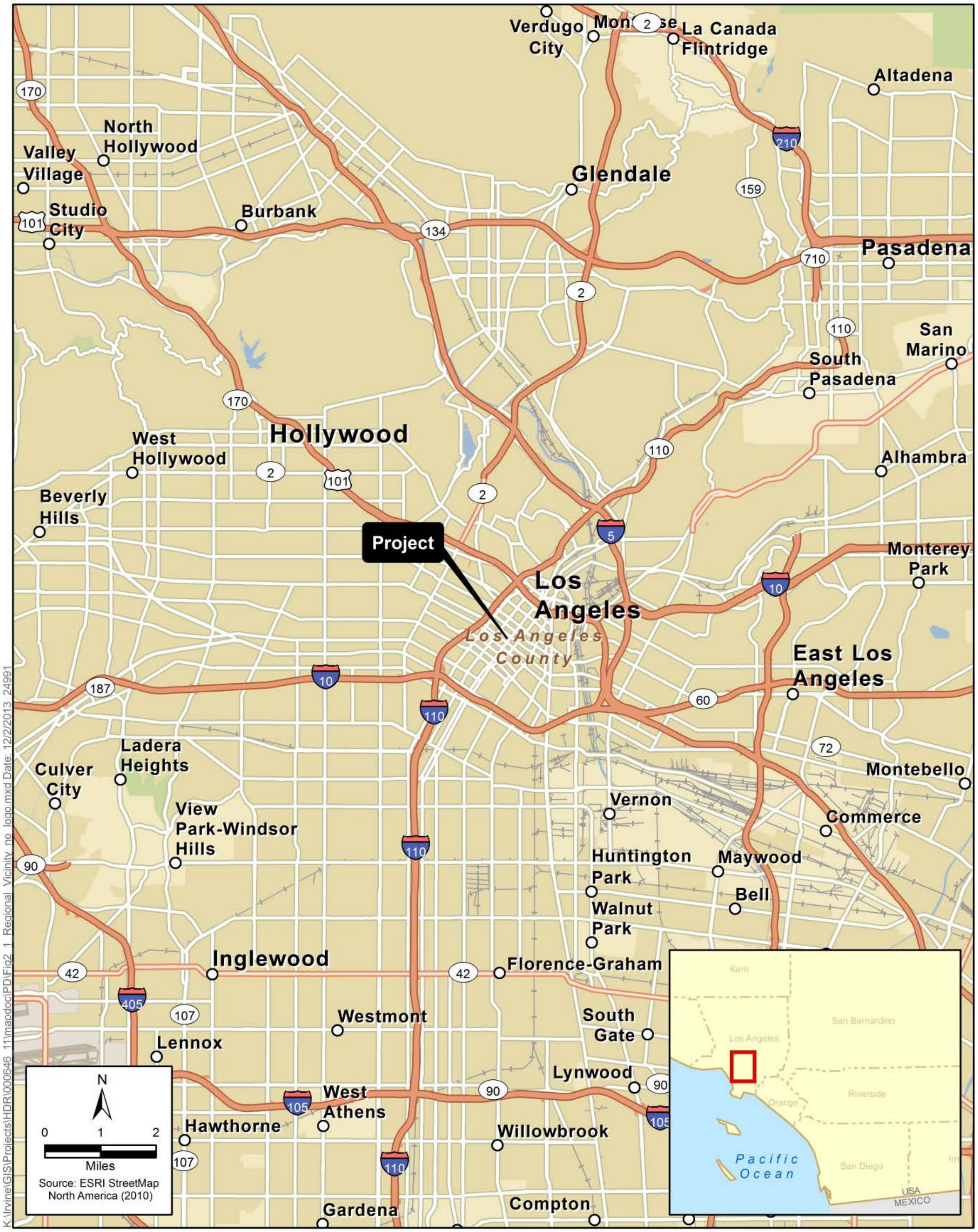
At one time, the historic streetcar network in Los Angeles spanned more than 600 miles of the metropolitan area; by the 1920s it was the largest trolley system in the world (Los Angeles County Metropolitan Transportation Authority 2012). Over a period of years, service was gradually discontinued, one route at a time, and by 1963, diesel buses had replaced the entire streetcar system. In more recent years increasing traffic congestion and worsening environmental impacts have resulted in a renewed interest in new forms of mass transit. Developing a streetcar system in downtown Los Angeles is part of this effort.

Restoration of downtown streetcar service is an idea that has been considered intermittently, for over a decade, by Los Angeles County Metropolitan Transportation Authority (Metro), as well as the former Community Redevelopment Authority (CRA/LA), and the former Central City Association Red Car Advisory Committee. Advocacy groups such as Los Angeles Streetcar, Inc. (LASI), and members of Council District 14's "Bringing Back Broadway" initiative have also been important drivers of the effort. Beginning as a concept aimed at tourism, research and outreach conducted over the past 15 years has resulted in a project geared toward promoting community revitalization, reactivating historic resources, and supporting general economic development in downtown Los Angeles, in addition to enhancing transit opportunities. In 2006, CRA/LA finalized the *Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area*, which analyzed various alignment concepts, determined the feasibility of restoring the streetcar system, and identified engineering considerations, ridership estimates and needs, potential costs of implementing the streetcar, and potential funding sources (CRA/LA 2006). As contracted by CRA/LA, Metro moved the development process forward and assisted CRA/LA with the *Restoration of Historic Streetcar Service in Downtown Los Angeles Alternatives Analysis*, which was completed in January 2012 (Metro 2012). That document analyzed a multitude of potential alignments in its initial screening process, leading to the development of seven feasible alternatives. Those alternatives were then evaluated across a variety of factors, including capital and operating cost, design constraints, service area, connections to transit and other modes of transportation, environmental impacts, and economic development opportunities. A final screening analysis identified 7th Street, which was designated at that time by the CRA/LA Board of Commissioners and the Los Angeles City Council as the Locally Preferred Alternative (LPA), for further environmental analysis in this EIR. The 7th Street Alternative (see description of alternatives below) was selected because of favorable ridership estimates, a high combined average of daily boardings, and total boardings per mile; low capital, operating, and maintenance costs; and local community support. In addition to the LPA, a second concept that would use 9th Street instead of 7th Street between Figueroa Street and Hill Street was identified as part of this process to account for vehicle lane reductions along 7th Street implemented by Los Angeles Department of Transportation (LADOT) as part of the *2010 Bicycle Master Plan*. The 9th Street Alternative was therefore included to provide an alternative to address potential traffic impacts that could occur on 7th Street.

ES.3 Project Description and Alternatives Considered

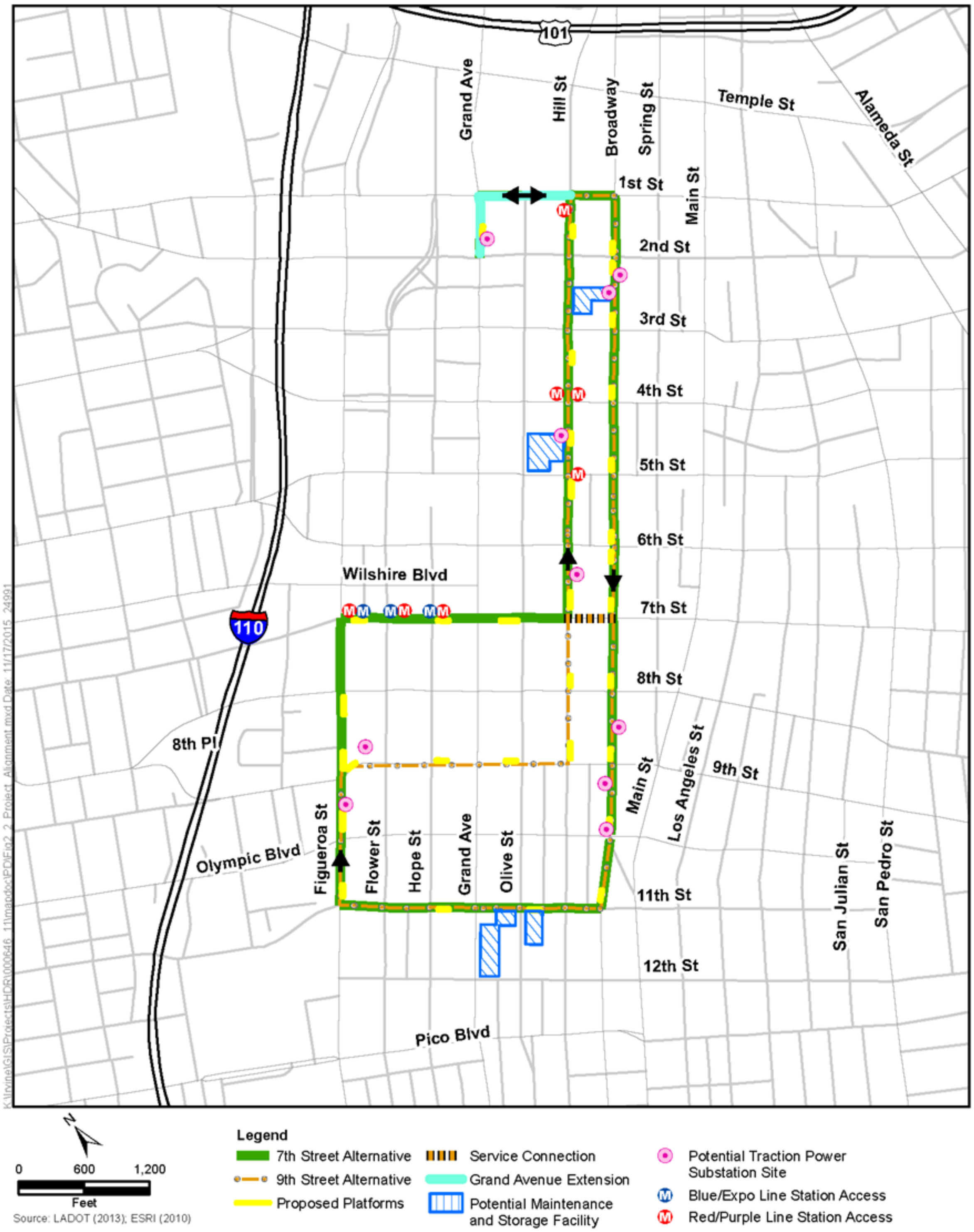
The Project would construct and operate a streetcar route in downtown Los Angeles, along a loop up to 3.8 miles in length. The project route would run along 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street. A Grand Avenue Extension is also being considered, west on 1st Street from Hill Street, then south on Grand Avenue to a terminal point north of 2nd Street. The streetcar would travel through several neighborhoods or districts within the *Central City Community Plan* area of the City including: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial District, South Park, Fashion District, and LA Live and the Convention Center. The route would be traversed by a fleet of electrically powered streetcars, which would make stops at platforms along the alignment. Power to the streetcar vehicles would be provided by traction power substations (TPSSs) supplying power via an overhead contact system (OCS). The number and placement of passenger boarding platforms and traction power substations are subject to change, based upon further development of the project design. A maintenance and storage facility (MSF) site would also be constructed as part of the Project. A detailed description of the Project is provided in Chapter 2, *Project Description*. In summary, five project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative. Figure ES-1 shows the regional location of the proposed Project. Figure ES-2 shows the Project's routing within downtown Los Angeles.

Figure ES-1. Regional Location Map



This page intentionally left blank.

Figure ES-2. Proposed Downtown Los Angeles Streetcar Route[1]



[1] Platform locations subject to change in final design.

This page intentionally left blank.

ES.3.1 Alternative 1: No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the project study area that would remain if the proposed Project would not occur.

ES.3.2 Alternative 2: 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

ES.3.3 Alternative 3: 7th Street without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

ES.3.4 Alternative 4: 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street. The project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

ES.3.5 Alternative 5: 9th Street without Grand Avenue Extension

Alternative 5 would follow the same alignment as Alternative 3, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

ES.3.6 Maintenance Storage Facility

The proposed Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition. The MSF is currently planned at one of four potential sites: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets.

ES.4 Areas of Controversy

The City of Los Angeles has hosted a number of meetings with the community and local businesses to solicit questions and concerns related to the Project. Potential areas of controversy or concern that surfaced during the alternatives analysis process and as a result of public comments submitted during the scoping period (January 3 to February 1, 2013) include the following issues (not listed in any particular order):

- Purpose and Need—Public comments regarding the purpose of and need for the project predominantly expressed the concern that the proposed Project would be duplicative (due to DASH), would increase traffic, reduce mobility and accessibility, and would not help revitalize downtown Los Angeles.
- Maintenance and Storage Facility—Public comments were received stating that the MSF would be incompatible with a residential district; decrease property values; displace parking for residential buildings; and add traffic, noise, and air pollution to a residential area. Residents directly affected by the MSF site expressed further concern over safety—particularly for children and pets—due to the elimination of secure parking and the addition of a maintenance yard.
- Transportation/Traffic—Public comments were received stating the proposed streetcar would add additional traffic to streets that already experience congestion (11th and 7th Streets), and the curbside alignment would conflict with Broadway theater revitalization due to traffic impacts and decreased operational flexibility for the theaters. Comments also included the view that the proposed Project is redundant and would not enhance transportation in the downtown Los Angeles area. Additional comments raised concerns about streetcar operations blocking residential vehicle entrances.
- Aesthetics/Visual Quality—Concerns over the proposed Project's compatibility with surrounding residential and urban infrastructure were expressed during the scoping period. The potential for streetcar infrastructure to interfere with views of historic buildings and to be inappropriately scaled and massed with surrounding buildings (particularly MSF sites) were concerns expressed by the public.
- Safety—Public comments raised concerns over pedestrian safety and the potential for increased hazards at intersections and corners.
- Historic Resources—Members of the public stated that the proposed Project could interfere with restoration of historic buildings by preventing or limiting the use of space in front of buildings for staging. Comments also raised concerns that the proposed Project would negatively affect the revitalization of historic Broadway theaters due to traffic, and that the designs of the streetcar, MSF sites, and TPSS are incompatible with historic districts.
- Air Quality—Public comments noted the adverse air quality impacts due to dust generated by construction of the streetcar and supporting facilities, and the additional exhaust created from idling cars on downtown streets due to increased congestion.
- Noise and Vibration—Concerns regarding noise levels during construction and operation of the proposed Project, particularly at night, were received. Construction noise during work hours, and noise and vibration impacts on the Colburn School were also raised as concerns.

A detailed description of the comments received during the scoping period is provided in Appendix B.

ES.5 Issues to Be Resolved

Issues to be resolved include the selection of a preferred alternative, which will be identified in the Final EIR, following consideration of comments on the Draft EIR. For purposes of this EIR, a number of potential station platforms, TPSS locations, and four MSF sites are evaluated. The final number and placement of TPSSs, stops, and the identification of a preferred MSF site will be determined based on the results of the environmental review process and further operational and design analyses.

In addition to the decisions regarding the selection of the preferred alternative and MSF sites, various design- and construction-related issues and special activities would need to be addressed as planning and design of the Project proceed. Site-specific studies will be required to develop precise impact avoidance and mitigation plans and to ensure regulatory compliance.

Stakeholder, agency, and community coordination will be required during advanced design, including but not limited to the following:

- Coordination with property owners/agencies regarding the construction schedule.
- Coordination with the Los Angeles City Department of Public Works.

Funding for the Project has not as yet been completely secured. A combination of sources is being assembled, including transfer funds from the former CRA/LA, receipts from the Community Facilities District that was formed in downtown Los Angeles to provide funding for the Project, potential FTA Small Starts funds, public-private partnership opportunities, and potential revenues forthcoming from the currently proposed extension of Measure R, which is scheduled to be voted on in the upcoming November 2016 General Election. A final financial plan for the Project remains to be formulated, using some or all of the above funding sources.

ES.6 Permits, Approvals, and Intended Uses of the EIR

This EIR is being circulated in draft form to the public and agencies for review and comment. The document is intended to inform the public and agencies of potential significant environmental effects associated with the Project. It also evaluates reasonable alternatives and proposes mitigation measures to reduce significant effects.

The final version of this EIR will be used for discretionary approvals that may be required by the City, or other reviewing agencies. Accordingly, this EIR will be used by the City, as the CEQA lead agency, to support decisions regarding project approval. The information in this EIR will be used by other agencies to support decisions regarding whether to grant the permits or approvals that may be necessary to construct and/or operate the Project.

Certification of the Final EIR, adoption of a Mitigation Monitoring & Reporting Program (MMRP), and approval of the LPA by the City of Los Angeles would be required prior to construction and implementation of the Project. Also, if federal funds are sought, an Environmental Assessment

(EA)/Finding of No Significant Impact (FONSI) would be necessary, managed under the direction of the FTA. Those federal activities, if necessary, would occur subsequent to completion of the CEQA process for which this EIR has been prepared.

This Draft EIR is a project EIR, as defined by Section 15161 of the State CEQA Guidelines and, as such, serves as an informational document for the general public and the Project's decision-makers. The City has the responsibility for preparing and distributing the Draft EIR pursuant to State CEQA Guidelines Section 21067. This EIR would be used in connection with all other permits and approvals necessary for construction and operation of the Project. This EIR would be used by LADOT, Los Angeles Department of Public Works, Bureau of Engineering (LABOE), the Los Angeles Department of Building and Safety, Los Angeles Bureau of Street Lighting, California Public Utilities Commission (CPUC), and other responsible public agencies that must approve activities undertaken with respect to the Project.

Implementation of the Project would require discretionary actions and permits from the following agencies:

- City Council Committee(s)—Recommendations for approval of the Project and certification of the EIR by the City Council.
- City Council—Certification of the EIR, adoption of Findings and Statement of Overriding Considerations, adoption of an MMRP, approval of an LPA, potential approval of eminent domain actions (should they become necessary), and possible amendments to Downtown Street Standards.
- California Public Utilities Commission—Approval regarding safety of rail crossings; the Project design related to tracks, overhead structures, and site planning; and some operational requirements.
- Los Angeles Department of Transportation—Approval of traffic signal/transit priority system improvements and street restriping plans; temporary street closures and haul routes.
- Los Angeles Department of Building and Safety—Issuance of grading haul permits, building permits, certification of occupancy, etc., for improvements such as the MSF and TPSS off the public right-of-way.
- Los Angeles Department of Public Works, Bureau of Engineering (local lead agency)—Approval of all engineering drawings and street-widening plans, related to work within the public right-of-way.
- Los Angeles Department of Public Works, Bureau of Street Services—Responsibility for street maintenance and approvals related to landscape architecture and urban forestry issues.
- Los Angeles Department of Public Works, Bureau of Street Lighting—Approval of lighting design.
- Federal Transit Administration (potential joint lead agency with City of Los Angeles under NEPA)—Approval of Project for federal funding, and approval of an EA/FONSI.
- City Planning Department:
    - Public Benefits Project approval.
    - Approval of Project subject to Urban Design Studio recommendations and Downtown Design Guide.

- Board of Police Commissioners—Approval for certain construction activities during nighttime hours, on weekends, and over holiday periods, pursuant to Los Angeles Municipal Code (LAMC) Section 41.40(j).
- Additional actions as determined to be necessary.

ES.7 Summary of Environmental Impacts of the Project Alternatives

ES.7.1 No Project Alternative

The No Project Alternative assumes that the proposed operation of a streetcar service in downtown Los Angeles would not be implemented. Consequently, no adverse effects would occur under the No Project Alternative; however, this alternative would not satisfy the statement of purpose and need for the Project.

ES.7.2 Alternatives 2, 3, 4, and 5

Under CEQA, significant environmental impacts before mitigation have been identified in the following areas:

- Noise and Vibration (construction and cumulative/construction)
- Traffic (construction, operations, and cumulative/construction and operations)

Environmental impacts associated with the four build alternatives are detailed in Tables ES-1 through ES-3 by resource area, along with mitigation measures, and the level of significance after mitigation. Table ES-1 provides a summary of impacts that would occur during the construction period, Table ES-2 provides a summary of impacts that would occur during operation of the Project, and Table ES-3 summarizes the Project's potential to contribute to cumulative impacts. Where differences among alternatives occur, such differences are clearly identified. Tables ES-1 through ES-3 provide summaries of information contained in the EIR; for further information, the reader is referred to the individual impact sections in Chapter 3 for details regarding the impacts and any associated proposed mitigation.

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.1 Aesthetics				
Removal, alteration, or demolition of existing visual features. The project could result in removal of existing street trees, which are features or elements that may be considered to contribute to the valued visual character or image of a neighborhood, community, or vicinity within the project area.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-C3: Tree Removal/Relocation.** Should street trees, need to be trimmed or removed, the Project would comply with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. Replacement trees would be placed as near to their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal.	LTS
Natural open space areas. The project area does not contain any natural or open space areas. The project would not result in the grading or development of such areas.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Structures within open space areas. The project area does not contain any natural open space areas. The project would not site any structures within such areas.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Visual contrast with existing features. Construction activities and equipment would contrast with existing features, but such contrast would be transitory and temporary.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-C1: Construction Staging/Stockpiled Materials and Equipment.** Under the direction of the LABOE, the construction contractor shall be the responsible party for providing temporary construction fencing along the periphery of active construction areas to screen as much of the construction activity as possible from view at the street level. To minimize views of stockpiled materials and idled construction equipment in staging areas and to reduce visual clutter and disorder, consistent with Bureau of Engineering Master Specification Environmental Control Measures, project construction staging areas shall be enclosed or screened from view at the street level with appropriate screening materials. The contractor shall provide daily visual inspections to ensure that the immediate surroundings of construction staging areas are free from construction-related clutter and graffiti and maintain the areas in a clean and orderly manner throughout the construction period. Graffiti shall be promptly painted over, masked out, or cleaned off. Routine sidewalk and window washing to remove dust generated by construction shall be scheduled weekly. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contract Administration Bureau Construction Inspector.	LTS
Zone changes. Project construction would not require a zone change.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Contribution to area's aesthetic value. Project construction would not contribute to the area's aesthetic value, because construction elements and activities could adversely affect the visual quality or character of the immediate area. These effects would be temporary and transitory.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Applicable guidelines and regulations. Construction of the project would comply with all applicable guidelines and regulations as per the construction specifications.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Nature and quality of recognized or valued views. Construction activities and the presence of construction equipment could adversely affect the visual quality or character of views from and within the immediate area encompassing the project site. These effects would be temporary and transitory.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Views from scenic highways, corridors, or parkways. The Project would not affect views from a designated scenic highway, corridor, or parkway.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Obstruction. Project construction would result in the temporary, minor diminution and/or partial obstruction of views in the immediate project vicinity. These effects would be temporary and transitory.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Effects on recognized views from transportation corridors. Project construction would result in temporary obstructions of views along lengths of public roadways. These effects would be temporary and transitory.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Changes in ambient illumination during nighttime. Nighttime construction would result in new sources of lighting that would change existing ambient illumination levels.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-C2: Nighttime Construction Activities.** Should construction activities with associated lighting occur during nighttime, the City shall ensure that lighting will be directed away from surrounding sensitive land uses and toward the specific location intended for illumination. Lighting associated with construction activities and security purposes shall be shielded to minimize the production of glare and spill light around sensitive land uses in the surrounding area. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Lighting spill that would affect adjacent light-sensitive areas. Nighttime construction would result in new sources of lighting that may spill off the project site and affect light-sensitive receptors.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-C2**	LTS
Shading of shadow-sensitive uses. Construction is not expected to require large cranes or other major construction-related structures and equipment that would cast large shadows on shadow-sensitive uses.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.2 Air Quality				
Regional Emissions. Construction would not result in regional impact criteria pollutant emissions that would exceed South Coast Air Quality Management District (SCAQMD) thresholds.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Local Emissions. Construction would result in local impact criteria pollutant emissions (NO_X, PM10, and PM2.5) that would exceed South Coast Air Quality Management District (SCAQMD) thresholds.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AQ-C1: Use cleaner-burning off-road construction equipment.** The contractor shall ensure that all off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 emission standards. In addition, all construction equipment shall be outfitted with best available control technology (BACT) devices certified by ARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			strategy for a similarly sized engine as defined by ARB regulations.	
Toxic Air Contaminants. Construction would not expose receptors to significant levels of TACs.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Odors. Construction odors could be created from construction equipment diesel exhaust and application of architectural coatings. Such odors, if noticeable at nearby sensitive receptors, would be temporary and transitory.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.3 Cultural				
Archaeological resources. Archaeological resources were not identified within the project area and are not expected to be encountered during construction activities, including excavation. Should archaeological discoveries be made during construction, however, appropriate procedures would be followed.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	Archaeological discoveries shall be addressed as specified in the City of Los Angeles Bureau of Engineering “Green Book” (2009).	LTS
Historical resources. Construction activities would not demolish or otherwise adversely affect historic resources. One potential exception would be historic sidewalk features, such as terrazzo installations, vault lights, basement vault hatch doors, and other features that are considered character defining features	Alt 2, 3, 4, & 5. MSF 2	LTS	**MM-CUL-C1:** The following mitigation activities shall be conducted: As part of final design, a detailed field survey would be done to identify historic sidewalk features to be avoided, protected during construction, or altered in conformance with the Secretary’s Standards. Conditions to protect historic sidewalk features and preserve	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
within the Broadway Theater and Commercial District. Adherence to appropriate mitigation measures would ensure that no substantial change to the significance of historical resources would occur.			the material in place during construction would be required: (1) Historic sidewalk features shall be covered with a protective material to avoid scratches and staining from adjacent construction work. (2) OCS poles will not be installed in terrazzo installations or vault lights. (3) Sidewalk ramps will be designed or located to avoid physical damage or alteration of historic sidewalk features. (4) The existing concrete curb will not be removed at bump out areas, in order to protect the historic sidewalk feature from being saw cut or from cracking. (5) Should incidental damage occur during construction, the historic sidewalk feature would be repaired or replaced in kind by a qualified contractor in a manner consistent with the Secretary's Standards. In the unlikely event that the sidewalk feature cannot be treated in accordance with the Secretary's Standards, there would still be a less than significant impact on the historic building that fronts the sidewalk, and there would be no substantial adverse change in the overall significance of the historical resource. **MM-AES-C1**	

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Paleontological resources. The project area has been heavily disturbed by past construction activities; project construction activities are unlikely to encounter significant resources. Excavation occurring at depths below five feet may encounter older Quaternary deposits or the Fernando Formation, which may contain paleontological resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4 TPSS	LTS	**MM-CUL-C2:** Excavations greater than five feet shall be monitored by a qualified paleontological monitor. If excavations below a depth of five feet are determined to be in artificial fill materials, or otherwise determined not to yield resources, monitoring may be reduced. Paleontological resources discovered during excavation will be salvaged, transported to a paleontological laboratory for processing, and deposited in a designated paleontological curation facility (such as the Natural History Museum of Los Angeles County).	LTS
3.4 Energy				
Energy Consumption, Conservation, and Standards. Construction energy use would be temporary and would be controlled and managed so as to not be wasteful, inefficient, or unnecessary. Minor differences in construction-period energy consumption, among Alternatives 2 and 4 compared to Alternatives 3 and 5, would occur due to the absence of two blocks of construction work associated with the Grand Avenue Extension under Alternatives 3 and 5.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Demand for New Energy Supplies and Infrastructure. Construction would result in a negligible use of diesel fuel and no new or	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
expanded sources of energy would be required.				
3.5 Geology				
Seismicity. Construction would not exacerbate existing seismic hazards or create new hazards due to the negligible risk of disturbing faults.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Liquefaction and Lateral Spreading. The Project would be susceptible to liquefaction and lateral spreading, primarily in the northern portion of the alignment. Adherence to Regulatory Compliance Measures would ensure that risks, if any, would be minimized.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**RCM-GEO-C1**: Temporary shoring will be used for lateral support of excavations and properly compacted fill soils or cement slurry shall be used for excavation backfill. A geotechnical report shall be prepared during final design, subject to approval by the City, which will recommend specific measures, including but not limited to, the following: in situ ground modification, removal of liquefiable layers and replacement with compacted fill, or support of project improvements on piles. Additional recommendations for controlling liquefaction may include densification by installation of stone columns, vibration, deep dynamic compaction, and/or compaction grouting.	LTS
Landslides. Construction is not anticipated to increase the risk of landslides, because the project area is currently developed and is stabilized with structures or plantings.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Expansive Soils. The project area is underlain with soils types that are not known to have expansive properties. Construction would not	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
introduce new or adversely modify existing expansive soils.				
Erosion. During construction, some erosion and a temporary reduction in soil stability may occur, particularly on steep grades. (e.g., along 1st Street). Adherence to regulatory requirements would ensure that proper soil stability is maintained.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**RCM-GEO-1**: Requirements under the National Pollutant Discharge Elimination System (NPDES) permit process shall be followed, including preparation of a Stormwater Pollution Prevention Plan (SWPPP) that incorporates Best Management Practices (BMP).	LTS
Landform Alteration. Construction would occur within street rights-of-way or on graded off-street land parcels; distinct or prominent geologic or topographic features would not be disturbed.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	NI
3.6 Greenhouse Gas Emissions				
Greenhouse Gas Emissions. The Project would directly and indirectly generate greenhouse gas (GHG) emissions during construction, but quantities would negligible, as compared with daily GHG production in the downtown area as well as globally.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Plan Consistency. GHG production during construction would be temporary and sufficiently small such that the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
the emissions of greenhouse gases.				
3.7 Hazards and Hazardous Materials				
Risk of Upset/Emergency Preparedness. Construction could result in excavation and disposal of hazardous materials, potential for groundwater contamination, and release of hazardous materials. Adherence to applicable Mitigation Measures would ensure adequate control of and protection from potential accidental release or explosion of a hazardous substance.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-HM-C1:** During construction, a focused Preliminary Site Investigation (PSI) shall be conducted at specified locations of concern and the proposed locations for the MSF and TPSS. The PSI shall include soil borings and laboratory analysis. Also, soils indicating a potential contamination shall be tested according to appropriate ASTM, or EPA methods. **MM-HM-C2:** Soil shall be sampled in a random and representative manner and analyzed, as applicable, for Total Recoverable Petroleum Hydrocarbons (TRPH), VOCs, Total Petroleum Hydrocarbons (TPH), *Title 22* heavy metals, reactivity (pH), corrosivity, and toxicity. **MM-HM-C3:** If VOCs are present at concentrations exceeding South Coast Air Quality Management District thresholds, a permit shall be required, for proper handling and storage. **MM-HM-C4:** Suspected contaminated soil samples shall be taken to a state-certified environmental laboratory or tested in the field in accordance with appropriate testing methods. Materials with elevated levels of TRPH, metals, or other regulated contaminants shall require handling by workers who have been adequately trained for health and safety aspects of hazardous material handling. **MM-HM-C5:** Any contaminated material (soil, asphalt, railroad ballast, concrete, or debris) that is to be hauled off-	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			site and is considered a "waste product" shall be classified as hazardous or nonhazardous waste prior to disposal. A hazardous waste manifest shall be prepared and the material transported to an appropriate class of facility for proper recycling or landfill disposal. If the soil is nonhazardous but still exceeds levels that preclude its return to the excavation, a less restrictive method of handling a disposal would be permitted. **MM-HM-C6:** All construction contractors shall be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible. Contractors shall be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process. Hazardous waste generated by the contractor at the site shall be disposed of in accordance with the City's Notification of Hazardous Substances General Conditions in the construction contract. **MM-HM-C7:** In the event groundwater is encountered during construction, dewatering shall be minimized. Sampling ports shall be provided in the dewatering system. The produced water shall be temporarily stored in large Baker-type tanks and analyzed by a state-certified environmental laboratory. If the groundwater quality falls within guidelines established by the City Department of Public Works, Bureau of Sanitation, a permit shall be obtained to discharge the water into a nearby	

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			sewer. **MM-HM-C8:** If hydrocarbon or other water contamination precludes the measures in **MM-HM-C7**, contaminated groundwater shall be treated on-site (such as in an oil-water separator) or hauled off-site for treatment and disposal in accordance with applicable regulations.	
Human Health Hazards. During construction, the transport of contaminated soils could involve potential exposure risks to construction workers and to the general public along roadways. Sensitive uses (e.g., schools) would be taken into account when selecting haul routes.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM HM-C1** through **MM-HM-C6**	LTS
3.8 Land Use				
Land Use Plan Consistency. Construction would occur with the public street rights-of-way or on one of four MSF sites under consideration. Construction activities, which would be temporary and transitory, would follow applicable controls and regulations and therefore would not be in conflict with applicable land use plans for the study area.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Land Use Compatibility. Construction would	Alt 2, 3, 4,	LTS	**RCM-LU-C1: Business Access and Signage.** The construction	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
occur with the public street rights-of-way or on one of four MSF sites under consideration, and therefore would not divide, isolate, or substantially disrupt a community or neighborhood Temporary loss of on-street parking and impairment of access to businesses would occur during construction.	& 5. MSF 1, 2, 3, & 4		contractor shall provide signs for businesses whose frontage is obstructed by construction work indicating that the business is open during construction, and provide information regarding access to the business.	
One business (Guadalupe Wedding Chapel) and one vacant business are located on MSF1, and ongoing parking lot businesses are located on all four MSF sites. Acquisition of any of the four MSF sites would require displacement of the affected parking lot businesses. If MSF1 were to be chosen, the Guadalupe Wedding Chapel business would also be displaced. Compensation to the property owner and business operator(s), and relocation assistance would be provided.	MSF 1, 2, 3, & 4	LTS	**RCM-LU-C2: Business Displacement.** Proposed displacement of the Guadalupe Wedding Chapel and any other businesses subject to displacement as a result of the Project would occur in accordance with applicable laws and regulations, including the *Uniform Business Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as mentioned. If MSF1 were to be chosen, the business would also be displaced. Compensation to the property owner and business operator(s), and relocation assistance would be provided.	LTS
3.9 Noise and Vibration				
Noise. Construction noise levels would exceed specified limits in the *L.A. CEQA Thresholds Guide*. Impacts will, however, be temporary and transitory, with impacts moving away from affected locations to the next area of construction. Noise associated with	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	PS	**MM-NV-C1:** The contractor shall limit nighttime construction to generate lower noise levels. **MM-NV-C2:** The contractor shall use specialty equipment with enclosed engines and/or high-performance mufflers, where practicable and available. **MM-NV-C3:** The contractor shall locate equipment and staging	SU

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
construction of the MSF will be experienced by receptors in the vicinity for extended periods of time. Mitigation measures would reduce impacts, but residual impacts would remain.			areas as far from noise-sensitive receivers as practicable. **MM-NV-C4:** The contractor shall limit unnecessary idling of equipment. **MM-NV-C5:** The contractor shall install temporary noise barriers to enclose stationary noise sources, such as compressors, generators, laydown and staging areas, and other noisy equipment as appropriate and practicable. **MM-NV-C6:** The contractor shall reroute construction-related truck traffic away from residential buildings to the extent practicable. **MM-NV-C7:** The contractor shall sequence the use of equipment so that simultaneous use of the loudest pieces of equipment is avoided as much as practicable. **MM-NV-C8:** The contractor shall avoid the use of impact equipment and, where practicable, use non-impact equipment. Non-impact equipment could include electric or hydraulic-powered equipment rather than diesel and gasoline-powered equipment where feasible. **MM-NV-C9:** The contractor shall use portable noise control enclosures for welding in the construction staging area. **MM-NV-C10:** If a noise variance from Section 41.40(a) of the Los Angeles Municipal Code is required, a noise limit shall be specified. The contractor shall employ a combination of recommended noise-reducing approaches to meet the noise limit.	

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			MM-NV-C11: Specific measures to be employed to mitigate construction noise impacts shall be developed by the contractor and presented in the form of a Noise Control Plan. The Noise Control Plan shall be submitted for review and approval before the beginning of construction activities.	
Vibration. Construction activities, such as compaction, pavement breaking, and the use of excavators, could result in perceptible levels of groundborne vibration. Physical damage to structures, including fragile buildings, is not expected and can be avoided with proper mitigation.	Alt 2, 3, 4, and 5. MSF 1, 2, 3, & 4	LTS	**MM-NV-C12:** A preconstruction survey shall be conducted, including an inspection of building foundations and photographs of pre-existing conditions. The survey can be limited to (1) the first row of buildings along the selected alignment and will include the locations of the glass blocks and associated subterranean vaults and (2) buildings within approximately 200 feet of the construction zone that are deemed to be extremely susceptible to vibration. These will be included in the survey. **MM-NV-C13:** Per the *FTA Guidance Manual*, construction vibration shall be limited to the PPV, ranging from 0.12 inch per second for "buildings identifiable as being extremely susceptible to vibration damage" to 0.5 inch per second for "reinforced concrete, steel, or timber" buildings. The contract specifications shall establish appropriate damage risk vibration limits for historic properties within 200 feet of construction. **MM-NV-C14:** The contractor shall be required to monitor vibration at any building where the lower vibration limit is applicable and at any location where complaints about vibration are received from building occupants. This shall	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			include "special" land uses, such as the Disney Concert Hall, Music Center, and the Colburn School. **MM-NV-C15:** If the contractor's plan calls for high-vibration construction activities being performed close to structures, the contractor may be required to use alternative procedures that produce lower vibration levels. Alternative procedures shall include the use of non-vibratory compaction in limited areas and concrete saws in place of jackhammers or pavement breakers for demolition. To avoid potential interference with "special" land uses caused by construction vibration, the contractor shall be required to coordinate with building owners to limit high-vibration construction activities to times when sensitive activities are not occurring inside the buildings. **MM-NV-C16:** The Contractor shall hire a Mitigation Coordinator to provide notice to venues and sound-sensitive land uses along the corridor at least two weeks in advance of construction activities. The role of the Mitigation Coordinator will be to respond to concerns related to implementation of construction-related mitigation measures.	
3.10 Transportation and Traffic				
Intersection Capacity. Intersections would experience deterioration in performance due to project construction activities. Adherence to Mitigation Measures will lessen the impacts.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	**MM-TRAF-C1: Develop a Construction Traffic Management Plan.** The Los Angeles Department of Transportation shall develop and implement a Traffic Management Plan (TMP) to reduce construction-related traffic impacts. The TMP shall be prepared during final design for	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			implementation during construction to mitigate the traffic impacts caused by construction of the Project. The TMP shall identify potential measures such as public awareness and changeable message signs (CMS). The TMP shall be developed in consultation with emergency service providers (i.e., local police and fire departments). The TMP shall address temporary traffic signals, bicycle lane detours, or using flagmen adjacent to construction activities, as appropriate. A community affairs entity shall be established to administer a construction impact mitigation program. This program shall keep the community informed of all construction activities and shall also set up a hotline number with a direct connection to project staff. The program shall identify community/business needs prior to and during the construction period through the use of surveys and community meetings. **MM-TRAF-C2: Construction Mitigation Monitoring**. A construction mitigation program shall be established with participation of BOE, Bureau of Contracts Administration, and the construction contractor. All mitigation measures shall be monitored and reported to BOE on a quarterly basis.	

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-1. Summary of Construction Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Project Access. Traffic operations at intersections adjacent to construction activities may deteriorate as a result of temporary reduced capacity.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	**MM-TRAF-C1**	LTS
Transit System Capacity. Delays associated with lane closures would affect public transit vehicles if services are not rerouted.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	**MM-TRAF-C1**	LTS
Parking. During construction, removal of on-street parking would not substantially alter the overall availability of parking during peak hours.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	None required.	LTS
In-Street Construction Impacts. Construction would involve temporary lane closures which would result in delays for vehicles using roadways.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	**MM-TRAF-C1** **MM-TRAF-C2**	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.1 Aesthetics				
Removal, alteration, or demolition of existing visual features. Built elements of the proposed Project include the streetcar vehicles, platforms, shelters, catenary poles and OCS wires. The introduction of these built features would not remove, alter or demolish existing features or elements that contribute to the visual character throughout the project area.	Alt 2 Alt 3, 4, & 5. MSF 1, 2, 3, & 4.	LTS	**MM-AES-O1: Design of Traction Power Substation Structures.** The City of Los Angeles shall ensure that all TPSS structures will be designed to minimize their visual presence. Where site and design allow, the TPSS structures shall incorporate design and location features, such as the minimization of the size of the structures, setbacks from adjoining street frontages, screening, and/or architectural treatments that are appropriate to the design setting where visible from the public right-of-way at street level. All TPSS structures shall be designed and built to satisfy the established final design requirements and in compliance with all applicable design guidelines, policies, development standards, and Public Benefits projects performance measures, if necessary. Should a TPSS be located within the public right-of-way, it shall be designed in conformance with the Los Angeles Above-Ground Facility regulations contained in Section 62.08 of the LAMC. **MM-AES-O2: Maintenance Storage Facility Design and Operational Lighting.** The City of Los Angeles shall ensure that the MSF site plan, building treatments and architecture will be appropriate in scale, proportion, and detail with appropriate use of material, texture, articulation, and color in consideration of the surrounding design context. The aesthetic	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			treatment shall be designed and built in compliance with all applicable design guidelines, policies, and development standards. Light associated with the MSF shall be properly controlled and directed on site in a manner that would minimize the potential for spill light. The Project would adhere to the requirements of LAMC Section 14.00 in all respects and will follow all applicable procedures. All applicable performance standards or alternative compliance measures will be addressed and all procedures for review and approval will be followed. **MM-AES-O3: Overhead Contact System Poles.** The City of Los Angeles shall ensure that design and installation of the OCS poles will be consistent with the surrounding design context. OCS poles shall be designed and installed in compliance with all applicable design guidelines, policies, and development standards.	
Natural open space areas. The project area does not contain natural open space areas.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Structures within open space areas. The project area does not contain natural open space areas.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Visual contrast with existing features. Operation activities and equipment would be consistent with features of the urban downtown environment, including restoration of historic streetcar service to the downtown. Application of design Mitigation Measures would ensure proper fit of project elements into its surroundings.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Zone changes. The Project would not require a zoning consideration for all elements installed within the public streets and sidewalks. TPSS locations, if within private property, would not be a building that would detract from the existing style or image of the area.	Alt 2, 3, 4, & 5. TPSS	NI	None required.	N/A
Regarding any of the four candidate MSF sites, at none of the sites would there be buildings that would detract from the existing style or image of the area, with adherence to proper design integration. (See also 3.8 *Land Use*.)	MSF 1, 2, 3, & 4.	LTS	**MM-AES-O2** **MM-AES-O3**	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Contribution to area's aesthetic value. Project elements (streetcar vehicles, platforms, shelters, catenary OCS poles and wires) would be unobtrusive and would not alter the visual quality of the project area. In the sense that the Project would restore a prior historic streetcar system in downtown Los Angeles, the Project would be consistent with its surroundings in character.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Applicable guidelines and regulations. Operation of the project would comply with applicable guidelines and regulations.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Nature and quality of recognized or valued views. Project elements would not adversely affect visual quality or character, and thus, valued views, of the immediate area encompassing the project site.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Views from scenic highways, corridors, or parkways. The project would not affect views from a designated scenic highway, corridor, or parkway.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Obstruction. Project elements would result in the minor diminution and partial obstruction of some views in the immediate project vicinity.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-O3**	LTS
Effects on recognized views from transportation corridors. Project elements would result in minor visual impacts on the nature or quality of recognized views available from public roadways.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Changes in ambient illumination during nighttime. Project elements would not change existing ambient illumination levels; however, the MSF sites would introduce new light sources that would change the ambient illumination levels to the project area.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-O2**	LTS
Lighting spill that would affect adjacent light-sensitive areas. Project elements would not result in new sources of lighting that may spill off the project site and affect light-sensitive receptors, however the MSF sites would introduce a new source that would affect light-sensitive receptors.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-AES-O2**	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Shading of shadow-sensitive uses. Project elements would not create bulk and large scale structures sufficient to cast large shadows on shadow-sensitive uses.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.2 Air Quality				
Regional Emissions. The Project would not result in regional criteria pollutant emissions (Pb, ROG, NO_X, CO, SO_X, PM10, and PM2.5) that would exceed South Coast Air Quality Management District (SCAQMD) thresholds. A small reduction may be expected from reduced auto use in downtown.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Local Emissions. The Project would not result in local impact criteria pollutant emissions (NO_X, PM10, and PM2.5) that would exceed South Coast Air Quality Management District (SCAQMD) thresholds. A small reduction may be expected from reduced auto use in downtown. The Project would not be considered a Project of Air Quality Concern nor would it result in a concern related to mobile air toxics.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
California CO standards. Operation of the project would not result in an exceedance or	Alt 2, 3, 4, & 5. MSF 1,	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
exacerbate an existing exceedance of an AAQS.	2, 3, & 4			
TAC/MSAT. The Project would not result in meaningful changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the Project.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Onsite Stationary Sources. The Project would not result in on-site stationary source emissions of TACs.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Onsite Hazardous Materials. On site storage and use of potentially hazardous materials would follow applicable regulations and requirements. The Project and MSF operation would not expose receptors to significant levels of TACs.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Occupancy of Sensitive Individuals. The Project would not involve the use of hazardous materials on its vehicles nor would times of exposure for passengers waiting at stations result in any hazard.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Odor. The Project and MSF operation would not create objectionable odors at nearby sensitive receptors.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.3 Cultural Resources				
Archaeological resources. Operation would not involve activities that could cause an adverse change in the significance of archaeological resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Historical resources. Design and installation of the project elements would be consistent with the period of significance for many of the historic properties residing in the project area. Careful design integration of project elements would maintain that consistency.	Alt 2, 3, 4, & 5. MSF 2 TPSS	LTS	**MM-CUL-O1:** The City of Los Angeles shall ensure that design and installation of all project facilities and elements that are adjacent to or abutting historical resources or within a historic district will be consistent with the surrounding design context, through consultation with and approval by the City of Los Angeles Office of Historic Resources. Project facilities and elements shall be designed for consistency and installed to be in compliance with *the Historic Downtown Los Angeles Design Guidelines* and the *Broadway Streetscape Master Plan*, as applicable. **MM-AES-O3** **MM-AES-O1, MM-AES-O3, & MM-CUL-O1** for TPSS and MSF	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Paleontological resources. Operation of the project would not have the potential to disturb unknown significant paleontological resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.4 Energy				
Direct Energy Consumption, Conservation, and Standards. Energy use would not be wasteful, inefficient, or unnecessary. Energy resources for streetcar operation would be partially offset by reduced auto travel.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Indirect Energy Consumption, Conservation, and Standards. Operation would reduce VMT resulting in energy savings and reducing indirect operational energy consumption. Estimated savings in VMT-related energy would range from 7.566 to 10,634 gallons of gasoline, annually.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Demand for New Energy Supplies and Infrastructure. Operation would result in a negligible increase in the overall demand for electricity within the LADWP service area as planned for in the City's power system. Project electricity requirements are acknowledged to be within planned LADWP supply estimates.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.5 Geology				
Seismicity. Seismic hazards cannot be completely avoided, but operation would not exacerbate existing seismic hazards or create new hazards due to the negligible risk of disturbing faults.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Liquefaction and Lateral Spreading. The Project would be susceptible to liquefaction and lateral spreading.	Alt 2, 3, 4, & 5. MSF 1	LTS	**RCM-GEO-C1**	LTS
Landslides. Operation of the Project would not involve earth movement and therefore would not create new or exacerbate existing landslide hazards.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Expansive Soils. Operation of the Project would occur on City streets and within an MSF site that would have been constructed to address hazards associated with expansive soils.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Erosion. Operation of the Project would occur on City streets and within an MSF site that would be resurfaced or landscaped. The potential for erosion would be avoided.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable
[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Landform Alteration. Operation would not alter a distinct or prominent geologic or topographic feature.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.6 Greenhouse Gas Emissions				
Greenhouse Gas Emissions. The Project would generate greenhouse gas emissions. However, reductions in automobile use resulting from improved transit service in downtown Los Angeles would result in a net reduction of GHG emissions. Estimated GHG reductions range from 371 to 866 metric tons of CO_2 e annually.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Plan Consistency. The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.7 Hazards and Hazardous Materials				
Risk of Upset/Emergency Preparedness. Operation would entail the routine use of potentially hazardous materials for daily functions within the selected MSF site. All applicable regulatory procedures and practices would be followed to properly use, control and store such materials.	MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Human Health Hazards. The use and transport of any hazardous materials, such as lubricants and cleaning solvents, required for the operation would be minimal, would comply with applicable regulations, and would therefore not pose a danger to sensitive receptors.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.8 Land Use				
Land Use Plan Consistency. The Project would not conflict with any land use plans or policies.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**RCM-LU-O1: *Downtown Design Guidelines*.** Design of the Project would comply with all applicable guidelines and requirements included in the *Downtown Design Guidelines* and Public Benefit projects performance measures, if necessary.	LTS
Land Use Compatibility. The project elements and features would be consistent with their surroundings and would not divide, isolate, or substantially disrupt a community or neighborhood.	Alt 2, 3, 4, & 5.	LTS	None required.	LTS
Creation of an MSF on one of the four candidate sites would be done to be in satisfaction of the Los Angeles Municipal Code (LAMC), Section 14.00, Article 4, pertaining to Public Benefit Projects.	MSF 1, 2, 3, & 4	LTS	**MM-LU-O1: LAMC Public Benefits Projects Conformity.** The Project shall adhere to the requirements of LAMC Section 14.00 in all respects and shall follow all applicable procedures. All applicable performance standards or alternative compliance measures shall be addressed and all procedures for review and approval shall be followed. The City of Los Angeles BOE shall ensure the carrying out of the mitigation	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
			measure.	
3.9 Noise and Vibration				
Streetcar Noise. Noise generated from streetcar operations (i.e., wheel squeal) would exceed FTA Moderate impact criteria and CEQA significance threshold at Disney Hall. Adequate mitigation is available.	Alt 2 & 4	S	**MM-NV-O1:** The contractor shall install a “low impact” frog, for special trackwork as well as wheel dampers if wheel squeal occurs.	LTS
Streetcar Noise. Noise generated from streetcar operations would exceed FTA Moderate impact criteria and CEQA significance threshold at several receivers in 2020 and 2040. Impacts are all due to growth in traffic. Mitigation is not available.	Alt 2, 3, 4, & 5.	S	None feasible.	SU
Streetcar Noise. Noise generated from MSF operations would exceed FTA criteria and CEQA significance thresholds at Guadalupe Wedding Chapel (M1), multi-family apartments at Hill and 4th Street (M2) and the Grand Lofts (M4).	MSF 1, 2, & 3	LTS	**MM-NV-O2:** The contractor shall use a “low impact” frog, for all special trackwork within the MSF. Rail lubricators shall be installed at all tight radius curves within the MSF to reduce and control wheel squeal.	LTS
Streetcar Noise. TPSS operations would not exceed FTA criteria or CEQA significance thresholds.	TPSS	LTS	**MM-NV-O3:** TPSS units shall be ordered specifying adherence to the Contract Specification noise level limit of 50 dBA at 50 feet from any side of the TPSS unit.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Streetcar Vibration. Streetcar operations could result in vibration impacts inside some sensitive spaces such as theatres and concert halls.	Alt 2, 3, 4, and 5.	LTS	**MM-NV-O4:** If the track would be less than 1 foot from any part of a building foundation, mitigation measures, such as a resilient mat installed under the trackbed or comparable design measure, would be used.	LTS
3.10 Transportation and Traffic				
Intersection Capacity. Intersections would operate with delays exceeding LADOT impact significance criteria at the following locations:				
• Hill Street/1st Street • Hill Street/7th Street • Grand Avenue/1st Street	(Alt 2, 3, & 4) (Alt 2 & 3) (Alt 2 & 4)	S	None Available	SU
• None	Alt 5	NI	None required	NI
Bicycle Safety. Bicycle/rail flangeway conflicts would exist on street segments without designated bicycle lanes and where bicycles and streetcars must share the curb travel lane. This occurs at the following locations: • Broadway – 1st to 11th Streets (Alt 2, 3, 4, & 5) • 9th Street – Figueroa to Hill Streets (Alt 2 and 3) • Hill Street – 9th or 7th Street to 1st Street	Alt 2, 3, 4, & 5.	PS	**MM-TRAF-O1** Mitigation to be considered would include: • Signage and pavement markings to alert bicyclists to the presence of streetcar tracks. • Instruct cyclists to cross tracks perpendicular to the direction of the rails for left-turning cyclists; pavement markings shall be provided to encourage perpendicular bicycle turning movements, such as "Copenhagen Left" turns. The signage and/or pavement markings would also clearly identify the presence of the flangeway to cyclists traveling parallel	SU

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-2. Summary of Operation Period Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
(Alt 2, 3, 4, & 5) Conflicts consist of the potential for bicycle tires to become lodged in streetcar track flangeways.			to the fixed guideway. • Alert bicyclists to use parallel bike routes (or Class II bike facilities) where available, such as Spring Street as an alternative to southbound Broadway. • Recommended alternate routes.	
Pedestrian Safety. Streetcar operations and station boarding areas would be designed to provide for adequate pedestrian safety while boarding and alighting.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Vehicular Safety. Streetcar operations would not increase the risks related to vehicles.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
Transit System Capacity. Operation would supplement both regional transit services and local circulators.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable
[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-3. Summary of Cumulative Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.1 Aesthetics				
The project would not contribute to a cumulatively considerable significant impact to visual resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.2 Air Quality				
The Project would not have a cumulatively considerable contribution to cumulative impacts with respect to criteria pollutant emissions.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.3 Cultural				
Archaeological resources. The Project would not have a considerable contribution to significant cumulative impacts on archaeological resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Historical resources. The Project would not have a considerable contribution to significant cumulative impacts on historical resources.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
Paleontological resources. The Project would not have a considerable contribution to significant cumulative impacts on paleontological resources following mitigation.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-CUL-C2**	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-3. Summary of Cumulative Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.4 Energy				
The Project would not have a cumulatively considerable effect on overall energy supplies, conservation, and the demand for new energy infrastructure.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.5 Geology				
The Project would not have a cumulatively considerable effect on geologic hazards, erosion, and landforms.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**RCM-GEO-C1**	LTS
3.6 Greenhouse Gas				
While cumulative greenhouse gas emissions would continue to be significant on a global basis, the Project's contribution would not be considered cumulatively considerable.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	NI	None required.	N/A
3.7 Hazards and Hazardous Materials				
The Project would not have a cumulatively considerable effect on hazardous materials.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	**MM-HM-C1** through **MM-HM-C8**	LTS
3.8 Land Use				
The Project would not have a cumulatively considerable effect on consistency with land use plans and land use compatibility.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-3. Summary of Cumulative Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
3.9 Noise and Vibration				
The Project could have a cumulatively considerable effect on noise and vibration levels during construction.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	PS	**MM-NV-C1** through **MM-NV-C16**	SU
The Project would not have a cumulatively considerable effect on noise levels during operation.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4 TPSS	LTS	**MM-NV-O1**through **MM-NV-O4**	LTS
The Project would not have a cumulatively considerable effect on vibration levels during operation.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	LTS
3.10 Transportation and Traffic				
The Project would result in a cumulatively considerable contribution to a significant cumulative impact at the following intersections:				
• Hill Street/1st Street • Hill Street/7th Street • Grand Avenue/1st Street	(Alt 2, 3, & 4) (Alt 2 & 3) (Alt 2 & 4)	SU	None available.	SU

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Table ES-3. Summary of Cumulative Environmental Impacts[a,b]

Impact/Description	Alternative	Significance Prior to Mitigation	Mitigation/Description	Impact Significance After Mitigation
Bicycle and Pedestrian Infrastructure and Safety. The Project could have a cumulatively considerable impact related to bicycle infrastructure and safety.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	PS	**MM-TRAF-O1**	PS
Emergency Access. The Project would not result in a cumulatively considerable contribution to cumulative effects related to emergency services.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	N/A
Public Transit. The Project would not result in a cumulatively considerable contribution to cumulative effects related to public transit.	Alt 2, 3, 4, & 5. MSF 1, 2, 3, & 4	LTS	None required.	N/A

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

This page was intentionally left blank.

[a] NI = No Impact, LTS = Less Than Significant, PS = Potentially Significant, S = Significant, SU = Significant and Unavoidable

[b] MSF 1 = Broadway and 2nd Street, MSF 2 = Hill Street and 5th Street, MSF 3 = 11th Street and Olive Street (East), MSF 4 = 11th Street and Olive Street (West)

Chapter 1
Introduction

1.1 Purpose of the EIR

The purpose of this Draft Environmental Impact Report (EIR) is to inform decision-makers and the general public of potential environmental impacts that could result from development of the Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). A detailed description of the Project is provided in Chapter 2, *Project Description*.

The lead agency for the Project under *California Environmental Quality Act* (CEQA) is the City of Los Angeles (City). Development of the project and its environmental review process are being managed through the joint cooperation of the Los Angeles County Metropolitan Transportation Authority (Metro) and the City's Department of Transportation and Bureau of Engineering. Additional support is being provided by Council District 14 and Los Angeles Streetcar Inc., an independent non-profit agency.

The Project is subject to environmental review requirements under CEQA. The Project may seek funding for construction and project development costs through the Federal Transit Administration (FTA) Capital Investment "Small Starts" Grant Program. Therefore, if federal funding is sought the Project would also be subject to subsequent *National Environmental Policy Act* (NEPA) review process and a separate Environmental Assessment document would be completed for FTA review. If federal funds are sought, the City would be a joint lead agency with FTA under NEPA. The Project would require certain discretionary approvals from FTA (if federal funding is sought), the City, and other governmental agencies.

The major components of the CEQA EIR analysis are provided in Chapter 3, *CEQA Environmental Impact Analysis*. As described in Section 15121(a) and 15362 of the State CEQA Guidelines, an EIR is an informational document that informs public agency decision-makers and the public of the significant environmental effects of a project, identifies possible ways to avoid or minimize or mitigate the significant effects, and describes reasonable alternatives to a project. The purpose of this EIR, therefore, is to discuss potential effects on the environment resulting from the Project that the City has determined may be significant. In addition, feasible mitigation measures are recommended, where applicable, to significant environmental impacts. A Mitigation Monitoring and Reporting Program will be prepared and adopted by the City pursuant to Section 15097 of the State CEQA Guidelines.

The EIR is prepared by or under the direction of the City, which has primary responsibility for approving or carrying out the Project.

1.2 Intended Uses of the EIR

This EIR is being circulated to the public and agencies for review and comment. The document is intended to inform the public and agencies of potential significant environmental effects associated with the Project. It also evaluates reasonable alternatives and proposes mitigation measures to reduce significant effects.

The information in this EIR will be used for discretionary approvals that may be required by the City or other reviewing agencies. Accordingly, this EIR will be used by the City, as the CEQA lead agency, to support decisions regarding project approval. The information in this EIR will be used by other agencies to support decisions regarding whether to grant the permits or approvals that may be necessary to construct and/or operate the Project. Refer to Section 2.10, *Permits, Approvals, and Intended Uses of the EIR*, for more information.

1.3 Environmental Review Process

An EIR is prepared in two key stages. First, a Draft EIR is prepared and distributed for public and agency review. Once comments on the Draft EIR are received, responses to those comments, as well as any additional relevant Project information, are prepared and compiled in a Final EIR. Both of these documents, along with any related technical appendices, represent the complete record of the EIR.

The Final EIR is used by the recommending bodies and the final decision-makers (the City) to weigh the benefits of the Project against the environmental impacts.

This Draft EIR will be circulated for review and comment by the public and other interested parties, agencies, and organizations for at least 45 calendar days. A public meeting on the Project will be held during the review period. Notices regarding the time and location will be published prior to the public meeting date. All comments or questions about the Draft EIR should be addressed to:

William Jones, Environmental Supervisor II
Los Angeles Department of Public Works, Bureau of Engineering
Environmental Management Group
1149 South Broadway, Suite 600
Los Angeles, CA 90015-2213
Email: eng.lastreetcarproject@lacity.org

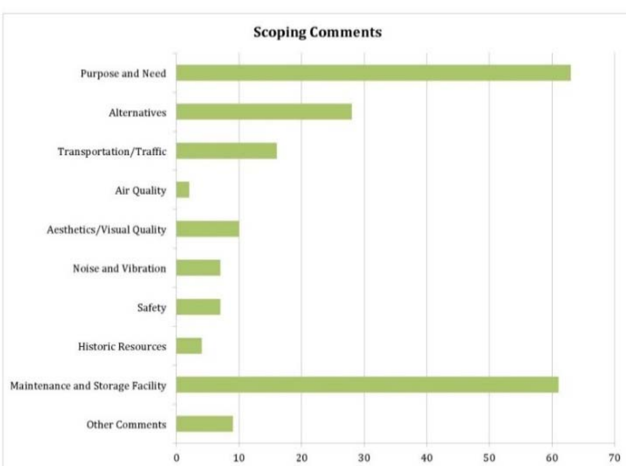
Following public review of the Draft EIR, a Final EIR will be prepared in response to comments received during the public review period. The Final EIR will be available for public review at least 10 days prior to its certification (State CEQA Guidelines Section 15088(b)). Following certification of the EIR, a Notice of Determination will be filed with the Los Angeles County Clerk (Section 15373 of the State CEQA Guidelines).

1.4 Community/Public Outreach Efforts

Metro hosted a series of early scoping meetings and community updates for the Alternatives Analysis in 2011. The City published the Notice of Preparation (NOP) for the EIR on January 3, 2013. The NOP (see Appendix A) provided formal notice of the opportunity to comment in writing and/or in person at the public scoping meeting. The CEQA scoping period started on January 3 and ended on February 1, 2013. Subsequently, the environmental study required updating to include several additional studies that became necessary: an FTA-required STOPS Model ridership estimation, analysis of two additional Maintenance and Storage Facility (MSF) sites, analysis of three proposed locations for a layover track, modification of the Project opening year from 2016 to 2020, modification of the Project horizon year from 2035 to 2040, updating of patronage estimates, and evaluation of two additional build alternatives (7th Street Alternative without a Grand Avenue Extension and 9th Street Alternative without a Grand Avenue Extension).

This Draft EIR is being publicly circulated for 45 days. During the 45-day review period, the public, organizations, and government agencies are encouraged to comment on the environmental issues discussed in this Draft EIR (see Section 1.3). In addition, all of the Project's public outreach efforts comply with applicable federal requirements, in accordance with Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000), which requires federal programs and activities to be accessible to persons with limited English language proficiency.

1.5 Areas of Public Concern and Known Controversy



Public comments submitted during the scoping period (January 3 to February 1, 2013) expressed concerns regarding the issues listed in the chart to the left. A detailed description of the comments received during the scoping period is provided in Appendix B. As illustrated in the chart, the areas of greatest concern and controversy were identified as the purpose and need, MSF, and alternatives. Traffic, visual quality, and safety were also identified as key concerns.

1.6 Organization of the EIR

This Draft EIR conforms to the content requirements of the State CEQA Guidelines. A list of the chapters and a brief description of their content is provided here to assist the reader in locating information.

Executive Summary: Located at the front of this document, the Executive Summary provides a brief description of the Project, including an overview of the impact analysis, recommended mitigation measures, and net residual impact. Summary information regarding the alternatives and key conclusions is also provided.

Chapter 1: Introduction: The Introduction provides a general orientation regarding the purpose of CEQA, as well as this Draft EIR, and includes information on scoping for the Draft EIR, availability of documents, and the review process.

Chapter 2. Project Description: This chapter presents a statement of the project objectives as well as the purpose and need, a description of the location and setting for the Project, a detailed description of the Project's physical and operating characteristics, and related information regarding phasing and implementation.

Chapter 3. CEQA Environmental Impact Analysis: This chapter analyzes potential impacts under CEQA from implementation of the Project. The impact discussion is organized into topical issues that have the potential to result in significant impacts.

Chapter 4. Alternatives to the Proposed Project: This chapter includes a discussion of the proposed alternatives and discusses the comparative merits of each, in accordance with State CEQA Guidelines Section 15126.6.

Chapter 5. Other Environmental Considerations: This chapter evaluates contextual impacts related to growth-inducing effects, impacts found not to be significant, and irretrievable resource impacts.

Chapter 6. Organizations and Persons Consulted: This chapter lists persons who contributed directly to the preparation of this EIR.

Chapter 7. List of Preparers: This chapter lists the persons who prepared this EIR.

Chapter 8. References: This chapter lists the sources of information that were referenced for the analyses contained within this EIR.

Chapter 2
Project Description

2.1 Introduction

This chapter describes the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles (referred to as “Project” or “proposed Project”) and discusses the Project’s objectives and need, alternatives considered, project elements, and construction activities.

The lead agency for the Project under CEQA is the City of Los Angeles (City). Development of the Project and its environmental review process are being managed through the joint cooperation of the Los Angeles County Metropolitan Transportation Authority (Metro) and the City’s Department of Transportation and Bureau of Engineering. Additional support is being provided by Council District 14 and Los Angeles Streetcar Inc. (LASI), an independent non-profit agency. The Project is seeking funding for construction and project development costs through the Federal Transit Administration (FTA) Capital Investment “Small Starts” Grant Program. Funding for the proposed Project is also being sought through public private partnerships, and provided by Los Angeles Community Redevelopment Agency (CRA/LA[1]) funds, and funds raised by the Community Facilities District (CFD).

Simulated View, North along Figueroa Street at Olympic Boulevard (NC3D 2013)

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along a 3.8-mile one-way loop. The project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street.

The project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or

[1] CRA/LA is the Designated Local Authority Successor Agency to the Community Redevelopment Agency of the City of Los Angeles. Successor Agencies were established to facilitate the winding down process of local Redevelopment Agencies following their dissolution effective February 1, 2012.

districts within the Central City Community Plan area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center. This dense urban area is the region's largest employment center and one of the region's largest tourist destinations. Also, the downtown Los Angeles resident population has grown to over 52,000 residents with 6,880 new residents between 2011 and 2013, and 23,520 new residents from 2006 to 2013 (Downtown LA Demographic Study 2013). Streetcar stops would be located approximately every block in the north/south direction and approximately every other block in the east/west direction.

Figure 2-1 shows the regional location of the proposed Project.

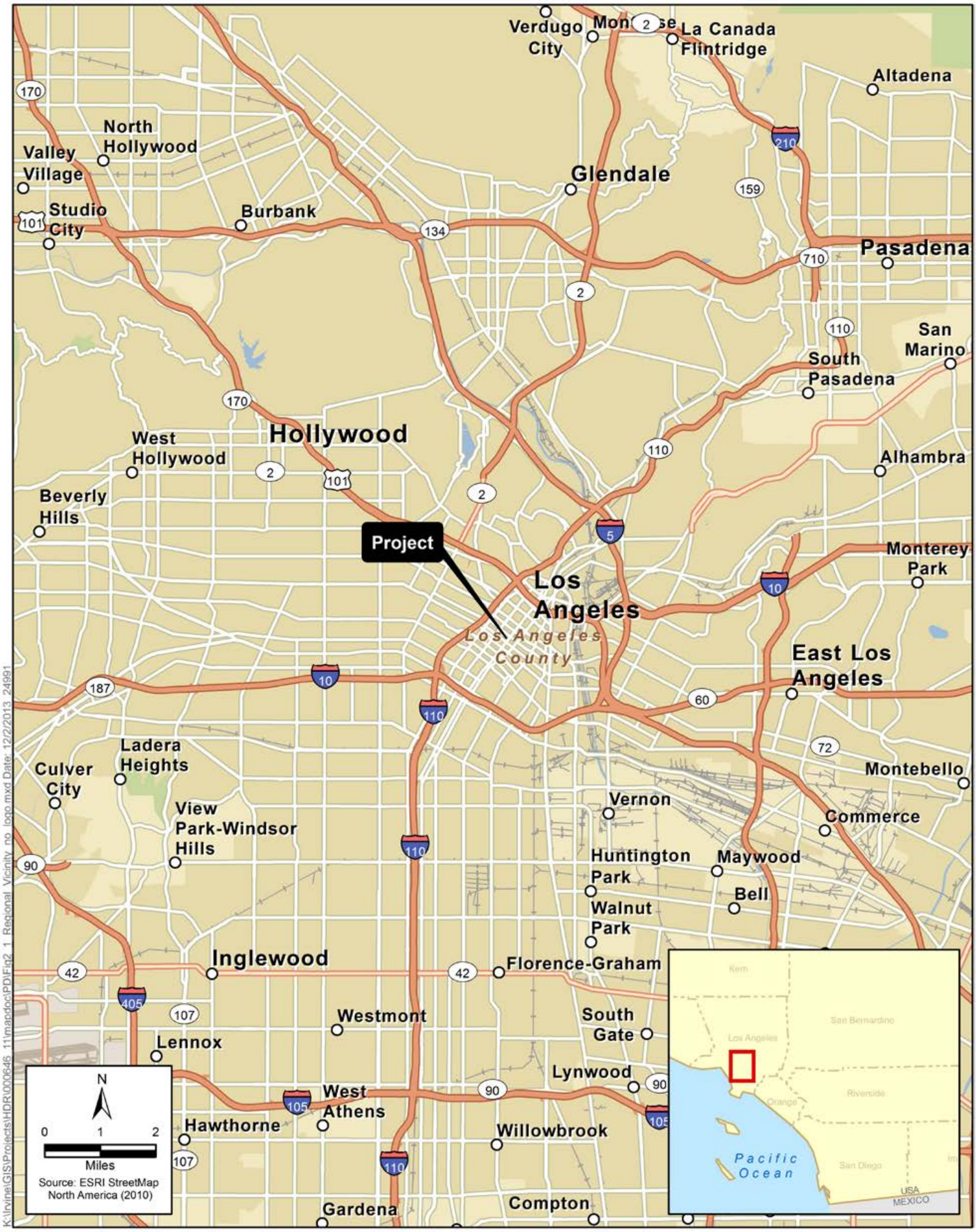
The proposed configuration of track and roadway lanes would permit a mixed flow of vehicles and a fleet of electrically powered streetcars. The proposed streetcar service would operate 7 days a week with an estimated three to six streetcars running at any given time. At an estimated operating speed of 6 miles per hour (mph), the run time for a round trip would be approximately 35 to 40 minutes. At morning and evening peak hours, an estimated six vehicles would be in operation, with headways of approximately 7 minutes at a given location. Power to the streetcar vehicles would be provided by approximately five traction power substations (TPSSs) and an overhead contact system (OCS). A maintenance and storage facility (MSF) site would also be constructed as part of the Project.

Five project alternatives are being studied as part of this EIR:

- Alternative 1: No Project Alternative
- Alternative 2: 7th Street With Grand Avenue Extension
- Alternative 3: 7th Street Without Grand Avenue Extension
- Alternative 4: 9th Street With Grand Avenue Extension
- Alternative 5: 9th Street Without Grand Avenue Extension

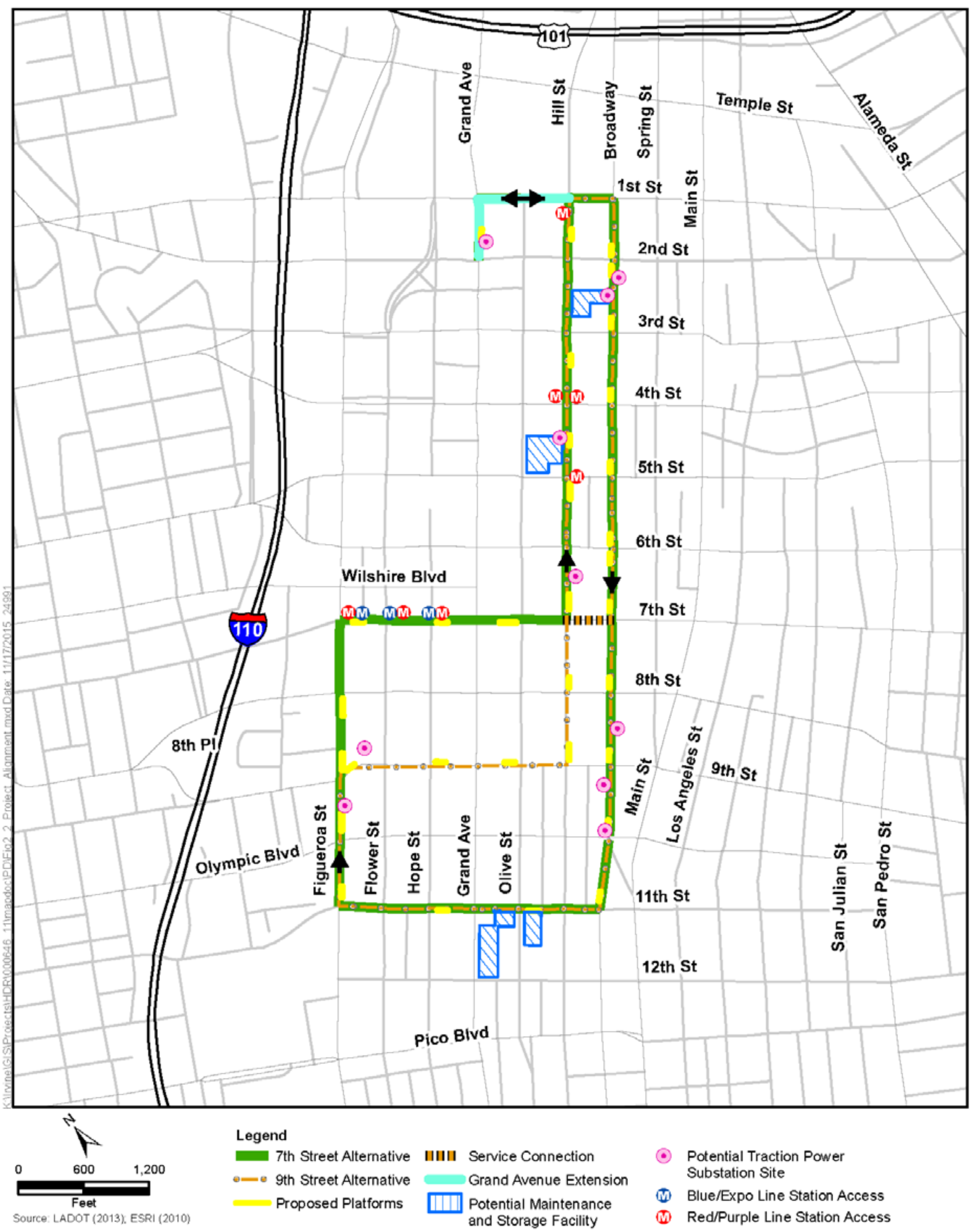
These alternatives are described in detail in Section 2.4, *Project Alternatives*, and Chapter 4, *Alternatives to the Project*. Figure 2-2 shows the Project's routing within downtown Los Angeles. The number and placement of passenger boarding platforms and traction power substations are subject to change, based upon further development of the project design.

Figure 2-1. Regional Location Map



This page was intentionally left blank.

Figure 2-2. Proposed Downtown Los Angeles Streetcar Route[2]



---

[2] Platform locations subject to change in final design.

This page was intentionally left blank.

2.2 Project History and Background

Looking South down Broadway at the Intersection of 5th Street in 1926.
Streetcars Proceed down the Center of Broadway.
Source: Los Angeles Public Library

At one time, a comprehensive historic streetcar network was operated in Los Angeles by five companies: Los Angeles Railway, Pacific Electric Railway, Pacific Electric Inter-Urban Railway Company, Los Angeles Pacific Railroad, and Los Angeles Redondo Railway Company. This historic streetcar network spanned more than 600 miles of track in the Los Angeles metropolitan area and, by the 1920s, was the largest trolley system in the world (Los Angeles County Metropolitan Transportation Authority 2012). Following World War II, development of single-family tract housing and expanding use of personal automobiles began to reduce the region's reliance on the streetcar system, resulting in declining ridership, and streetcar service on the large network was discontinued one route at a time. By1963, streetcar service was completely discontinued, with diesel buses replacing the last leg of the streetcar network. Since that time, a number of factors, such as rising fuel prices and increasing traffic congestion, have generated a renewed interest in restoring historic streetcar service that would provide enhanced mobility in downtown Los Angeles.

Restoration of downtown streetcar service is an idea that has been considered intermittently for over a decade, by CRA/LA, Metro, and the former Central City Association Red Car Advisory Committee, as well as advocacy groups such as LASI and members of Council District 14's "Bringing Back Broadway" initiative. In the early years of the downtown streetcar movement, the general concept was aimed at creating a tourist attraction by focusing on historically significant resources while providing transportation services. However, after considerable research and outreach, the scope of streetcar development has been broadened to include promoting revitalization, reactivating historic resources, and supporting general economic development in downtown Los Angeles.

In 2006, CRA/LA finalized the *Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area* (CRA/LA 2006), which analyzed various alignment concepts, determined the feasibility of restoring the streetcar system, and identified engineering considerations, ridership estimates and needs, potential costs of implementing the streetcar, and potential funding sources. As contracted by CRA/LA, Metro moved the development process forward and assisted CRA/LA with the *Restoration of Historic Streetcar Service in Downtown Los Angeles Alternatives Analysis* (Metro 2012), which was completed in January 2012. That document analyzed a multitude of potential alignments in its initial screening process, leading to the development of seven feasible alternatives. Those alternatives were then evaluated across a variety of factors, including capital and operating cost, design constraints, service area, connections to transit and other modes of transportation, environmental impacts, and economic development opportunities. A final screening analysis identified 7th Street, which was designated at that time by the CRA/LA Board of Commissioners and the Los Angeles City Council as the Locally Preferred Alternative (LPA), for further environmental analysis in this EIR. The 7th Street Alternative was selected because of favorable ridership estimates, a high combined average of daily boardings, and total boardings per mile; low capital, operating and maintenance costs; and local community support.

The LPA included an alternative alignment that would use 9th Street instead of 7th Street, between Figueroa Street and Hill Street. Los Angeles Department of Transportation (LADOT) has implemented vehicle lane reductions on 7th Street in order to provide space for bicycle lanes, as part of the *City of Los Angeles 2010 Bicycle Master Plan*. Recognizing this development, the 9th Street Alternative is therefore included to provide an alternative to the 7th Street route.

Further information regarding these and other alternatives that have been considered can be found in Chapter 4.

2.3 Project Objectives and Need

The primary objectives of the proposed Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. By connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and landmarks, and entertainment venues, and by providing connectivity to other transit services, the proposed Project would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.

2.3.1 Statement of Need

The Project's study area, as outlined in the Alternatives Analysis (AA) report (Metro 2012), is bounded by Cesar Chavez Avenue, Chinatown, and Union Station to the north; Washington Boulevard to the south; Los Angeles Street to the east; and the Harbor Freeway (Interstate 110) to the west. In evaluating the activity centers, districts, characteristics, demographics, and travel conditions within the study area, the following themes have emerged that reinforce the need for the Project:

- A topographically and geographically disconnected pedestrian network exists in the downtown area.
- There is a lack of an available centralized downtown transit route to complement the Downtown Area Short Hop [DASH] service.
- Increased demand for transit service is emerging from development and population, household, and employment growth in downtown that existing facilities cannot serve.

- Traffic patterns and parking demands both currently constrain intra-downtown mobility by automobile.
- Underutilized land and historic buildings could be brought to higher and better uses if additional means of access were available.

The restoration of historic streetcar service in downtown Los Angeles would provide a convenient mode of transit, with frequent service on a simple route configuration. The streetcar's easily understood route and ease of use would encourage ridership by residents, workers, and visitors within the downtown area. The Project would provide a direct and convenient means for local circulation, connecting to activity centers, parking, offices, and residences. With low floor-level or near-level boarding, the streetcar would improve transit accessibility for persons with mobility impairments, allowing them to board the streetcar without assistance or use of a bus kneeling feature or "flip-out" ramp.

The following sections discuss how the proposed Project would meet the specific needs identified above.

2.3.1.1 Topographically and Geographically Disconnected Pedestrian Network

The project study area extends approximately 3 miles, from the Los Angeles Convention Center at the southwestern end to Union Station and Chinatown at the northeastern end, with various commercial, residential, and entertainment areas in between. Within downtown Los Angeles, size, topography, and the street grid make it difficult to make convenient walking connections between many of the activity centers and districts, which inhibits pedestrian circulation. For example, Bunker Hill, which is the commercial core of downtown Los Angeles, rises 90 to 120 feet above surrounding areas, creating steep grades (15 to 30 percent) that are difficult for pedestrians to navigate. The street grid similarly impedes pedestrian circulation. Blocks in downtown Los Angeles (650 by 400 feet, on average) are longer than most central business districts, compared with examples such as downtown San Francisco (300 by 300 feet) or downtown Portland, Oregon (225 by 225 feet). Interruptions in the grid network are common, which also inhibit pedestrian trips. The combined effect of these topographic and geographic factors means that many internal downtown trips exceed comfortable walking distances (typically 0.25 to 0.5 mile), inhibiting pedestrian circulation between districts such as from South Park to Grand Central Market (1.2 miles, approximately 25 minutes walking time, based on an estimated pace of approximately 3 miles per hour), the Jewelry District to Bunker Hill (0.6 mile, approximately 16 minutes walking time, including a 14 percent grade), or from the Pershing Square subway station to the Orpheum Theater (0.6 mile, approximately 13 minutes walking time).

2.3.1.2 Lack of Centralized Downtown Transit Route

There is an abundance of transit services in downtown Los Angeles, including heavy and light rail and bus service, most of which generally serve long, commute-based travel markets. Metro and other regional operators provide transit service in downtown Los Angeles, but this service relies on a grid-oriented network with dozens of regional lines that make local circulation difficult and complex. Metro operates about 50 bus routes in the study area. There are nine other transit operators within the study area. However, currently no single line ties together the major activity centers in downtown Los Angeles. With the exception of Metro, LADOT, Montebello Bus Lines, and Gardena Municipal Bus

Lines, these transit operators run mostly peak commute hour, peak-direction commuter bus service in and out of the downtown area. The Regional Connector project (currently under construction) would provide accessibility and mobility to the Bunker Hill area, which would not be provided to other areas within downtown.

LADOT operates a local downtown-serving shuttle bus service (DASH) in the study area along five routes that serve defined sets of destinations. It should be noted that LADOT is restructuring its downtown routes to better serve a changing downtown. However, DASH currently does not tie together the activity centers in downtown that would be served by the proposed streetcar; a "one seat ride" among these locations is not possible using the DASH service. An enhanced local transit network is needed that would complement DASH service.

In addition, the proposed Project would supplement and improve the efficiency of the rail and bus service by providing transit connections in downtown once passengers disembark from regional transit services, and by locating stops at shorter intervals at strategic locations near activity and transit nodes. The proposed Project would augment existing bus and rail service by local circulator coverage that connects communities in the downtown area. The Project would complement the efficiency and effectiveness of existing transit services, including DASH, by adding a travel option that connects employment and commercial districts, tourist destinations, and residences along the alignment. The combination of proposed streetcar service and existing transit service, particularly DASH, would provide frequency and reliability of service that would make midday travel by transit more efficient and attractive to users.

2.3.1.3 Increased Transit Demand from Development and Population, Household, and Employment Growth

Significant levels of growth have been occurring and are projected to continue in downtown Los Angeles during the next 20 years. The projected growth will generate greater travel demand for both local transit services and roadway capacity that will tax the current supply. Over the past decade, significant new commercial and residential development and associated population growth have occurred in downtown Los Angeles, which has increased the strain on the transportation system. Between 2000 and 2012, a total of 9,391 housing units were constructed in the study area (City of Los Angeles 2013b). Since 1999, 22,703 residential units have been developed in downtown Los Angeles. In addition, 10,369 units are currently under construction. According to estimates, the current population of downtown Los Angeles is 59,187, which would rise to 76,918 once the projects currently under construction are completed (Downtown Center Business Improvement District 2015). Nonresidential projects, such as LA Live, have been constructed and numerous retail and commercial developments are in the planning stages, suggesting considerable future growth and development (Metro 2012).

According to estimates from the Southern California Association of Governments (SCAG), by 2035 the population of the study area is projected to grow by more than 10 percent, and employment is projected to grow by more than 6 percent. Furthermore, transit-dependent populations such as low-income individuals and the elderly are expected to increase by 18 and 34 percent, respectively, by 2035 (SCAG 2012a). This growth in development, population, and employment will increase the trips to/from and within downtown Los Angeles and place a strain on the local transportation system. The proposed Project would provide additional transit service to assist in accommodating the needs of projected population and employment growth in the study area.

2.3.1.4 Traffic Patterns and Parking Demand

The combination of short trip lengths to destinations within downtown Los Angeles and normal commuter parking requirements creates a high demand for parking, and this, coupled with the fact that on-street parking is difficult to find, compounds mobility issues in parts of the study area. Because further projected growth will be concentrated in the downtown area, the proposed Project, in addition to other transit services, is needed for shorter, local trips that connect residential areas, employment centers, and retail services. Users would be able to “park once” and circulate throughout downtown by using transit instead of making multiple short trips by automobile and parking in multiple on-street parking spaces. By augmenting the current local transit services in the downtown core, the proposed Project would provide yet another opportunity for transit use rather than the automobile and it would also facilitate increased pedestrian access.

2.3.1.5 Interconnectivity to Underutilized Land and Historic Buildings

Despite considerable development and investment over the past decade, some commercial spaces and historic buildings remain that could be brought to higher and better use in the study area, particularly along Broadway and in South Park. These areas, because of their separation distance, are geographically isolated from the primary employment centers of Bunker Hill and the Financial District and have reduced local transit circulation opportunities and fewer connections to Metro Rail. Approximately one million square feet of potential commercial and residential space is currently unused in historic buildings, primarily on and around Broadway (*Los Angeles Times* 2015). It would be beneficial to strengthen the connection between Broadway, South Park, and the major activity centers in downtown.

2.3.1.6 Restoration of Streetcar Service

Restoring the streetcar service would provide a strong connection between Los Angeles’ past, which was built around the streetcar, and its goals for a more transit-oriented future, through the following:

- Restore streetcar service which was historically important to the development of the Los Angeles County region;
- Establish a visible focal point for local transit service which is easily identifiable and distinctive; and
- Convey a sense of permanency through the implementation of fixed-guideway transit.

2.3.2 Project Objectives

The proposed Project is intended to fulfill the following objectives:

- **Land Use and Economic Development:** Support the growth and revitalization of downtown Los Angeles, including its historic districts, through the following:
    - Revitalize geographically isolated, underutilized areas.
    - Promote smart, sustainable growth that helps to reduce sprawl.
    - Implement transit policies that support the City's General Plan.
    - Integrate transit and land use within the study area.
    - Encourage historic restoration and transit-oriented development.
    - Strengthen downtown's economic competitiveness.
    - Foster a more livable downtown.
    - Create a distinctive tourist draw that would expand the economic base of the City and maximize tax revenue.
    - Improve transit access to existing and planned developments.
    - Improve interconnectivity between residential areas, employment and activity centers, and retail services.
    - Help to create a vibrant outdoor ambience that would attract residents and visitors to the streets of downtown Los Angeles.
- **Mobility**: Enhance mobility and transit circulation in downtown Los Angeles through the following:
    - Connect major districts, destinations, and activity centers.
    - Improve transit coverage and circulation.
    - Provide easy to use, localized, high-frequency service.
    - Serve transit-dependent populations.
    - Improve transit accessibility and operational efficiency.
- **Congestion Relief**: Create pedestrian-oriented amenities interconnected with sidewalks and public space that will enhance downtown Los Angeles' distinct identity through the following:
    - Reduce dependency on automobiles by implementing transit services and improving walkability.
    - Increase mobility and accessibility for visitors and people who live and work in downtown.
- **Environmental Benefits**: Protect and improve aspects of the downtown core through the following:
    - Preserve the area's historic significance and revitalize the Historic Core.
    - Reduce automobile trips within downtown.

2.4 Project Alternatives

Five project alternatives are being considered, as described below. These include four build alternatives for the proposed Project – 7th or 9th Street alignments, either with or without a Grand Avenue Extension. In addition, a No Project Alternative is being evaluated. Alignment details by street segment are described in Section 2.5, *Street Segments*.

2.4.1 Alternative 1 – No Project Alternative

The No Project Alternative is required by Section 15126.6(e) of the State CEQA Guidelines. It also represents conditions in the project study area that would remain if the proposed Project would not occur. The No Project Alternative would not achieve any of the objectives of the proposed Project. An analysis of the potential impacts of the No Project Alternative, as defined by CEQA, is presented in Chapter 4, *Alternatives to the Project*.

2.4.2 Alternative 2 – 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

2.4.3 Alternative 3 – 7th Street without Grand Avenue Extension

Alternative 3 would construct and implement streetcar service along a one-way loop that would begin at 1st and Hill Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street, and north along Hill Street.

2.4.4 Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

2.4.5 Alternative 5 – 9th Street without Grand Avenue Extension

Alternative 5 would follow the same alignment as the 7th Street without Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

2.5 Street Segments

The following sections describe the streetcar alignment along each street segment.

2.5.1 Grand Avenue

The Grand Avenue Extension, if selected, would begin at a station on Grand Avenue north of 2nd Street, adjacent to the Walt Disney Concert Hall. The streetcar would operate on a single-track alignment in an exclusive streetcar-only lane that would occupy approximately 300 feet of the easternmost southbound lane of Grand Avenue. A median platform for passenger on- and off-loading is proposed just north of 2nd Street to the east of the tracks. A new mid-block pedestrian crosswalk and traffic signal would allow pedestrian access from both the west and east sides of Grand Avenue. Grand Avenue would maintain the same number of traffic lanes but would have shortened turn lanes to accommodate the track and median platform.

From the Grand Avenue stop, the streetcar would use train-to-wayside-communication (TWC) to call for a streetcar-only traffic signal phase that would allow it to proceed north and turn east onto 1st Street safely and without conflicting with traffic. A TWC system selects a route by activating powered track switches and allows the streetcar operator to automatically communicate with the traffic signal controller for a streetcar-only traffic signal phase. Southbound traffic on Grand Avenue could cross the 1st Street intersection simultaneously with the streetcar turn. From 1st Street, the streetcar would turn south and proceed into the dedicated streetcar stop with use of normal traffic signals.

The Grand Avenue segment would serve the Bunker Hill District, located generally between 1st Street on the north, Hill Street on the east, 4th Street on the south, and Figueroa Street on the west. Major downtown destinations within Bunker Hill include the Walt Disney Concert Hall, the Museum of Contemporary Art, the Broad Art Museum, and several high-rise office towers, senior and market-rate housing developments, hotels, and commercial/retail centers.

2.5.2 1st Street

1st Street is a modified Boulevard II oriented in the east/west direction. The streetcar would operate along two tracks on 1st Street, if the Grand Avenue extension is selected. For westbound travel, the track would operate in the southernmost westbound through lane of 1st Street. The westbound streetcar would cross Olive Street then curve into the southernmost left-turn lane of the two left-turn lanes. Bicycle signs and pavement markings would be installed where tracks would cross the eastbound bicycle lane at Grand Avenue and at Broadway to ensure that bicycles would cross safely at an angle. No platforms or streetcar stops are proposed along 1st Street; therefore, there would be no bicycle lane conflicts.

The eastbound track would be placed in the southernmost through lane north of the existing bicycle lane, which was recently installed as part of the *City of Los Angeles 2010 Bicycle Plan* (City of Los Angeles 2011a). The eastbound track would cross Olive and Hill Streets before turning south onto Broadway.

In the absence of the Grand Avenue Extension, a single track in the eastbound direction would operate between Hill Street and Broadway. No streetcar track or operations would occur west of Hill Street.

2.5.3 Broadway


Broadway at West 7th Street, Looking South (ICF 2013)

Broadway is a modified Avenue II oriented in the north/ south direction. Under the *Broadway Streetscape Master Plan,* Broadway would be reconfigured to provide one southbound through lane and two northbound through lanes. The streetcar would operate in mixed flow with vehicular traffic on a track in this newly configured southbound through lane. Platforms for passenger boarding would be located on the west side of the proposed streetcar track on the curb proposed as part of the *Broadway Streetscape Master Plan*. The streetcar would travel southward within the shared southbound through lane at platforms that could be located at or near intersection corners or mid-block, until reaching 11th Street. Curb extensions proposed as part of the *Broadway Streetscape Master Plan* would connect to each platform, and buses would share stops with the streetcar as feasible. Southbound right turns would be permitted from turn pockets in the southbound travel lane at 3rd, 5th, 8th, and 11th Streets. Platforms are currently proposed to be located at the following street blocks: 2nd Street, 3rd Street, 4th Street, 5th Street, 6th Street, 7th Street, 8th Street, 9th Street, Olympic Blvd, and 11th Street; the final number and placement of platforms will be determined as further design of the Project proceeds. Sidewalks along the west side of Broadway would extend approximately 8 feet, and there would be estimated 8-foot parking lanes between bulb-outs on both sides of Broadway.

2.5.4 11th Street

11th Street is a modified collector street oriented in the east/west direction. Between Figueroa Street and Flower Street, 11th Street has a single eastbound lane and two westbound through lanes. On-street parking is prohibited along both sides of the street. East of Flower Street, this facility becomes a one-way westbound street consisting of two through lanes. On-street parking is allowed along both sides with some restrictions, east of Hope Street. The proposed My Figueroa Streetscape Project (see below) would also reconfigure 11th Street. Changes would include a bicycle lane along the north side of 11th Street, a reduction to one traffic lane westbound, and alterations to the existing curbs along both sides of the street. The project design is intended to be consistent with these improvements to the extent practicable. From Broadway, the streetcar would make a right turn onto westbound 11th Street where the newly configured through lane (under the My Figueroa Streetscape Project improvements) would serve as a shared lane for streetcar and passenger vehicle traffic. Platforms are currently proposed at or near the corners of 11th Street/Olive


Figueroa Street, Looking North to West 7th Street (ICF 2013)

Street and 11th Street/Hope Street; final locations are subject to further design of the Project. These platforms would be constructed within the parking lane by tying into the proposed curb.

2.5.5 Figueroa Street

Figueroa Street is a modified Boulevard II oriented in the north/south direction. North of Olympic Boulevard, Figueroa Street is a one-way northbound street. The My Figueroa Streetscape Project would include a combination of northbound and southbound one-way bike paths (travelling in the direction of adjacent traffic) within the existing roadway and next to the curb, separated from vehicular traffic lanes by physical barriers, and Class II bicycle lanes with painted buffers along a 3-mile stretch of Figueroa Street through downtown and South Los Angeles from 7th Street to Martin Luther King Jr. Boulevard. The My Figueroa Streetscape Project bicycle and streetscape facilities would be compatible with the proposed streetcar where possible. The streetcar would operate within the east side, northbound Figueroa Street travel lane, which would be shared with buses and extend north toward 7th Street or 9th Street. Platforms along Figueroa Street are currently proposed to be located along the east side of Figueroa Street but west of the proposed bicycle lane, at the intersections of Figueroa Street with 11th Street, Olympic Boulevard, 9th, and 8th Streets; final locations of platforms are subject to further development of the project design and the selected project alternative. Under the 9th and 7th Street Alternatives, the streetcar would turn right onto eastbound 9th or 7th Street, respectively.

2.5.6 9th Street

9th Street is a modified Avenue II and III oriented in the east/west direction. It is a one-way eastbound street. It consists of four eastbound travel lanes with on-street parking allowed along both sides with some restrictions. Along the 9th Street segment, the streetcar is currently planned to make stops at platforms located at or near the corners of the intersections of 9th Street with Figueroa, Hope, and Olive Streets; final locations will be determined by further project design. Under the 9th Street Alternatives, the service connection between Hill Street and Broadway would remain on 7th Street.

2.5.7 7th Street

7th Street is a modified Avenue II oriented in the east/west direction. Under the *City of Los Angeles 2010 Bicycle Plan*, bicycle lane improvements were implemented along 7th Street, reconfiguring the roadway to include one through traffic lane and one bicycle lane in each direction. A second westbound traffic lane starts just west of Grand Avenue. Under the 7th Street Alternatives, the proposed streetcar would operate within the eastbound lane of 7th Street and travel east to Hill Street. The streetcar is currently planned to make stops at platforms located at or near the corners of the intersections of 7th Street with Figueroa, Hope, and Olive Streets; final locations will be determined by further project design. As the bicycle lanes are proposed between the through and on-street parking lanes, streetcar platforms would replace some on-street parking spaces and extend out to the tracks. The bicycle lane is planned to be routed between the streetcar platform and the sidewalk because the resulting distance between the nearest rail and the platform would be inadequate for a bicycle lane. A currently planned railing along the back of the platform with designated crossing areas would control bicycle and pedestrian crossings. The final configuration of the street layout would be determined by further design of the Project and implementation of the City's *7th Street Improvement Plan*.

7th Street would also provide a double-track non-revenue service connection, one eastbound and one westbound, between Hill Street and Broadway. This service connection is not planned to be used for regularly scheduled service but would rather be available if a disruption were to occur on the north or south portions of the project route. This connection could also be used to enhance special-event service.

2.5.8 Hill Street

Hill Street at West 6th Street, Looking North (ICF 2013)

Hill Street is a modified Avenue II oriented in the north/south direction. The streetcar would turn left from either 9th or 7th Streets into the easterly northbound lane of Hill Street and travel north to 1st Street. The roadway would be reconfigured and restriped to preserve as much on-street parking and loading areas as practicable while also maintaining two northbound through traffic lanes.

Platforms along Hill Street would be located within the parking lane or on the existing sidewalk. Platform locations would be chosen to avoid conflicts with existing driveways; therefore, they could be located mid-block or on the far side of intersections, as required. At the north end of the Hill Street segment, the streetcar would either make a turn to the east on 1st Street or transition into the left-turn lane to westbound 1st Street on its way back to the Grand Avenue Extension platform. If the Grand Avenue Extension is selected, a service connection would also be provided to turn right from Hill Street to eastbound 1st Street, which would provide flexibility to bypass Bunker Hill, if necessary. For the 7th Street Alternatives, platforms are currently planned at 7th, 5th, mid-block between 4th and 3rd Streets, and at 2nd Street. If one of the 9th Street Alternatives is selected, additional platforms would be provided at 9th and 8th Streets. An optional platform is being considered mid-block between 4th and 5th Streets. The final number and placement of platforms will be determined by further project design.

2.6 Elements of Streetcar Alternatives

This section describes the elements of the proposed streetcar system that are common to the build alternatives of the Project. A summary of the vehicle type, platform layout, support facilities such as the OCS, the TPSS, MSF, signaling, and proposed intersection improvements are described below.

2.6.1 Vehicles

Typical Streetcar (Portland, Oregon) (HDR 2013)

The Project's operating plan calls for 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate at that frequency. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 65 to 85 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. The streetcars would be designed with low floors to be compliant with the *Americans with Disabilities Act* (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 mph on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks (see Section 2.6.3.1).

2.6.2 Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by Metro, other regional operators, and LADOT DASH buses. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to approximately 70 feet long. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to

Simulated View along Broadway, between 5th and 6th Streets (NC3D 2013) match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

The platforms would resemble typical bus stops, would have distinctive signage, and may include amenities such as shelters, benches, Light Emitting Diode (LED) signs displaying minutes to expected streetcar arrival, and kiosks containing information on the route, schedule, and fares. The design and location of the platforms would be developed so as to be consistent with related projects that may construct streetscape elements such as curb extensions, bus stops, or other street amenities along the project alignment. Platform locations would be chosen to avoid conflicts with existing driveways; therefore, they could be located mid-block or on the far side of intersections, as required.

2.6.3 Support Facilities

2.6.3.1 Overhead Contact System

Sample Cantilever OCS Unit (HDR 2015)

Sample Span OCS Unit (HDR 2015)

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site-specific and be made based upon engineering design and aesthetic considerations. Both of these configurations could use decorative poles chosen to be consistent with the streetscape along the project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/ Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or /7th Streets, 9th/ or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

2.6.3.2 Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide Direct Current (DC) power for the streetcars; final number and placement will be determined by further project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically-sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial Alternating Current (AC) power to 750-volt DC power for the streetcars.

Dallas Sample Streetcar
Traction Power Substation Units (HDR 2013)

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible.

Portland, Oregon

Seattle, Washington

Tucson, Arizona

Recommended TPSS sites have been identified based upon the following criteria.

- Available publically owned property.
- Proximity to equal (0.95 mile) spacing increments.
- Maintenance access—easy access from street, with identified entrance/exit access points.
- Lot size.
- Proximity to mainline.
- Maintaining site driveways and access points.

Potential TPSS sites are shown in Figure 2-2 at currently estimated locations.

2.6.3.3 Maintenance and Storage Facility

The proposed Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

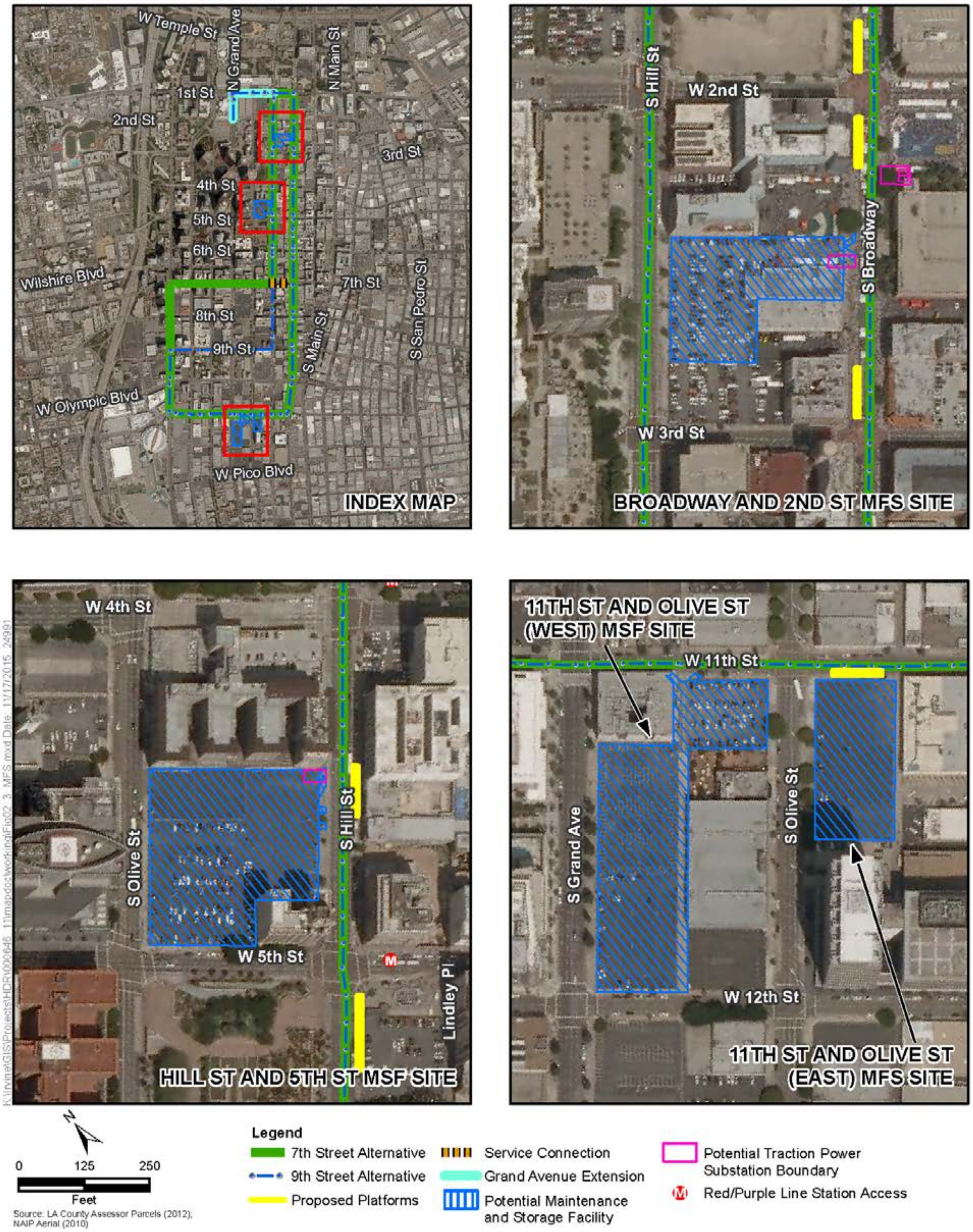
The MSF is currently planned at one of four potential sites: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets (see Table 2-1 and Figure 2-3). Should all of the currently evaluated sites become unavailable, another site will be identified and evaluated. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the proposed Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's *Green Building Code* and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for an MSF would probably not require the entire parcel; however, until such time as a site design and configuration has been completed, the project evaluation assumes full acquisition would be needed. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and secure storage of streetcar vehicles. The photograph below shows an example of an MSF site.

Seattle South Lake Union Streetcar Maintenance and Storage Facility (HDR 2013)

Table 2-1. Potential Maintenance and Storage Facility Properties Currently Under Consideration

Potential MSF Locations	Address	Assessor's Identification Number	Parcel Square Footage	Existing Use
Broadway and 2nd Street Total area: Approximately 57,719 square feet	233 S Broadway	5149-009-018	18,960	Unoccupied single-story commercial building (former Goodwill)
	229 S Broadway	5149-009-014	18,960	Surface parking lot
	236 S Hill St	5149-009-011	14,168	Surface parking lot
	240 S Hill St	5149-009-025	5,631	Surface parking lot
	237 S Broadway	5149-009-004	9,990	Wedding chapel
Hill Street and 5th Street Total area: 98,690 square feet	431 S Hill St	5149-027-013	32,460	Surface parking lot
	440 S Olive St	5149-028-003	9,900	Surface parking lot
	427 W 5th St	5149-028-012	29,040	Surface parking lot
	441 S Hill St	5149-028-013	11,130	Surface parking lot
	415 W 5th St	5149-028-011	4,760	Surface parking lot
	447 S Hill St	5149-028-009	5,040	Surface parking lot
	437 S Hill St	5149-028-004	6,360	Surface parking lot
11th Street and Olive Street (East) Total area: 51,197 square feet	1124 S Olive St	5139-019-011	10,138	Surface parking lot
	218 W 11th St	5139-019-015	4,759	Surface parking lot
	1100 S Olive St	5139-019-040	31,500	Surface parking lot
	Alley		4,800	Alley
11th Street and Olive Street (West) Total area: 103,300 square feet	1120 S Grand Ave	5139-020-024	64,000	Surface parking lot
	1114 S Grand Ave	5139-020-016	9,300	Surface parking lot
	1105 S Olive St	5139-020-025	18,000	Surface parking lot
	Alley		12,300	Alley
Source: Metro, 2015, ICF 2015				

Figure 2-3. Potential Maintenance and Storage Facility Locations Currently Under Consideration



This page was intentionally left blank.

2.6.3.4 Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. Line-of-sight operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary when the streetcar requires a special traffic signal phase to maneuver so as to avoid conflicting with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have transit signals. Operation of transit signals would be separated from the normal traffic signals in order to not be confusing to the general public.

Where necessary, TWC would be used to limit conflicting traffic at turning locations and provide streetcars a dedicated signal phase to move safely across an intersection.

2.6.3.5 Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue at 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles will have operator cabs on both ends of the cars so that they are able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential layover sites. At these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

2.7 Project Design Elements

2.7.1 Proposed Intersection Improvements

In order to properly integrate streetcar service into the flow of traffic within downtown, maintain adequate operating conditions for all modes, and provide conditions to achieve optimum streetcar travel times, several improvements to the downtown street system are proposed. The following traffic signal improvements (see Section 3.10 for further details) are currently proposed for Alternatives 2, 3, 4, and 5:

- Protected northbound right-turn phase at the intersection of Grand Avenue and 1st Street (Grand Avenue Extension).
- Mid-block pedestrian crosswalk traffic signal on Hill Street between 1st Street and 2nd Street to allow streetcar to move from right lane to left-turn lane (Grand Avenue Extension).
- Protected northbound left-turn phase at the intersection of Hill Street and 1st Street (Grand Avenue Extension).
- Protected eastbound left-turn phase at the intersection of Hill Street and 7th Street (all alternatives).
- It is assumed that existing right-turn lanes from southbound Broadway to 3rd, 5th, 8th, and 11th Streets are to be permanently maintained.
- It is assumed that a "Pedestrian Scramble" phase would be added to 7th Street and Figueroa Street as part of a 7th Street streetscape improvement project. It is also assumed that a right-turn lane would be provided on eastbound 7th Street from the Streetcar Platform to Flower Street.
- Mid-block signal with pedestrian crosswalk added to Grand Avenue between 1st and 2nd Streets for access to median platform (Grand Avenue Extension).

Green signal time allocated to streetcar movement would be redistributed, within the existing signal cycle length, at the following currently anticipated locations; the amount of time would vary according to operating conditions at each intersection:

- Grand Avenue/1st Street
- 1st Street/Hill Street
- Broadway/2nd Street
- Broadway/8th Street
- Broadway/Olympic Boulevard
- 11th Street/Hill Street
- 11th Street/Hope Street
- Figueroa Street/9th Street
- Figueroa Street/8th Street
- Hill Street/5th Street
- Hill Street/6th Street

Protected right-turn arrows are currently expected to be provided to clear right-turn queues before or after the crossing of pedestrians, at the following locations:

- Broadway/3rd Street
- Broadway/8th Street
- Figueroa Street/7th Street

Right-turn only pocket lanes are currently proposed to be added or maintained at the following locations:

- Broadway/3rd Street – a right-turn only lane from southbound Broadway at 3rd Street.
- Broadway/5th Street – a right-turn only lane from southbound Broadway at 5th Street.
- Broadway/8th Street – a right-turn only lane from southbound Broadway at 8th Street.
- Broadway/11th Street – a right-turn only lane from southbound Broadway at 11th Street.
- Hill Street/6th Street – a right-turn only lane from northbound Hill Street at 6th Street.

The eastbound right-turn storage lane is currently expected to be extended on eastbound 7th Street to southbound Flower Street to minimize queue spillover. Figure 2-4 depicts the proposed intersection improvements within the downtown Los Angeles Streetcar route. It should be noted that further development of the Project's design and operating characteristics may result in a change to one or more of the above currently estimated improvements.

2.7.2 Proposed Lane Reconfiguration

In order to accommodate the streetcar, Hill Street would need to be reconfigured; however, the proposed changes would not reduce the existing number of travel lanes along Hill Street. On-street parking and/or center turn lanes along certain segments would be removed. Reconfiguration would include bump outs at some street corners to accommodate station platforms, which would create and allow for full-time on-street parking/loading spaces along the east side of Hill Street.

2.7.3 Streetcar Safety Elements

The Project would be designed to maximize pedestrian safety and accessibility through the implementation of measures that would minimize or avoid vehicular/pedestrian and vehicular/bicycle conflicts. Design elements of the streetcar system may include, but would not be limited to, the following: streetcars equipped with lighting and audible warning devices, train to wayside communication (TWC), signage, striping, and wayfinding.

Operators would also develop transit safety programs, with the goal of raising streetcar safety awareness in the community.

2.7.4 Bus Service Coordination and Traffic Rerouting Notifications

The City would coordinate with bus operators, including, but not limited to, Metro, DASH, Montebello Bus Lines, and Gardena Municipal Bus Lines, prior to implementation of designs that could result in necessary rerouting of buses.

Before any major rerouting changes are made as a result of the Project, fliers would be provided on buses at least 2 weeks in advance notifying riders of route modifications. In addition, hoods would be placed over bus-stop signs, also notifying riders of what modifications have been made to the bus route.

2.8 Construction Activities

2.8.1 Introduction

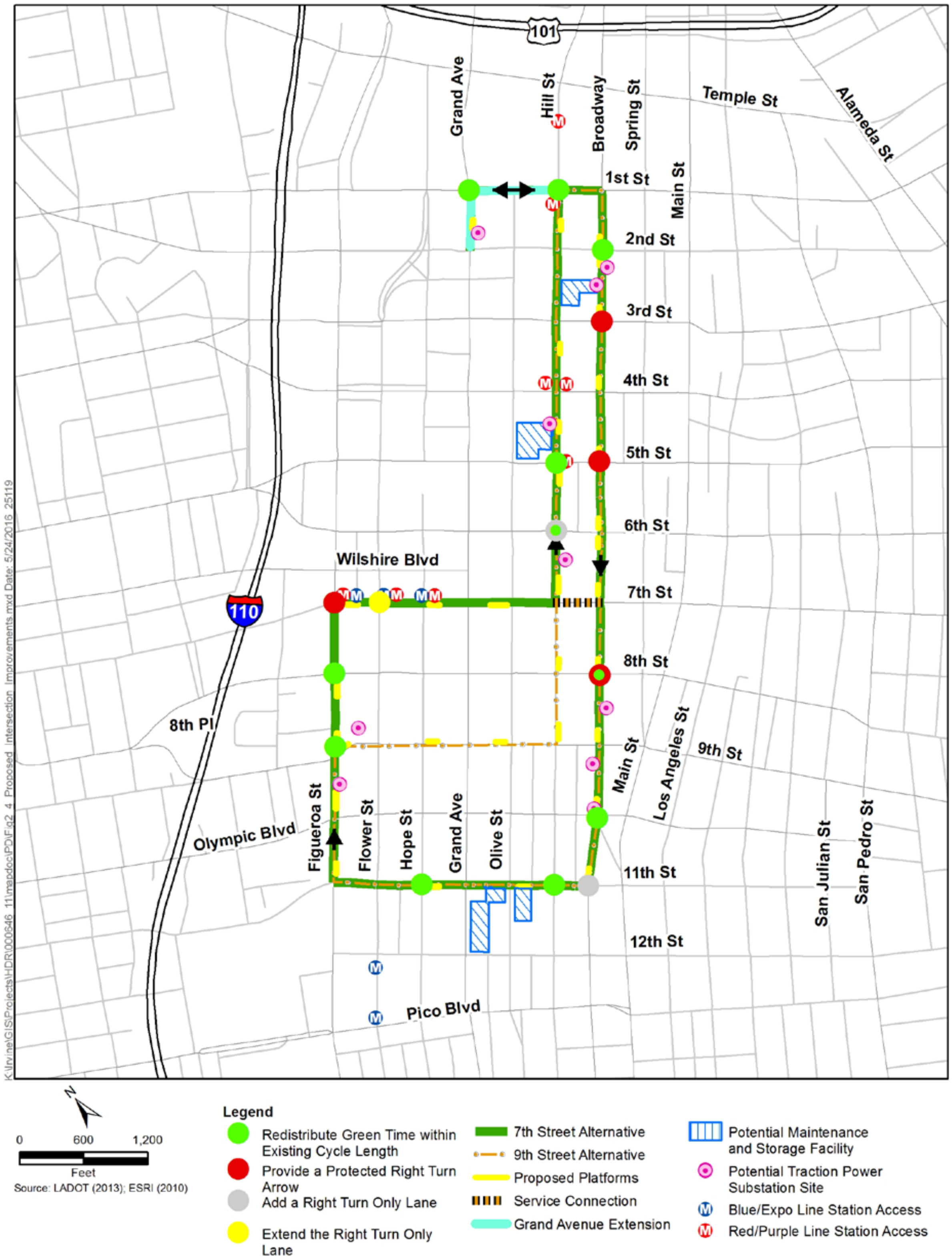
Construction activities for the Project would be managed from a contractor's office that would be maintained throughout the construction process. The contractor's office may use portable trailers or vacant office space in an existing building. Parking for approximately 20 to 30 vehicles would be needed for construction management personnel and visiting agency or owner representatives and visitors. The location of the contractor's office will be chosen prior to the start of construction.

Construction activities associated with the Project would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include pavement removal, utility relocation, excavation, construction of track drains, installation of concrete track slab and rails, construction of station platforms, installation of special track work units, reconstruction of ramps and sidewalks, paving, and striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations. The remainder of this section offers a typical description of how the construction process would proceed. It should be noted that the actual construction process and schedule will be determined by the contractor at the time of construction; therefore, the information presented below should be regarded as illustrative of similar typical construction processes.

Construction equipment that may be required for the Project would typically include backhoes, small cranes, dump trucks, concrete trucks, paving equipment, rail transporters, bulldozers, graders, cranes, compactors, rollers, drill rigs, paving machines, rail welding equipment, concrete mixers, flatbed trucks, dump trucks to haul dirt, rail installation vehicles, and various hand and power tools. Additional information regarding the construction equipment assumptions used in this EIR analysis is provided in Section 3.2, *Air Quality and Greenhouse Gas Emissions*.

It is estimated that the maximum number of construction workers expected at any one time could be approximately 70 to 75, including utility workers; demolition workers; track workers; paving, sidewalk, and curb workers; construction management; inspectors; and MSF workers.

Figure 2-4. Proposed Intersection Improvements



This page was intentionally left blank.

Laydown and storage area(s) for construction would be established near the project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have been currently identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th Street and 9th Street. However, these should be regarded as example sites, and other locations within the study area may become available and be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the project alignment.

Material removed to make room for the Project and brought in to be installed as part of the Project will use haul routes designated by the LADOT. Potential routes from the north end of the Project could be north along Broadway to enter U.S. 101 or east along 1st Street and then north along Los Angeles Street to enter U.S. 101. From the south end of the Project, a potential route could be west along 11th Street and then south along Los Angeles Street to enter Interstate 10. It should be noted that these routes are illustrative examples; designated routes will be determined by LADOT in consultation with the project contractor.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with *Los Angeles Municipal Code* (LAMC) 41.40(a). To expedite construction, certain construction activities may occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. More information on the Project's Traffic Mitigation Plan can be found in Section 3.10.

Furthermore, construction activities will follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; *California Manual on Uniform Traffic Control Devices;* and all City bureaus' design manuals, special provisions, and standard plans, including the latest *Standard Specification for Public Works Construction* (SSPWC or Green Book); the City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE) Brown Book; the *Work Area Traffic Control Handbook*; and any FTA requirements.

2.8.2 Utility Relocation

The approach required to handle utilities during construction would depend on the type, length, number, and complexity of the utility to be constructed, protected, or relocated. Utilities in potential conflict with streetcar construction would include, but are not limited to, storm drains, sanitary sewers, water pipelines, power lines, gas pipelines, electrical duct banks, lighting cables, fiber optic lines, telephone, cable lines, and underground conduits for traffic signals and roadway lighting. To the extent possible, the streetcar trackway and facilities would be located to avoid or minimize conflicts with existing utilities.

In addition to relocation of existing utilities, new utilities would be installed as part of the Project, including electrical duct banks, traffic signal conduits, and electrical service lines. Utility relocation is typically the first work item to be performed on a project. Once utility relocation has been completed within a segment, track work and civil construction will commence, and the utility relocation work crews would move on to the next segment. This method of sequencing typically would allow crews to keep utility relocation work proceeding ahead of the track work, and would keep construction activity confined to two segments at a given time.

2.8.3 Track Construction

All tracks and platforms would be located within the public right-of-way. The majority of the tracks would be located within existing traffic lanes, providing a mixed-flow traffic operation. A short segment of Grand Avenue (under the Grand Avenue Extension) would operate in an exclusive trackway south of 1st Street in order for the operator to stop the vehicle and switch directions safely.

The construction of a trackway within an existing City street would involve the use of embedded track (rails encased in a concrete track slab). Temporary street closures, affecting traffic lanes, driveway access, and bicycle lanes, will be needed. Widely publicized advance notice will be provided to property owners, business owners, tenants, and the general public.

Track work construction would include demolition of the roadway sections being displaced by the track slab, preparation of the track bed, placement of reinforcing-steel (if used), and placement of rails in their exact alignment. Once the rail is positioned using adjustable gauge rods and wrapped with rail boot to minimize stray current leakage, concrete would be poured around the rail and rebar to form the concrete track slab.

It may be possible that precast concrete track panel sections would be used as a method to increase the rate of trackway production. These may be proposed across intersections and other access points that would benefit from a reduced duration of temporary closure.

Construction of station platform foundations, restoration of pavement, and reconstruction of any sidewalks and ramps would begin simultaneously or immediately following the track slab within each segment. Once the track is placed, the pavement is restored, and sidewalks and ramps are reconstructed, the closed roadway lanes could typically reopen to traffic.

2.8.4 Maintenance and Storage Facility

The vehicle MSF would typically be constructed early to midway during track construction to provide the ability to test and store the streetcar vehicles prior to operation. Constructing the MSF may involve a greater level of disruption than that associated with the tracks or stops because it requires excavation; soil remediation, if necessary; street closures; construction staging areas; traffic control; and utility issues related to building a permanent structure. The MSF would be constructed from standard building materials that would be durable and resistant to vandalism.

2.8.5 Streetcar Stop Platforms

The first step of platform construction involves setting forms, installing underground service utilities, and pouring concrete foundations and curbs. The platform surface, along with ramps and steps connecting to the platform, would be constructed next, followed by setting canopies and other platform amenities. Platforms would be constructed from standard building materials that are durable and resistant to vandalism.

2.8.6 Operating Systems Installation

This segment of construction would include installation of rail system elements, such as the OCS for streetcar power distribution (i.e., poles and wiring), TPSS, and communication systems.

Systems installation generally follows the completion of track construction. Finishing for platforms usually overlaps with systems work and is completed prior to final testing and pre-revenue operations. Systems installation work is less disruptive to communities than track construction work. Because the work area would be confined to the track area, a minimal number of partial lane closures are anticipated.

2.8.7 Testing and Start-Up

This stage includes testing of streetcar operations and communication systems, signal coordination, and personnel training prior to the opening of the streetcar system.

2.9 Streetcar Operations

The currently proposed operating plan assumes that the streetcar system would operate 7 days a week with an estimated three to six streetcars running at any given time. The run time for a round trip would be on average approximately 35 to 40 minutes for any of the Build Alternatives. As shown in Table 2-2, at morning and evening peak hours, an estimated six vehicles would be in operation, with headways of approximately 7 minutes at a given location. During non-peak mid-day hours, an estimated four vehicles would be in operation, with headways of approximately 10 minutes. During non-peak evening hours, an estimated three vehicles would be in operation, with headways of approximately 15 minutes. Hours of operation would be 6 a.m. to 12 midnight, Monday through Thursday; 6 a.m. to 2:30 a.m. on Friday; 9 a.m. to 2:30 a.m. on Saturday; and 9 a.m. to 12 midnight on Sunday and holidays. The maximum operating speed is assumed to be 30 mph on Figueroa Boulevard, and 25 mph or less everywhere else.

Table 2-2. Estimated Streetcar Operating Plan

Number of Vehicles	Operating Hours	Headway (minutes)	Monday to Thursday	Friday	Saturday	Sunday/ Holidays
6	AM/PM Peak Hour	7	6 a.m.– 9 a.m. 3 p.m.–6 p.m.	6 a.m.–9 a.m. 3 p.m.–6 p.m.	--	--
4	Mid-Day Non-Peak	10	9 a.m.–3 p.m.	9 a.m.–3 p.m.	9 a.m.–5 p.m.	9 a.m.–5 p.m.
3	Evening Non-Peak	15	6 p.m.– 12 midnight	6 p.m.–2:30 a.m.	5 p.m.–2:30 a.m.	5 p.m.– 12 midnight
Source: HDR 2013.						

2.9.1 Streetcar Ridership

Daily ridership for the proposed Project was projected using the FTA tool for estimating transit ridership: the Simplified Trips-On-Project Software (STOPS) model. Estimates of daily riders and associated auto person miles reduced, as well as the calculated estimates of vehicle miles reduced, for each of the four Build Alternatives, is displayed in Table 2-3.

Table 2-3. LA Streetcar Daily Ridership and Auto Travel Reduction Estimates

Alternative	2015			2020			2040		
	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]
2 – 7th Street with Grand Avenue Extension	5,134	8,448	6,813	5,583	8,893	7,172	7,379	10,672	8,606
3 – 7th Street without Grand Avenue Extension	3,795	6,775	5,464	4,123	7,098	5,724	5,434	8,391	6,767
4 – 9th Street with Grand Avenue Extension	5,301	8,301	6,694	5,773	8,748	7,055	7,660	10,539	8,499
5 – 9th Street without Grand Avenue Extension	3,522	6,042	4,873	3,851	6,352	5,123	5,170	7,592	6,123

Source: Metro, Simplified Trips-On-Project Software (STOPS), 2016.
[a] Auto occupancy conversion factor (1.24 persons/vehicle) taken from the City of Los Angeles Travel Demand Model.

2.10 Permits, Approvals, and Intended Uses of the EIR

Certification of the Final EIR, adoption of a Mitigation Monitoring & Reporting Program (MMRP) and approval of a Locally Preferred Alternative (LPA) by the City of Los Angeles would be required prior to construction and implementation of the Project. Also, if federal funds are sought, the completion of a federally required Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) would be necessary, a process managed under the direction of the FTA, who would be providing funding under its Small Starts Program. Those federal activities would occur subsequent to completion of the CEQA process for which this EIR has been prepared.

This Draft EIR is a project EIR, as defined by Section 15161 of the State CEQA Guidelines and, as such, serves as an informational document for the general public and the Project's decision-makers. The City has the responsibility for preparing and distributing the Draft EIR pursuant to State CEQA Guidelines Section 21067. This EIR would be used in connection with all other permits and approvals necessary for construction and operation of the Project. This EIR would be used by LADOT, Los Angeles Department of Public Works, Bureau of Engineering, the Los Angeles Department of Building and Safety, Los Angeles Bureau of Street Lighting, California Public Utilities

Commission (CPUC), and other responsible public agencies that must approve activities undertaken with respect to the Project.

Implementation of the Project would require discretionary actions and permits from the following agencies.

- Board of Public Works—Recommendations for approval of the Project and certification of the EIR by the City Council.
- City Council—Certification of the EIR, adoption of Findings and Statement of Overriding Considerations, adoption of an MMRP, approval of an LPA, potential approval of eminent domain actions (should they become necessary), and possible amendments to Downtown Street Standards.
- California Public Utilities Commission—Approval regarding safety of rail crossings; the Project design related to tracks, overhead structures, and site planning; and some operational requirements.
- Los Angeles Department of Transportation—Approval of traffic signal/transit priority system improvements and street restriping plans; temporary street closures and haul routes.
- Los Angeles Department of Building and Safety—Issuance of grading haul permits, building permits, certification of occupancy, etc., for improvements such as the MSF and TPSS off the public right-of-way.
- Los Angeles Department of Public Works, Bureau of Engineering (local lead agency)—Approval of all engineering drawings and street-widening plans, related to work within the public right-of-way.
- Los Angeles Department of Public Works, Bureau of Street Services—Responsibility for street maintenance and approvals related to landscape architecture and urban forestry issues.
- Los Angeles Department of Public Works, Bureau of Street Lighting—Approval of lighting design.
- Federal Transit Administration (potential joint lead agency with City of Los Angeles under NEPA)—Approval of Project for federal funding, and approval of an EA/FONSI.
- City Planning Department:
  - Public Benefits Project approval.
  - Approval of Project subject to Urban Design Studio recommendations and Downtown Design Guide.
- Board of Police Commissioners—Approval for certain construction activities during nighttime hours, on weekends, and over holiday periods, pursuant to LAMC Section 41.40(j).
- Additional actions as determined to be necessary.

2.11 Related Projects

Section 15130 of the State CEQA Guidelines stipulates that EIRs must consider the "cumulative impacts" of a Project as well as significant environmental impacts. A cumulative impact is defined as an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects, causing related impacts (State CEQA Guidelines Section 15355). As provided in the State CEQA Guidelines, Section 15130(a)(1), the cumulative impacts discussion in an EIR need not discuss impacts that do not result in part from the project evaluated in the EIR. Cumulative impacts may be analyzed by considering a list of past, present, and probable future projects producing related or cumulative impacts (State CEQA Guidelines Section 15130[b][1][A]).

All projects that are proposed (i.e., with pending applications), recently approved, under construction, or reasonably foreseeable that could produce a cumulative impact on the local environment when considered in combination with the proposed project are included in the EIR. These projects should include, if necessary, projects outside of the control of the lead agency. If a concise list of related projects is not available, cumulative impacts may be analyzed using the regional or area-wide growth projections contained in an adopted or certified general plan or related planning document.

Typically, for purposes of the cumulative impacts analysis contained in this Draft EIR, the related projects list is the approach used. However, as provided in State CEQA Guidelines, Section 15130(b)(1)(B), there are certain circumstances where it is appropriate to include a growth rate into the cumulative impacts analysis (e.g., traffic analysis). Where such circumstances occur, the methodology is explained and it is hereby acknowledged that this approach is conservative and presents a worse-case scenario.

Table 2-4 lists the related projects that were considered in the cumulative impact analysis as of 2015. The list consists of all potential projects located within approximately 2 miles of the study area. The locations of the related projects are depicted on Figure 2-5.

Table 2-4. Related Projects

Map No. (Figure 2-5)	Project Name	Location	Description	Size
1	Ava Little Tokyo (2005-Cen-1993)	200 Los Angeles Street	Condominiums Apartments Retail	570 units 280 units 50,000 sf
2	TenTen Wilshire Expansion (The Icon)	1027 W Wilshire Blvd	Condominiums Retail	402 units 7,428 sf
3	Vibiana Lofts	225 S Los Angeles Street	Condominiums Retail	300 units 3,400 sf
4	Northeast Tower	215 W 9th Street	Condominiums Retail	210 units 9,000 sf
5	Amacon Project	1133 S Hope Street	Condominiums Restaurant	159 units 6,827 sf
6	Mixed-Use Redevelopment Project	745 S Spring Street	Condominiums Retail	247 units 10,675 sf
7	5th & Olive	427 W. 5th Street	Apartments Restaurant	615 units 16,309 sf
8	11th & Hill Project	1115 S Hill Street	Condominiums Restaurant	172 units 6,850 sf
9	Bixel & Lucas	1102 W. 6th Street	Apartments Retail	649 units 3,996 sf
10	8th/Hope/Grand Project	609 W 8th Street	Condominiums Hotel Retail Restaurant	225 units 200 units 30,000 sf 32,000 sf
11	Office Building	1130 W Wilshire Boulevard	n/a	n/a
12	6th & Main Residential Project	601 S Main Street	Condominiums Retail	777 units 20,000 sf
13	Mixed-Use Project (*Herald Examiner*)	1111 S Broadway	Apartments	391 units

Map No. (Figure 2-5)	Project Name	Location	Description	Size
			Office Retail	39,725 sf 49,000 sf
14	Mixed-Use	1148 S Broadway	Apartments Retail	94 units 2,500 sf
15	DTLA South Park Site 1	1120 S Grand Avenue	Apartments Hotel Retail	461 units 300 room 8,700 sf
16	Variety Arts (Mixed-Use)	940 S Figueroa Street	Office Restaurant Bar	3,295 sf 10,056 sf 5,119 sf
17	Restaurant	1036 S Grand Avenue	Restaurant	7,149 sf
18	Residential	459 S Hartford Avenue	Apartments	49 units
19	Mixed-Use	1150 W Wilshire Blvd	Apartments Restaurant	80 units 4,589 sf
20	Mixed-Use	737 S Spring Street	Apartments Pharmacy	320 units 25,000 sf
21	Apartments	1218 W Ingraham Street	Apartments	90 units
22	Condominiums	742 S Hartford Avenue	Condominiums	58 units
23	Mixed-Use	732 S Spring Street	Apartments Pharmacy/Drug Store	400 units 15,000 sf
24	Mixed-Use	340 S Hill Street	Apartments Retail	428 units 6,700 sf
25	Glass Tower Project (Mixed Use)	1050 S Grand Avenue	Condominiums Retail Restaurant	151 units 3,472 sf 2,200 sf
26	Embassy Tower	848 S Grand Avenue	Condominiums Restaurant	420 units 38,500 sf
27	Zen Mixed-Use Project (Kawada Tower)	250 S Hill Street	Condominiums Retail	330 units 12,000 sf
28	Apartments	1027 S Olive Street	Apartments	100 units

Map No. (Figure 2-5)	Project Name	Location	Description	Size
29	Mixed-Use	928 S Broadway	Apartments Retail Live/Work Office	662 units 47,700 sf 11,000 sf 34,824 sf
30	Mixed Use	534 S Main Street	Apartments Retail Restaurant	160 units 18,000 sf 7,000 sf
31	Mixed Use	840 S Olive Street	Condominiums Restaurant Retail	303 units 9680 sf 1500 sf
32	Mixed Use	710 S Grand Avenue	Apartments Retail Restaurant	700 units 27,700 sf 5,000 sf
33	ISAF – Retail/Restaurant	201 S Broadway	Retail/Restaurant	27,765 sf
34	Mixed-Use	400 S Broadway	Apartments Retail Bar	430 units 10,000 sf 5,000 sf
35	1001 S Olive Street Project	1001 S Olive Street	Apartments Restaurant	225 units 5,000 sf
36	Mixed-Use	1000 S Grand	Apartments Restaurant	274 units 12,000 sf
37	Hill Street Mixed-Use	920 S Hill Street	Apartments Retail	239 units 5,400 sf
38	Broadway Mixed-Use	955 S Broadway	Residential Retail	169-218 units 7,000 sf
39	Mixed-Use	801 S Olive Street	Apartments Restaurant	331 units 10,000 sf
40	Olympic & Olive Mixed-Use Project	960 S Olive Street	Apartments Restaurant	263 units 14,500 sf

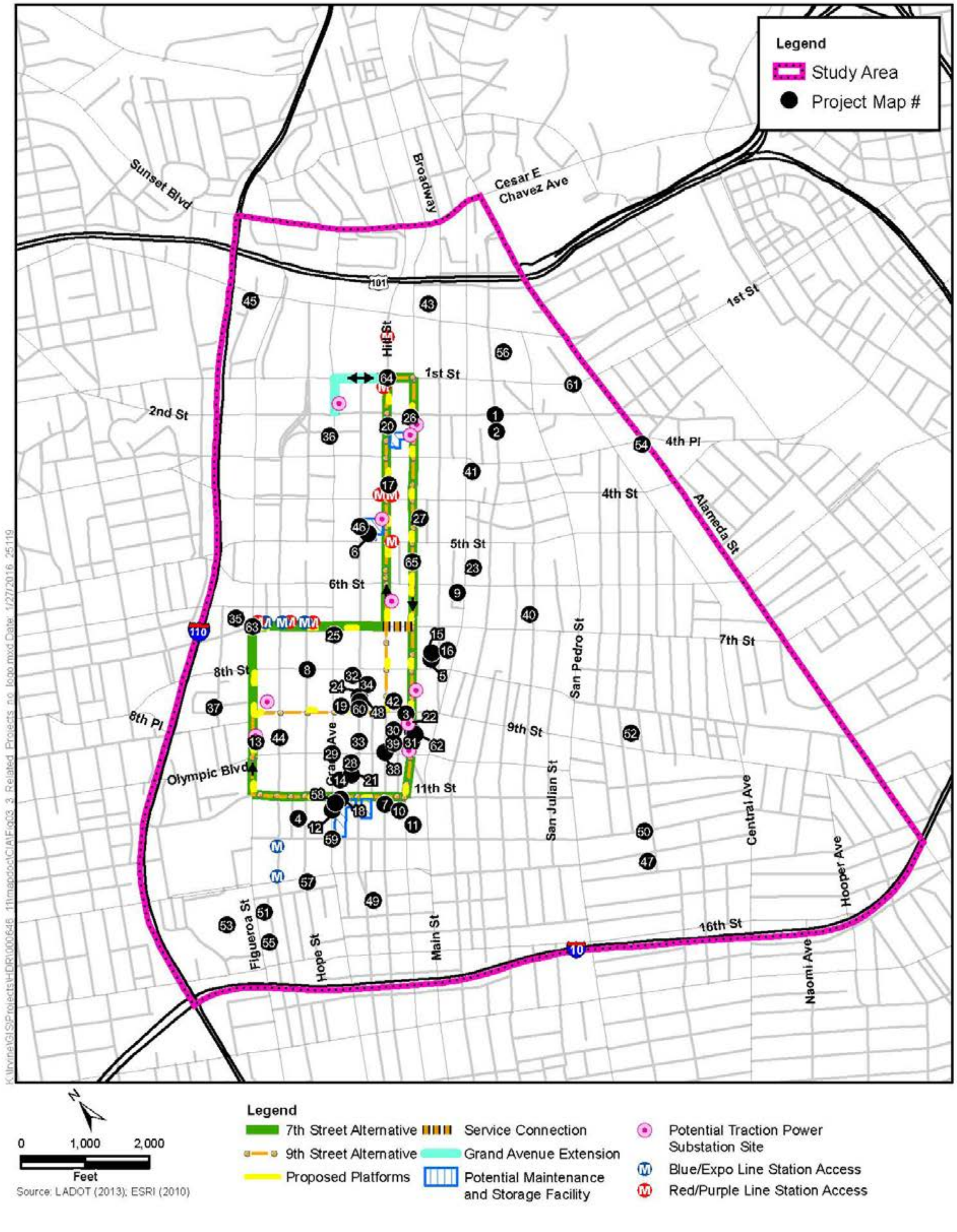
Map No. (Figure 2-5)	Project Name	Location	Description	Size
41	Mixed-Use	820 S Olive Street	Apartments Retail	589 units 4,500 sf
42	Wilshire Grand Project	900 W Wilshire Boulevard	Hotel Office Restaurant/Retail	900 units 400,000 sf 45,100 sf
43	Grand Avenue (Parcel M-2 Rev)	237 S Grand Avenue	Apartments Museum Restaurant	265 units 120,000 sf 5,200 sf
44	Metropolis Mixed Use	851 S Francisco Street	Condominiums Hotel Office Retail	836 units 480 units 988,225 sf 46,000 sf
45	Olympic and Hill Mixed-Use Project	301 W Olympic Boulevard	Apartments Retail Restaurant	300 units 14,500 sf 8,500 sf
46	Mixed-Use	1145 W 7th Street	Condos Apartments Retail	126 units 100 units 7,200 sf
47	Sapphire Mixed-Use	1111 W 6th Street	Apartments Retail Restaurant	362 units 18,959 sf 3,504 sf
48	940 S Hill MU	940 S Hill Street	Apartments Retail	240 units 14,000 sf
49	Clinic at 7th & Wall	649 S Wall Street	Assisted Living Beds Medical Office w/employees	55 beds 55 employees
50	Medallion Phase 2	300 S Main Street	Residential Retail Restaurant	471 units 5,190 sf 27,780 sf
51	Alexan South Broadway	850 S Hill Street	Apartments Retail	300 units 3,500 sf

Map No. (Figure 2-5)	Project Name	Location	Description	Size
			Restaurant	3,500 sf
52	Hall of Justice Reuse Project	211 W Temple Street	Other	456,900 sf
53	FIDM 2006 Campus Expansion	939 S Flower Street	School Campus	95,700 sf
54	Da Vinci (Mixed Use)	327 N Fremont Avenue	Apartments Retail	600 units 30,000 sf
55	Park Fifth Project (formerly)	450 S Olive Street	Condominiums Retail Restaurant	900 units 19,000 sf 19,200 sf
56	Condominium Project	810 E Pico Boulevard	Condominiums	131 units
57	9th/Olive Mixed Use	860 S Olive Street	Condominiums Retail Restaurant	255 units 18,900 sf 6,000 sf
58	Condominiums	1340 S Olive Street	Condominiums	150 units
59	Manufacturing	800 E 12th Street	Manufacturing	320,497 sf
60	Avant (Mixed-Use Project)	1340 S Figueroa Street	Condominiums Retail Restaurant Spa	273 units 11,000 sf 9,000 sf 10,000 sf
61	LAUSD 9th Street Span K-8 Redevelopment Project	820 S Towne Avenue	Elementary enrollment Middle school enrollment	100 seats 405 seats
62	Convention Center Modernization & Farmers Field Project	1110 W 11th Street	Stadium Rentable Event Center Meeting Room	76,250 sf 143,500 sf 102,150 sf
63	Bowling Alley	333 S Alameda Street	Bowling Alley	40,800 sf
64	1500 S Figueroa Mixed Use	1500 S Figueroa Street	Apartments Retail	190 units 10,922 sf
65	LA Civic Center Office	150 N Los Angeles Street	Retail Office Child Care	35,000 sf 712,000 sf 2,500 sf

Map No. (Figure 2-5)	Project Name	Location	Description	Size
66	Onyx (SPR Mixed Use)	1306 S Hope Street	Apartments Retail	419 units 42,200 sf
67	Mixed-Use Project	1150 S Grand Avenue	Condominiums Retail Restaurant	351 units 12,500 sf 12,500 sf
68	G12 Mixed Use	1200 S Grand Avenue	Apartments Retail	640 units 45,000 sf
69	Omni Group Tower	888 S Olive Street	Apartment	283 units
70	Regional Connector	1st Street and Central Avenue to 7th Street and Flower Street	Light Rail	
71	*Broadway Streetscape Master Plan*	Broadway and 2nd Street to Broadway and Olympic Boulevard	Streetscape	
72	Figueroa Corridor Streetscape Project/ *City of Los Angeles 2010 Bicycle Master Plan*	Figueroa Street and 7th Street to Figueroa Street and King Boulevard	Streetscape	
73	Federal Courthouse	1st Street and Hill Street	Courthouse	600,000 sf
74	Department of Water and Power Elysian Park-Downtown Water Recycling Projects	Elysian Park to University of Southern California	Recycled water pipes and facilities	

sf = square feet
Source: LADOT 2015, *Los Angeles Downtown News* 2013, and ICF International 2015.

Figure 2-5. Related Projects Map



This page was intentionally left blank.

Chapter 3
CEQA Environmental Impact Analysis

Based on public comments, public agency input, and the previously prepared Alternatives Analysis, the City has determined that an EIR would be required for this Project to fulfill the requirements of CEQA. In addition, the City considered agency and public input received during the Notice of Preparation (NOP) comment period (January 3, 2013 to February 1, 2013) and the two scoping meetings held on January 23, 2013 to determine the scope of the evaluation for the EIR.

The comments received during the NOP comment period (see Appendix B) identified 10 issue areas as potentially having significant environmental impacts associated with the Project. These environmental issues and their corresponding section numbers are as follows:

- Section 3.1 Aesthetics
- Section 3.2 Air Quality
- Section 3.3 Cultural Resources
- Section 3.4 Energy
- Section 3.5 Geology and Soils
- Section 3.6 Greenhouse Gas Emissions
- Section 3.7 Hazards and Hazardous Materials
- Section 3.8 Land Use and Planning
- Section 3.9 Noise and Vibration
- Section 3.10 Transportation and Traffic

The Initial Study that was prepared and circulated with the NOP (see Appendix A) concluded that other environmental impact categories would result in a less-than-significant impact or no impact (see Chapter 5). Therefore, only the 10 environmental issue areas noted above are evaluated in this chapter.

Sections 3.1 through 3.10 provide a detailed discussion of: (a) the environmental setting, (b) impacts associated with the project alternatives and also the No Project alternative, (c) cumulative impacts, and (d) both Regulatory Compliance Measures and Mitigation Measures intended to avoid, minimize or reduce significant impacts.

Each section contains the following information:

- **Regulatory Setting** summarizes the regulations, plans, policies, and standards that apply to the Project and relate to the specific issue area in question.
- **Environmental Setting/Affected Environment** describes the physical environmental conditions in the Project's study area relevant to the scope of the particular environmental topic. According to the State CEQA Guidelines, the environmental setting normally constitutes the baseline physical conditions by which the lead agency determines whether or not an impact is significant. For purposes of this document, the baseline is defined as conditions in 2015.

- **Environmental Impact Analysis** discusses the analysis methods, the thresholds of significance, and the relevant construction and operational impacts of the Project. For each impact identified in the EIR, a statement of the level of significance is provided. Impacts are categorized as follows:
  - A designation of **no impact** is given when no adverse changes in the environment are expected.
  - A **less-than-significant impact** would cause no substantial adverse change in the environment.
  - A **less-than-significant impact with mitigation** would or may have a substantial adverse impact on the environment but can be reduced to a less-than-significant level with incorporation of mitigation measure(s).
  - A **significant unavoidable impact** would cause a substantial adverse effect on the environment, and mitigation measures are either insufficient or are not available to reduce the impact to a less-than-significant level.
  - **Level of significance after mitigation** is the remaining impact after the identified mitigation is implemented and has satisfactorily reduced the level of impact.
- **Mitigation Measures:** where it is determined that the Project would generate potentially significant impacts, mitigation measures are recommended to reduce the level of those potential environmental impacts. It also discusses the level of significance of the impacts following implementation of the mitigation measures.

  State CEQA Guidelines, Section 15126.4(A), states that "the discussion of mitigation measures shall distinguish between the measures which are proposed by project proponents to be included in the Project and other measures proposed…which are not included but the lead agency determines could reasonably be expected to reduce adverse impacts if required as conditions of approving the project."

  Project Design Elements have in some cases been identified that would either serve to avoid or minimize impacts.

  This EIR also distinguishes between Mitigation Measures and Regulatory Compliance Measures (RCMs).
- **Regulatory Compliance Measures** are actions or policies that are required by existing local, state, or federal law or regulation. Because RCMs are incorporated into the Project, they do not constitute mitigation measures. RCMs will be reflected in the Mitigation Monitoring and Reporting Program required under Section 15097 of the State CEQA Guidelines to ensure that they are implemented as a part of the Project.
- **Cumulative Impacts** discusses whether the Project's impacts would combine with the impacts of other past, present, or anticipated future related projects and anticipated growth to result in a considerable contribution to a cumulative impact.

3.1 Aesthetics

This section addresses the potential for the Project to result in impacts on aesthetic resources. The information presented in this section is based on the Project's Visual Impact Assessment (VIA), which is hereby incorporated by reference and is included as Appendix D to this EIR.

3.1.1 Regulatory Setting

The Project would be subject to a number of local plans, policies, and regulations related to aesthetics and visual character, including the *California Environmental Quality Act* (CEQA), the *Los Angeles Municipal Code* (LAMC), the *City of Los Angeles General Plan* inclusive of the *Mobility Plan* and *Framework Element*, the *Central City Community Plan*, the *Bunker Hill Specific Plan*, the *Los Angeles Sports and Entertainment District Specific Plan*, the *Convention and Event Center Specific Plan*, the *City of Los Angeles Walkability Checklist*, the *Citywide Urban Design Guidelines*, the *Downtown Design Guidelines*, the *Historic Downtown Los Angeles Design Guidelines*, the *Broadway Streetscape Master Plan*, the *Figueroa Corridor Streetscape Project*, the *City of Los Angeles Tree Preservation Ordinance*, and the *City of Los Angeles Tree Preservation Policy*.

3.1.2 Federal

3.1.2.1 Federal Highway Administration Visual Impact Assessment Guidance

The Federal Highway Administration's (FHWA's) *Visual Impact Assessment for Highway Projects* provides an analytical framework for identifying and assessing qualitative changes to the visual environment that could be introduced as part of a transportation project, regardless of whether the project calls for public transit or highway improvements, parkland improvements, or architectural design interventions. The FHWA guidance is widely used by local, regional, state, and federal planning agencies in California to assess the potential of a project to affect visual quality. It is intended to satisfy the provisions of both NEPA and CEQA as they relate to aesthetic impacts. The process used in the Visual Impact Assessment (VIA) generally follows the guidelines outlined in *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1988).

3.1.3 State

3.1.3.1 *California Environmental Quality Act*

CEQA requires an evaluation of scenic resources when considering project effects on the environment. The evaluation considers site-specific history, context, and area sensitivity, such as whether light and glare, demolition, and new development could potentially change visual character and affect scenic views and natural and human-made visual resources.

3.1.4 Local and Regional

3.1.4.1 *Los Angeles Municipal Code*

The LAMC sets forth regulations and standards regarding the allowable type, density, height, and design of new development projects. In particular, Chapter 1 of the LAMC, *General Provisions and Zoning*, provides development standards for the various zoning districts in the City of Los Angeles. In addition, the LAMC also sets forth the following specific regulations regarding lighting:

> Section 12.21A.5(k) restricts light spill onto adjacent properties and provides minimum luminance levels for safety within and around parking facilities.

The selected Maintenance and Storage Facility (MSF) site and TPSS installation components of the Project could be considered a development project within the meaning of the LAMC, and it would occupy a land parcel; therefore the LAMC would apply to that element of the Project.

3.1.4.2 *City of Los Angeles General Plan*

The *City of Los Angeles General Plan* is a comprehensive, long-term declaration of purposes, policies, and programs for the development of the City (Los Angeles Department of City Planning 2013c). It sets forth goals, objectives, and programs to provide a guideline for day-to-day policies and meet the existing and future needs and desires of the community while integrating a range of state-mandated elements (e.g., Transportation [Mobility], Noise, Safety, Housing, Conservation). As a part of the General Plan, the City of Los Angeles includes community plans that establish policies and standards for each of the 35 geographic areas in the City. The community plans are focused on specific geographic areas of the City, locally defining the general plan's more general citywide policies and programs. The Project is located with the Central City Community Plan area. For detailed information on applicable general plan policies and objectives related to the proposed Project, see Section 3.8*, Land Use and Planning*.

3.1.4.3 *Central City Community Plan*

As part of the *City of Los Angeles General Plan*, the *Central City Community Plan* guides development within its planning area to create a healthful and pleasant environment. Chapter III, *Land Use Policies and Programs*, serves as the Land Use Element of the General Plan for the downtown area. It includes a number of objectives and policies that address the visual aspects of new development. The Community Plan provides broad urban design objectives for each district in the Community Plan area. It provides urban design objectives for the revitalization of Broadway as a regional-scale, nighttime entertainment district that promotes the preservation and reuse of its rare collection of historic theaters in the downtown area.

3.1.4.4 *Bunker Hill Specific Plan*

The *Bunker Hill Specific Plan* area is bounded generally by Interstate (I-) 110 on the west, 5th Street on the south, Hill Street on the east, and 1st Street on the north. The purposes and intentions of the *Bunker Hill Specific Plan* are to maintain a high quality built form, enhance the district's identity, encourage compatible infill development, and support the improvement of the business environment by providing an attractive public realm.

3.1.4.5 *Los Angeles Sports and Entertainment District Specific Plan*

The *Los Angeles Sports and Entertainment District (LASED) Specific Plan* area is bounded generally by Olympic Boulevard on the north, Flower Street on the east, Pico Boulevard on the south, and I-110 on the west. The purpose of the plan is to provide continued and expanded improvements to the plan area as a major entertainment/mixed-use development and assure orderly infill of public facilities consistent with the intensity and design of the existing district.

3.1.4.6 *Convention and Event Center Specific Plan*

The *Convention and Event Center Specific Plan* area is generally bounded by Chick Hearn Court on the north, Figueroa Street on the east, Venice Boulevard on the south, and I-110 on the west. The purpose of the plan is to enhance the area as a major convention and event center, assure orderly infill of public facilities consistent with the intensity and design of the existing district, and provide public gathering places and a lively pedestrian-friendly environment through the establishment of unique streetscape and open space places.

3.1.4.7 *City of Los Angeles Walkability Checklist*

The *2008 Walkability Checklist for Entitlement Review* was developed by the City Planning Department's Urban Design Studio to encourage City planning staff, project proponents, and community stakeholders to pursue high quality urban design that provides enhanced pedestrian movement, access, comfort, and safety, both in the public right-of-way and on private properties. It specifies urban design guidelines that are generally applicable to all projects requiring discretionary approval for new construction. The Walkability Checklist consists of objectives, goals, and implementation strategies regarding various design elements that are intended to improve the pedestrian environment, protect neighborhood character, and promote high quality urban form. Such topics as sidewalks, crosswalks/street crossings, on-street parking, utilities, building orientation, off-street parking and driveways, onsite landscaping, building façades, and building signage and lighting are addressed and should be considered in the design of a project.

3.1.4.8 *Citywide Design Guidelines*

The *2011 Citywide Design Guidelines* were adopted by the City Planning Commission for use in reviewing applications for commercial, multi-family, mixed use, and industrial projects. The *Commercial Guidelines* (dated May 2011) serve to implement the ten Urban Design Principles, a part of the *Framework Element*. The first two principles deal with mobility and transit access in the public right-of-way. These principles are a statement of the City's vision for the future of Los Angeles, providing guidance for new development and encouraging projects to complement existing urban form in order to enhance the built environment in Los Angeles. One principle is designed with the intended purpose of developing inviting and accessible transit areas, which, among other objectives, would be done by augmenting the streetscape environment with pedestrian amenities and improving the streetscape by reducing visual clutter.

3.1.4.9 *Downtown Design Guide*

With the exception of the Historic Core, which is also governed separately by the *Historic Downtown Los Angeles Design Guidelines* (2002), the *Downtown Design Guide* (DDG) (City of Los Angeles 2009a) provides guidelines for all of downtown. Its overarching goal is to create a better and more livable downtown, in part by promoting sustainable development with a focus on walkability and the formation of "great streets," neighborhoods, and districts offering good connections to transit. Implemented by the City's Planning, Transportation, and Public Works departments, the DDG is tailored to protect and enhance the character of downtown's streetscapes, while respecting the contributions to those streetscapes made by historically significant districts and buildings (namely, massing, scale, and design context). It is intended for application in conjunction with the City's new street standards and emphasizes mobility alternatives to the automobile. Improvement projects undertaken by public agencies must comply with the Downtown Street Standards and all standards and guidelines in the DDG, including sidewalk width, sidewalk configuration, and streetscape improvements.

The DDG contains 11 topic areas: sidewalks and setbacks, ground floor treatment, parking access, massing and streetwall, onsite open space, architectural detail, streetscape improvements, signage, sustainable design, public art, and civic and cultural life.

3.1.4.10 *Historic Downtown Los Angeles Design Guidelines*

The 2002 *Historic Downtown Los Angeles Design Guidelines* (HDLADG) were developed to aid in implementing effective preservation and adaptive reuse projects that protect, highlight, and promote downtown's historic character. Based on the Secretary of the Interior's Standards for the Treatment of Historic Properties, the HDLADG apply to properties located along portions of Main, Spring, Broadway, and Hill Streets, between approximately 3rd Street on the north and 9th Street on the south. This district contains a significant concentration of historic office buildings, department store buildings, and the largest and most architecturally impressive collection of early twentieth-century movie theaters found anywhere in the United States.

Although focused almost entirely on building design, retrofit, maintenance, appropriate building addition design and integration, and signage design, HDLADG guidance is premised on the eventual reintroduction of streetcars and/or trolley lines in the Historic Downtown neighborhood. The HDLADG state that new construction should be planned so that it results in minimal impacts on primary historic building façades.

3.1.4.11 *Broadway Streetscape Master Plan*

The *Broadway Streetscape Master Plan* (BSMP) provides a vision for design improvements along Broadway, a menu of design tools and streetscapes, and other design criteria germane to design within individual street blocks. It presents eight overarching design principles. Among these principles are keeping the new streetscape elements simple, with clean lines and materials, preserving views to historic key buildings, and promoting environmentally responsible design.

Under the provisions of the BSMP, street curb extensions, crosswalk and street paving, transit stop locations, and all signage (including wayfinding and informational signage) require review by the City Planning Department. Also under the BSMP, the Los Angeles Department of Transportation (LADOT) reviews all street right-of-way changes to median strips, crosswalks, bus stop locations, directional and informational signage, bicycle facilities, and any changes to the standard LADOT menu of hardware, colors, and materials.

Although there are numerous non-historic replacement streetlight poles along Broadway, the surviving so-called "Broadway Rose" streetlight bases are considered worthy of retention as part of the streetscape proposed under the BSMP (even though they are not considered historic elements). These bases, as well as historic terrazzo sidewalk installations, historic sidewalk vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers, are itemized in the BSMP and are considered character-defining historic fabric.

3.1.4.12 Figueroa Corridor Streetscape Project

The Figueroa Corridor Streetscape Project calls for a series of design improvements along Figueroa, extending between Martin Luther King Jr. Boulevard and West 7th Street, and along 11th Street, extending west from Broadway. This project includes several overall goals, supported by design features, such as the creation of protected bike lanes, a reduction in vehicle traffic lanes, sidewalk/curb retention, and retrofitted streetlights. Among the goals are the creation of distinctive paving and landscape palette along Figueroa and West 11th Streets and the clearer marking of and design enhancement of public transit stops.

3.1.4.13 *City of Los Angeles Tree Preservation Ordinance*

City Ordinance number 177404 (2006), as amended, regulates the removal of Southern California native tree species commonly found in the City of Los Angeles when those trees measure four inches or more in cumulative diameter, or four and one-half feet above the ground level at the base of the tree. Protected tree species include: nearly all indigenous oak trees of the genus *Quercus*; Black Walnut (*Juglans californica*), California Sycamore (*Platanus racemosa*), and California Bay trees (*Umbellularia californica*). Removal or relocation of protected trees requires a permit from the Board of Public Works. Removal or relocation are defined as "any act that will cause a protected tree to die, including but not limited to acts that inflict damage upon the root system or other part of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk." A protected tree report must be submitted to the Board of Public Works to apply for a tree removal permit.

3.1.4.14 *City of Los Angeles Tree Preservation Policy*

The City of Los Angeles Department of Recreation and Parks established the *Tree Preservation Policy* as a regulatory tool to provide additional protections to urban forest trees within parks beyond the protections regulated by the *City of Los Angeles Tree Preservation.* In addition to the trees protected by the *Tree Preservation,* the *Tree Preservation Policy* regulates protection of Heritage, Special Habitat Value, and Common Park trees. The definitions of each are included below:

- Heritage trees are individual trees of any size or species that are specifically designated as heritage because of their historical, commemorative, or horticultural significance. Before a Heritage tree is pruned, damaged, relocated, or removed, recommendations from Department of Recreation Parks staff arborists must be obtained. The Forestry Arborist makes a recommendation to the General Manager of Recreation and Parks for removal. The General Manager or designee must make the final approval before the tree(s) can be removed.
- Special Habitat Value trees include three of the tree species covered under the *City of Los Angeles Tree Preservation Ordinance*, including California Black Walnut, California Sycamore and

California Bay, as well as other shrubs and trees, such as Toyon (*Heteromeles arbutifolia*), Hollyleaf Cherry (*Prunus ilicifolia*), Catalina Cherry (*Prunus lyonii*), Fremont Cottonwood (*Populus fremontii*), and at least four species of willow (*Salix sp.)*. Before a Special Habitat Value tree is pruned, damaged, relocated, or removed, recommendations from Department of Recreation Parks staff arborists must be obtained. The Forestry Arborist makes a recommendation to the General Manager for removal. The General Manager or designee must make the final approval before the tree(s) can be removed.

- Common Park Trees provide aesthetic, sentimental, economical, and environmental value. Every tree in the City of Los Angeles' parks is recognized as a valuable asset and must be protected.

3.1.5 Environmental Setting/Affected Environment

The visual setting of the Project is defined below in terms of (a) scenic vistas in the study area; (b) visual resources within the study area; (c) the visual quality and character of the downtown area; and (d) light, glare and shadow considerations.

3.1.5.1 Scenic Vistas

The Project's viewshed, defined as the downtown central business district, is constrained by the highly urban environment, which includes multiple skyscrapers and multi-story buildings that obstruct expansive views of the landscape beyond downtown. There are few scenic vistas, other than views that may be available to occupants from the taller buildings in downtown Los Angeles. Due to the lack of distant views from within downtown, and because no views from the higher floors of buildings would be noticeably affected by the Project, no scenic vistas or designated scenic corridors have been identified for analysis in this EIR.

Similarly, Eligible and/or Officially Designated State and/or County Scenic Highways in Los Angeles County, as defined by the California Department of Transportation (Caltrans), include portions of Pacific Coast Highway (State Route [SR]-1), SR-2, I-5, SR-27, SR-39, SR-57, US-101, SR-118, SR-126, and I-210 (Caltrans 2011). No Eligible and/or Officially Designated State and/or County Scenic Highways are located in the vicinity of the proposed Project. State Route 2, the only Official State Scenic Highway in Los Angeles County, is approximately 17.5 miles north of the proposed alignment. Additionally, a segment of I-110 is designated as a Historic Parkway (Caltrans 2011). The southern terminus of the eligible portion is located at the intersection of I-110 and I-5, which is approximately 3 miles northeast of the proposed project site.

The closest scenic highways identified in the City's General Plan include Stadium Way (approximately one mile north of the Project), a portion of Silver Lake Boulevard bordering Silver Lake Reservoir (approximately 2.5 miles northwest of the Project), and Adams Boulevard (west of Figueroa Street and approximately 1.5 miles south of the Project). All of these scenic highways are well outside of the project viewshed. Again, no scenic vistas or designated scenic corridors have been identified for analysis in this EIR.

3.1.5.2 Visual Resources

Visual and scenic resources within downtown primarily consist of groupings of architecturally and historically significant buildings and other design elements of secondary importance, such as landscape features, including Pershing Square and the Los Angeles Civic Center, and mature street trees. A qualified biologist at ICF International reviewed the project alignment and candidate sites for the maintenance and storage facility for the presence of protected trees. No protected trees were identified throughout the alignment or at the candidate sites.

Unique modern buildings along Grand Avenue, such as the Disney Concert Hall and the Museum of Contemporary Art (MOCA), and the historic buildings within and around the Broadway Theater and Commercial Historic District (described below) serve as the primary visual resources within the project viewshed.

Broadway Theatre and Commercial Historic District

A portion of Broadway, generally bounded by 3rd Street on the north and 9th Street on the south, is listed on the National Register of Historic Places (NRHP) as part of the Broadway Theatre and Commercial Historic District. The Historic District, which includes properties on both the east and west sides of the street, was listed on the NRHP in 1979, with a boundary expansion in 2001. It comprises 60 contributing and 38 non-contributing resources,[1] such as sidewalk elements (e.g., terrazzo in front of some theaters and store fronts and sidewalk vault lights) (Chattel Architecture, Planning and Preservation 2010:1).

In addition to the Broadway Theatre and Commercial Historic District, there are numerous other properties within downtown that have been listed or deemed eligible for listing on the California Register of Historical Resources (CRHR) and/or the NRHP. Other properties also have received official historic landmark recognition as City of Los Angeles Historic-Cultural Monuments (HCMs). Because historic resources are also considered potential visual resources for the purposes of CEQA, those properties, as well as other character-defining features within the historic district, such as terrazzo sidewalk displays and the bases of historic streetlights, are considered to be visual resources for the purposes of this section. Among the more architecturally noteworthy historic resources adjoining the project alignment outside the Broadway Theatre and Commercial Historic District are the Herald-Examiner Building (1111 South Broadway), the Fine Arts Building (811 West 7th Street), the Music Center (135 North Grand Avenue), and the County Hall of Administration and Stanley Mosk Courthouse campus (1st to Temple Streets, between Hill Street and Grand Avenue).

3.1.5.3 Visual Quality and Character

Downtown is located on an alluvial outwash of the main channel of the Los Angeles River in the northeastern portion of the Los Angeles Basin. The Elysian Hills are on the western and northwestern edges of downtown. One prominent feature associated with the Elysian Hills is Bunker Hill—an area that generally extends east from I-110 to Hill Street, north of 5th Street. Due to the alluvial outwash plain as well as the presence of the Elysian Hills and Bunker Hill, downtown Los Angeles slopes downward in a southeasterly direction towards the Los Angeles River and I-10. From its highest elevation adjoining Temple Street and Grand Avenue, at 391 feet above mean sea level (msl), the terrain drops approximately 50 feet between Grand Avenue and Spring/Temple Streets to 339 feet above msl. East of Los Angeles Street, and extending south to Broadway and 5th Street, the terrain is generally flat, at approximately 260 to 267 feet above msl. There are no rock outcroppings in the project area.

The project study area falls within or borders six contiguous design districts: Civic Center, Civic Center South, Bunker Hill, Historic Downtown, South Park, and Financial Core. In its alignment along Figueroa Street, between 11th Street and Olympic Boulevard, the Project also borders the LASED/Convention Center design district. Although offices with ground-floor retail predominate,

[1] See Section 3.3 for definitions of these terms.

the setting is a densely developed urban area containing a range of land uses and building types and supports a growing residential population.

In visual terms, 2nd Street east of Broadway is distinguished by the grouping of large-scale federal, state, and local government office and civic buildings that occupy entire city blocks and feature landscaped grounds with park-like attributes—such as expanses of lawn, landscaped spaces located to the north (e.g., County Administrative/Courts complex)—and typical zero-front-setback multi-story commercial buildings with ground-floor retail uses on smaller urban commercial lots located to the south in Historic Downtown (Figure 3.1-1).

The cultural institutions comprising the Music Center—including Disney Concert Hall (to the south, across 1st Street)—are part of a large campus located between Grand Avenue and Hope Street (on the east and west, respectively) and Temple and 2nd Streets (on the north and south, respectively). This civic cultural complex includes four theaters/auditoriums housing theatrical, concert, and opera productions; restaurants; and a partially belowground parking garage. The Colburn School of Performing Arts, MOCA, the Broad (a new public museum of contemporary art), and high-rise apartment buildings adjoin Disney Concert Hall on the south, between 2nd and 3rd Streets on Grand Avenue, and are within the Bunker Hill design district (Figure 3.1-2).

Along Broadway and portions of Hill Street, retail businesses in early twentieth-century buildings, as well as historic movie theaters, are dominant, with newer intermittent residences located above the ground-floor levels (Figure 3.1-3).

Along 7th, Hill, and Figueroa Streets, large office buildings are dominant, with ground-floor restaurants and retail businesses (Figures 3.1-4, 3.1-5, and 3.1-6). Large retail centers and hotels are on 7th Street at Figueroa Street (e.g., the Fig at 7th shopping center and Wilshire Grand Redevelopment Project), and at 7th and Flower Streets (The Bloc).

Figure 3.1-1. Broadway at West 2nd Street, Looking South

Figure 3.1-2. Grand Avenue at West 2nd Street, Looking South

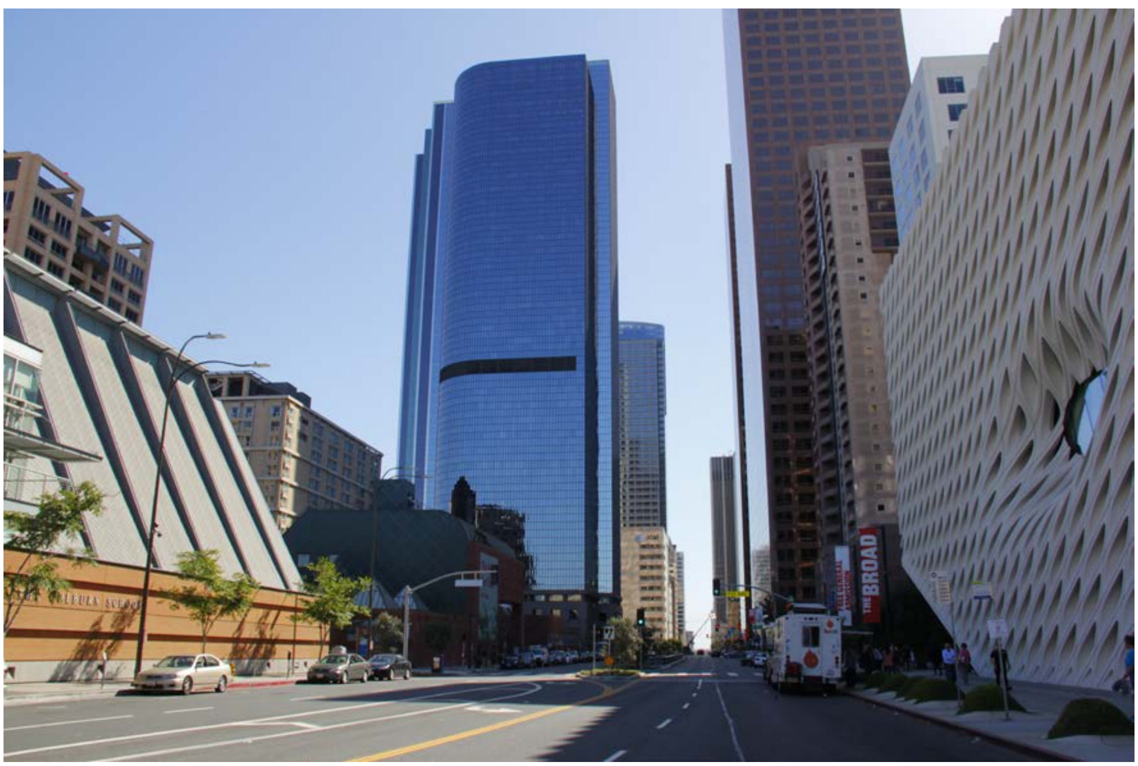


Figure 3.1-3. Broadway, Mid-block between West 5th and 6th Streets, Looking South

Figure 3.1-4. Hill Street, at West 6th Street, Looking North

Figure 3.1-5. West 7th Street, Approaching Flower Street, Looking East

Figure 3.1-6. Figueroa Street at Olympic Boulevard, Looking North

By contrast, 11th Street, in the South Park design district, is a blend of light industrial, office, and loft residences in a variety of contemporary and early-twentieth century buildings ranging in height from low-rise (1- and 3-story) to tall (10-story or more), and with large surface parking lots occasionally separating land uses (Figure 3.1-7).

Figure 3.1-7. West 11th Street, Approaching Olive Street, Looking West

The *Central City Community Plan* classifies a majority of the land within the study area as commercial; significantly smaller portions of the area are designated for multiple-family residential and public facilities land uses. Development along West 9th Street is an example of a combination of residential and commercial land uses (Figure 3.1-8).

Figure 3.1-8. West 9th Street, Approaching Hope Street, Looking East

Visual character throughout the downtown area varies by location and relative position of the viewer. Visual quality in the same area ranges from Low-Quality to High-Quality (terminology is described in more detail below in Section 3.1.6.1, *Methodology*), depending on the presence of visual resources and the distance, speed and angle of the viewer, and other variables. As typified by the photos shown above and in the key views depicted in Figures 3.1-9 through 3.1-15, views throughout the project area are mostly Medium-Quality, where Medium Quality views contain some variety in vegetation and color, and/or moderate overall scenery. The views captured in the selected key views and in viewsheds and lines of sight throughout the immediate project vicinity, particularly those where the visual resources described in Section 3.1.5.2, *Visual Resources*, form a large portion of the foreground or middleground, have moderate intactness, as they combine fairly well-kept urban features and natural settings, are somewhat free from encroaching elements (i.e., lampposts, street signage, etc.), and, thus, maintain an overall moderate level of visual integrity. The same views are moderately vivid, as the juxtaposition of landscaped features and surrounding manmade elements, such as multi-story buildings, form partially distinctive and memorable visual patterns. As such, views throughout the Project are also fairly unified, given the visual coherence and compositional harmony of the human-built components and natural features present in the visual setting.

For the highest quality views in the immediate project vicinity, the primary visual resources described in Section 3.1.5.2 and associated landscape features (if present) dominate the viewshed, where manmade features and street trees create visual diversity for the setting. However, the vertical size and density of downtown real estate and relatively close proximity between neighboring buildings often constrains sightlines to/from visual resources throughout the project area, depending on the location and angle of the viewer. Viewers with higher exposure and sensitivity to the project area would be accustomed to the vertical presence of the multi-story buildings and other manmade visual elements. Views found throughout the project area are encapsulated in the key views shown below (Figures 3.1-9 through 3.1-15), and form a fairly colorful ocular palette, contain a range of visual textures, and provide moderate scenic relief to its viewer groups. As such, views throughout the project area are mostly Medium-Quality.

3.1.5.4 Light, Glare, and Shadow Environment

As is typical in urban environments, the Project's viewshed contains numerous sources of light and glare. Light is emitted from high-rise buildings; security lighting; architectural lighting on building façades, in landscaped areas, and along pedestrian walkways and plaza areas; and vehicle headlights. In addition, light is produced by illuminated signage, including building identification signs and billboards or other types of advertising signage, and streetlights within commercial areas. Nighttime illumination is lowest in the area's primarily multi-family residential neighborhoods. Major nighttime light sources within the Project's viewshed include the land uses in the Los Angeles Sports and Entertainment District (LA Live and Staples Center), the Disney Concert Hall and its surroundings, light spill from signage on major buildings such as the US Bank building, and light spill from vehicle headlights on local roadways and surrounding freeways.

Glare sources generally include the exterior finishes and windows on the high-rise buildings throughout the Project's viewshed. Shadow/shade effects are typical in the downtown area because of the numerous high-rise buildings.

3.1.6 Environmental Impact Analysis

3.1.6.1 Methodology

This analysis generally follows the methodology outlined in the *Visual Impact Assessment for Highway Projects* (FHWA 2015), which is considered an industry standard for evaluating the visual effects associated with highway, railroad, and a wide range of non-transportation–related projects. However, in addition to the FHWA methodology, the *L.A. CEQA Thresholds Guide* (2006) is used to assess impacts and ensure that local planning guidance related to aesthetics has been fully considered as part of this analysis (refer to Section 3.1.6.2*, Thresholds of Significance*).

The basic components of the FHWA methodology include the following:

- Define the project setting and viewshed.
- Identify key views for visual assessment.
- Assess existing visual resources and viewer response.
- Depict the visual appearance of project alternatives.
- Assess changes to visual resources and predict viewer response to those changes.
- Assess the visual impacts of project alternatives. and
- Propose methods to mitigate adverse visual impacts.

Consistent with FHWA guidance, the following steps have been taken:

- The visual environment and existing landscape characteristics within the visual resources study area have been defined and documented. The visual environment has been evaluated for both the existing and future planned conditions.
- Applicable planning documents (e.g., the General Plan, Los Angeles Municipal Code, Downtown Design Guidelines) have been reviewed for pertinent policy and guidance information.
- Major viewer groups have been identified, and anticipated viewer responses have been documented.
- Typical views for the visual assessment have been identified, based on the actual and anticipated responses of representative viewers.
- The project description and conceptual design plans have been reviewed, and the type and degree of visual changes expected to result in the visual resources study area have been documented.
- Design recommendations for specific project features and locations were considered to enhance the visual environment for stationary and transient viewers.
- Appropriate mitigation measures have been identified.

A number of variables affect the degree of visibility, visual contrast, and the ultimate aesthetic impact of a project. Such variables include the scale and size of facilities, distances and viewing angles, color and texture, and the influences of adjacent scenery or land uses. Even where visible, viewer response and sensitivity vary depending on viewer attitudes and expectations. The viewsheds (all the surface areas visible from an observer's viewpoint) along the proposed project alignment are used to characterize the visual setting throughout the corridor and, in this assessment, also include the locations of viewers who are likely to be affected by visual changes brought about by the Project. Rather than offering sweeping views, viewsheds along the project alignment are typically constrained and canyon-like because of existing buildings. Given the dense urban character of the viewshed and the constrained sight lines to the project area from one street to other portions of downtown, this assessment uses a *key view* approach rather than a *landscape unit* approach.[2]

Determining Quality and Character of Visual Resources

Visual Character. The visual character of a view is described by the topography, land uses, scale, form, and natural resources in the view. The assessment of visual character is based on defined attributes such as physical traits—including form, color, line, and texture (pattern elements)—as well as pattern character traits, the dominance, scale, and diversity or continuity of visual elements.

[2] A *landscape unit* is a specific portion of the regional landscape and can be thought of as an outdoor room that exhibits a distinct visual character. A landscape unit often corresponds to a place or district that is commonly known among local viewers. The landscape unit approach is useful when a highway or railroad project traverses visually distinct settings that can be readily defined geographically, whereas the *key view* approach is useful when the views are largely homogeneous throughout the viewshed, and in densely urbanized, developed settings where development on a specific parcel might be proposed, and in which sightlines are often constrained by human-made elements, such as buildings, and natural elements, such as topography.

Visual Quality. Determining the quality of a view is subjective because it is based, in part, on the viewer's values and notions about what constitutes a quality setting. In an effort to establish an objective framework, this analysis applies the evaluative criteria (i.e., vividness, intactness, and unity) and qualitative rankings (low, medium, and high) presented in the FHWA guidelines.

This method should correlate with public judgments of visual quality well enough to predict those judgments, and can also help identify specific methods for mitigating each impact that may occur as a result of a project. The three criteria for evaluating visual quality are the following:

- *Vividness* is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual human-made components in the landscape.

As a general rule, High Quality Views are found to have topographic relief, a variety of vegetation, rich colors, impressive scenery, and unique natural and/or built features. Medium Quality Views have interesting but minor landforms, some variety in vegetation and color, and/or moderate scenery. Low Quality Views contain uninteresting features, little variety in vegetation and color, uninteresting scenery, and/or common elements. In addition to their use as descriptors, vividness, unity, and intactness are used more objectively as part of a rating system to assess a landscape's visual quality.

Assessing Viewer Response

Viewer response is composed of two elements: *viewer sensitivity* and *viewer exposure*. These elements combine to form a method of predicting how the public might react to visual changes brought about by a project.

Viewer sensitivity is both the viewer's concern for scenic quality and the viewer's response to change in the visual resources that make up the view. **Viewer exposure** is assessed by measuring the number of viewers exposed to the resource change, as well as the frequency of the viewing opportunity, type of viewer activity, duration of their view, speed at which the viewer moves, and position of the viewer. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project. Because objects in the foreground have more detail, views from nearby locations are more detailed than objects that are indistinguishable at a distance. Viewers experience visibility of a project to varying degrees in a particular viewshed, depending on distance or intervening structures or obstacles.

There are two basic groups of viewers present in downtown as well as several sub-groups: (1) viewers associated with specific buildings (e.g., residents, business owners, workers) and (2) mobile viewers (e.g., commuting motorists, pedestrians, sightseers). Residential viewers typically have the highest level of sensitivity to visual quality and changes to visual quality because of their familiarity with the view over a period of time, investment in the area, and sense of ownership of the view. Business owners share some of the sensitivity to visual quality typical of residents for similar reasons, including concern about development activities that could adversely affect their business operations (e.g., construction activities that restrict customer access, project operations that obscure their business signage). Other viewers, with exceptions, usually have a low or average sensitivity to visual quality or change. These include people on the local roadway system, such as commuting motorists and pedestrians. If they are traveling simply to get from one place to another for work reasons or while doing errands, their sensitivity would normally be average. However, when motorists are traveling for pleasure, or sightseers are present, it is likely that they would be somewhat more sensitive to their surroundings. The level of sensitivity increases based upon the level of familiarity the person has with the visual setting and the viewer's concern for scenic quality (e.g., downtown residents who regularly walk downtown versus persons who visit offices and are seldom downtown).

Key Views/Key Observation Points

A key view is a point from which a select view is analyzed from the perspective of potential key viewer groups. In order to represent the visual setting of the Project, a number of key views have been selected that most clearly convey the visual setting. As mentioned, key views also represent the perspective of the primary viewer groups that would potentially be affected by the Project.

A view is considered key if at least one of the following circumstances applies:

- Visual resources are present, regardless of the quality of the view. The sensitivity of the affected viewer group is medium or high, and the duration of the view is long-term.
- The quality of the view is medium or high, regardless of whether visual resources are present. The sensitivity of the viewer group is medium or high, and the duration of the view is long-term.
- The view is distinct, clear, and unobstructed from the street to adjacent buildings and is viewed regularly by a large number of commuters. In this case, the viewer sensitivity would be medium, and the view would be long-term.

Figures 3.1-1 through 3.1-8 above capture views of the existing visual setting along the project corridor, and are identified by the location and direction of view. Figures 3.1-9 through 3.1-15 that follow capture seven key views that could noticeably change as a result of the Project and are presented with simulations showing the same view with project features included (see Section 3.1.6.3, *Environmental Impacts*) so as to show the difference between the existing visual environment and the visual elements that are proposed as a part of the Project.

The seven key views that represent the potential noticeable changes as a result of the Project, also known as Key Observation Points (KOPs), have been selected to document the visual character and quality of the corridor and to reflect the perspective of sensitive viewers (e.g., residents) and viewer groups. KOPs are selected in order to best represent the area's overall visual quality, character, and aesthetic image as seen by its key viewers and viewer groups. All KOPs have been evaluated using "before-and-after" visual simulations. The KOPs identified for this analysis are the following:

- **KOP 1 (Figure 3.1-9): Grand Avenue, near 2nd Street, looking north to 1st Street.** Disney Concert Hall is in the foreground on the left. The view documents the streetcar terminus adjoining the Music Center, Disney Concert Hall, Colburn School of Performing Arts, MOCA, and The Broad art museum.
- **KOP 2 (Figure 3.1-10): Broadway between 5th and 6th Streets, looking north,** documents a heavily traveled retail shopping street framed by historic commercial buildings and movie theaters. Broadway draws large numbers of pedestrians.
- **KOP 3 (Figure 3.1-11): Figueroa Street, looking north toward Olympic Boulevard,** documents the streetscape adjoining the LASED and is defined north of Olympic Boulevard by

highly varied architectural design. Figueroa Street is a highly traveled thoroughfare and is familiar to many LASED and downtown visitors and commuting motorists.

- **KOP 4 (Figure 3.1-12): West 7th Street at Flower Street, looking east**, documents a representative section of the street framed by historic commercial buildings of comparable height that form a strongly defined streetwall. West 7th Street marks the southern boundary of the Financial District and is a major transit transfer location for Metro trains and buses, as well as DASH. It features large numbers of pedestrians.
- **KOP 5 (Figure 3.1-13): Hill Street at 6th Street, looking north.** Pershing Square, a well-known downtown visual landmark, appears as a vivid visual element at middle ground, framed by tall buildings of highly varied design.
- **KOP 6 (Figure 3.1-14): West 11th Street at Broadway, looking west.** The Herald-Examiner Building, which is an architectural and historic landmark, appears in the foreground portion of the view on the left.
- **KOP 7 (Figure 3.1-15): West 11th Street between Hope and Flower Streets, looking west.** The view documents the dense cluster of high-rise residential development that exists along this segment of 11th Street east of the LASED.

3.1.6.2 Thresholds of Significance

For purposes of evaluating potential impacts associated with the Project, the *L.A. CEQA Thresholds Guide* (2006) is being followed. The following factors are to be used to determine impact significance, on a case-by-case basis:

Aesthetics

1. The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.
2. The amount of natural open space to be graded or developed.
3. The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc**.**
4. The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.
5. The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.
6. The degree to which the project would contribute to the area’s aesthetic value.
7. Applicable guidelines and regulations.

Obstruction of Views

8. The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).
9. Whether the project affects views from a designated scenic highway, corridor, or parkway.
10. The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).

11. The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

Nighttime Illumination

12. The change in ambient illumination levels as a result of project sources.
13. The extent to which project lighting would spill off the project site and effect adjacent light-sensitive areas.

Shading

14. Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

3.1.6.3 Environmental Impacts

The environmental impact analysis that follows discusses the Project's potential impacts on aesthetics as it relates to each of the build alternatives. Each build alternative is discussed individually and, thereafter, potential visual impacts introduced by the Traction Power Substations (TPSS) and MSF, the latter of which are also discussed individually as there are four candidate sites currently being considered.

Alternative 1: No Project Alternative

Construction Impacts

No impact. Under the No Project Alternative, no new construction or building would take place as a result of the Project within the project area. Therefore, no new visual elements would be introduced and no construction-period impacts related to *Aesthetics*, *Obstruction of Views*, *Nighttime Illumination*, or *Shading* would occur under Alternative 1.

Operational Impacts

No impact. Under the No Project Alternative, no new transportation facilities would be in operation within the project area as a result of the Project. Therefore, no new visual elements beyond those previously planned/approved facilities would be introduced and, therefore, no further operational impacts related to *Aesthetics*, *Obstruction of Views*, *Nighttime Illumination*, or *Shading* would occur under Alternative 1.

Alternative 2: 7th Street Alternative with the Grand Avenue Extension

Construction Impacts

The section below follows the *L.A. CEQA Thresholds Guide* and discusses the potential construction-related impacts associated with the proposed Project as it relates to overall aesthetic character and quality and the existing visual environment. Key Observation Points, associated visual simulations, and other resources, where appropriate, are used in order to establish the visual setting, identify visual resources throughout the project area(s), and identify potential visual intrusions that could occur as a result of construction. Impacts are expected to be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Aesthetics

Following the *L.A. CEQA Thresholds Guide*, *Aesthetics* impacts should be evaluated considering the following factors.

The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.

Less-than-significant impact. Construction of Alternative 2 would occur over an estimated 24-month period and may take place during daytime and/or nighttime hours. Construction activities associated with the proposed streetcar, due to their short-term nature, would have no long-term impact on the existing features or elements that substantially contribute to the visual character or image of the neighborhood, community. Although construction would result in a temporary disturbance because of the presence of construction equipment, staging areas, exposed excavation areas, and other general activities associated with construction would be visible to nearby viewers, there would be no long-term effect on the scenic or primary visual resources as identified above in Sections 3.1.5.2 and 3.1.5.3, such as Disney Concert Hall, MOCA, Pershing Square, and/or historic buildings within and around the Broadway Theater and Commercial Historic District, as none of the existing features or contributing elements of these visual resources would be removed, altered, or demolished as a result of project construction. Construction impacts related to the removal, alteration, or demolition of these primary visual resources would be less than significant.

However, as a result of project construction, some trees may have the potential to be trimmed or removed. City policy requires all tree removals be replaced on a 2:1 basis for street trees. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The removal of trees may slightly alter the visual character along the proposed alignment. Implementation of Mitigation Measure **MM-AES-C3** would ensure the Project's compliance with the *City of Los Angeles Tree Preservation Ordinance* and *Tree Preservation Policy* such that any trees slated for removal would be planted at or near their original locations at a 2:1 ratio. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The amount of natural open space to be graded or developed.

No impact. The proposed Project does not contain natural space that would be graded or developed. No impacts would occur.

The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.

No impact. The proposed project alignment would not be located in a natural open space area. Thus, construction activities would not involve integrating structures into existing natural open space areas, and no impacts would occur.

The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.

Less-than-significant impact. As mentioned, due to the short-term nature of construction activities, no long-term impact on the area's valued aesthetic image is expected. Construction-period activities would include excavation in streets, the installation of new drainage systems, the pouring of concrete for station platforms, and the installation of new sidewalk paving. Belowground utility relocation activities along project alignment streets would require trenching, possible soil remediation, and the installation of barricading and street circulation-related detour infrastructure. In general, these activities would not create a long-term degree of contrast because of their short-term nature, and also because a majority of this work would take place within the street rights-of-way, similar to other public works projects that occur on a routine basis within the public rights-of-way in downtown Los Angeles. Thus, prior to implementation of mitigation measures, construction activities/equipment would not introduce a substantial degree of contrast with existing conditions that would affect the area's aesthetic image. The impact related to construction activities/equipment and its contrast with existing conditions would be less than significant. Implementation of Mitigation Measures **MM-AES-C1** and **MM-AES-C2** would help minimize construction-related visual impacts and the degree of visual contrast. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.

No impact. The proposed Project would not propose a zone change to accommodate greater or taller structures than surrounding development or otherwise detract from the existing style or image of the area due to density, height, bulk, setback, signage, or other physical elements. No impacts would occur.

The degree to which the project would contribute to the area's aesthetic value.

Less-than-significant impact. Construction activities would not contribute to the area's aesthetic value. During construction, site preparation and grading activities, construction staging on the project sites, barricade installation, and placement of other minor structures and signage would be required to secure the construction site, which could adversely affect the visual quality or character of the immediate area encompassing the project sites. Similarly, the delivery and stockpiling of construction materials and placement of construction equipment on the project site might also temporarily diminish the visual character of the immediate area. However, construction is temporary, and upon its completion, the site is expected to maintain the visual quality of the area and would not result in significant long-term impacts on primary and secondary visual resources throughout the alignment or on the area's overall aesthetic value, which is discussed in more detail below under *Operational Impacts*. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would minimize construction-related visual impacts. These mitigation measures would minimize views of stockpiled materials and idle construction equipment in staging areas, reduce visual clutter and disorder, and require appropriate screening materials, daily visual inspections, and the removal of debris and graffiti. Therefore, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Applicable guidelines and regulations.

Less-than-significant impact. All project construction would be completed in conformance with applicable City regulations and standards. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help ensure compliance with applicable guidelines and regulations (as described in Section 3.1.1, *Regulatory Setting*) and minimize construction-related visual impacts.

Based on the discussion above, construction of the proposed streetcar would not substantially degrade the existing visual character or aesthetic quality of the site and its surroundings. Thus, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Obstruction of Views

Following the *L.A. CEQA Thresholds Guide*, *Obstruction of Views* impacts should be evaluated considering the following factors.

The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).

Less-than-significant impact. As discussed in Sections 3.1.5.2 and 3.1.5.3, visual resources throughout the project area that contribute to its overall aesthetic quality include, but are not limited to, human-made elements and architectural buildings that provide visual interest, such as the Disney Concert Hall, MOCA, Pershing Square, and historic buildings within and around the Broadway Theater and Commercial Historic District. Secondary visual resources consist of mature street trees, formal garden spaces (e.g., Los Angeles County Courthouse gardens), and parks.

Views of visual resources would be partially obstructed on a temporary basis by construction equipment. However, project construction would not result in a long-term impact on the nature or quality of valued public views in the immediate project vicinity, as discussed in more detail below under *Operational Impacts*. Temporary construction activities and the presence of other construction equipment could adversely affect the visual quality or character and, thus, valued views, of the immediate area encompassing the project site. However, because the impacts would be temporary and short term, they would be less than significant. Once construction is complete, valued views to/from the primary visual resources therein would be preserved. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would ensure impacts would be less than significant prior to and following implementation of mitigation.

Whether the project affects views from a designated scenic highway, corridor, or parkway.

No impact. No officially designated scenic resources, vistas, corridors or Eligible/Officially Designated State/County Scenic Highways have been identified within the project viewshed. Because no officially designated scenic highways, corridors or parkways have been identified within the immediate project vicinity, no impacts would occur.

The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).

Less-than-significant impact. Project construction would result in the temporary, minor diminishment and partial obstruction of views in the immediate project vicinity. As mentioned, no large cranes would be required, and, therefore, views of visual resources would not be substantially obstructed by this type of, and/or similar, construction equipment. Partial interruption and/or minor diminishment could occur in places with sightlines along the proposed alignment under Alternative 2, depending on the location, distance, speed, and angle of the viewer. Residential viewer groups and regular visitors would be more sensitive to this type of temporary visual intrusion than recreationists or local commuters; however, project construction would not create permanent blockage of these visual resources or substantially diminish the nature and quality of recognized or valued private and public views. Because construction activities and the presence of construction equipment would be temporary, no long-term obstruction of views, including those depicted in KOPs 1 through 7, would occur. Again, implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would minimize construction-related visual impacts, and impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

Less-than-significant impact. Project construction would not result in a long-term impact on the nature or quality of recognized views available from a length of a public roadway, bike path, or trail, such as those represented in the selected KOPs. Project construction would result in temporary, minor visual impacts; however, upon completion of construction, recognized views would be preserved/maintained. Based on the discussion above, construction of the proposed streetcar would not substantially degrade the existing visual character or aesthetic quality of the site and its surroundings and a less-than-significant impact would result. Again, implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would minimize construction-related visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Nighttime Illumination

Following the *L.A. CEQA Thresholds Guide*, *Nighttime Illumination* impacts should be evaluated considering the following factors.

The change in ambient illumination levels as a result of project sources.

Less-than-significant impact. Because nighttime construction is anticipated in order to reduce daytime traffic impacts, some nighttime lighting at the construction site(s) would be required. Nighttime construction lighting may result in changes in ambient illumination levels, an impact that is potentially significant. Implementation of Mitigation Measure **MM-AES-C2** would ensure that lighting would be directed downward, and spill light would be minimized. Therefore, significant changes in ambient illumination levels as a result of project construction activities are not expected to occur, and it is not expected that construction lighting would be a significant nuisance to nearby residents and businesses, due to their familiarity with ongoing construction projects in the downtown area and existing ambient illumination levels from nearby light sources such as neighboring buildings, street lamps, and vehicle traffic. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.

Less-than-significant impact. As mentioned, nighttime construction is anticipated. Again, through the implementation of Mitigation Measure **MM-AES-C2**, lighting would be directed downward, and spill light would be minimized. Therefore, it is expected that project lighting would not spill off the project site and affect adjacent light-sensitive areas, and construction lighting would not be a significant nuisance to nearby residents, due to their familiarity with ongoing construction projects in the downtown area and existing ambient illumination levels from nearby light sources such as neighboring buildings, street lamps, and vehicle traffic. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Shading

Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

Less-than-significant impact. As previously mentioned, construction is not expected to require large cranes or other major construction-related structures and equipment that would cast large shadows. Similarly, the vertical elements proposed as part of the project (e.g., overhead contact system [OCS] poles, station platform shelters) would not cast shadows that would affect shade-sensitive uses or viewers. Therefore, shading impacts would be less than significant during construction of the proposed Project.

Operational Impacts

This section follows the *L.A. CEQA Thresholds Guide* and discusses the potential impacts associated with the operation of the proposed Project as it relates to overall aesthetic character and quality and the existing visual environment. Key Observation Points, associated visual simulations, and other resources, where appropriate, are used in order to establish the visual setting, identify visual resources throughout the project area(s), and identify potential visual intrusions that could occur as a result of operation.

Aesthetics

The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.

Less-than-significant impact. Major visible, built elements of the proposed Project include the streetcar vehicles, platforms, shelters, catenary poles, and OCS wires. Photo simulations of the proposed streetcar, once built, are shown in Figures 3.1-9A through 3.1-15A (below), and represent expected changes in the visual setting from existing conditions as a result of the Project. The introduction of these built features, as shown in the aforementioned figures, would not remove, alter, or demolish existing features or elements that contribute to the visual character throughout the project area, such as the Los Angeles Civic Center, Pershing Square, MOCA, Disney Concert Hall, architecturally and/or historically significant buildings within and around the Broadway Theater and Commercial Historic District. As shown in the photo simulations, built features associated with the streetcar would not remove, alter, or demolish existing features that contribute to the project area's visual character, and thus a less than significant impact would result. Implementation of Mitigation Measure **MM-AES-O3** would ensure that the catenary poles and OCS wires would be designed and installed in compliance with all applicable design guidelines, policies, and development standards. As a result, catenary poles and OCS wires would be subject to approval and would be consistent with the surrounding design context. Impacts related to built elements of the proposed Project and their effects on existing features or elements of the local visual character would be less than significant prior to mitigation and would remain less than significant following implementation of mitigation.

The amount of natural open space to be graded or developed.

No impact. The proposed project alignment contains no natural open space that would be graded or developed. No impacts would occur.

The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.

No impact. The proposed project alignment would not be located in a natural open space area(s). No impacts would occur.

The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.

Less-than-Significant. As discussed *in* Section 3.1.6.1, *Methodology*, above, KOPs are selected in order to best represent the area' s overall visual quality, character and aesthetic image as seen by its key viewers and viewer groups. As such, the selected KOPs and associated photo simulations shown and discussed below depict the visual environment with and without the proposed streetcar and inform the impacts analysis for the following thresholds:

Aesthetics

- The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image
- The degree to which the project would contribute to the area's aesthetic value

Obstruction of Views

- The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).
- The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).
- The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

As shown in Figures 3.1-9 and 3.1-9A below, the Disney Concert Hall would be within the viewshed under Alternative 2 and serves as the primary visual resource from this view. Depending on the position and angle of the viewer, views can be had of visually prominent hillsides that define the northern edges of the City. The San Gabriel Mountains and their foothills form the backdrop for many views and viewsheds (all of the surface areas visible from an observer's viewpoint) throughout the community. Although no officially recognized scenic views are in this setting, views of the buildings are considered to be important due to the design quality, and sightlines to the foothills of the San Gabriel Mountains are publicly valued. As seen in Figure 3.1-9A, despite the placement of a proposed station stop adjacent to the Disney Concert Hall, project features would read as extensions of the street and of the downtown public transit system. From KOP 1, the degree of contrast introduced by the proposed Project's visible, built elements would be low. It should also be noted that OCS electrical wiring could include two potential configurations. In the first, the OCS wires would support the contact wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. For the purposes of this analysis, neither configuration would introduce a more substantial visual impact than the other, and the degree of contrast introduced by the proposed Project under Alternative 2 would still be relatively low.

Figure 3.1-9. (KOP 1) Existing View along Grand Avenue at 2nd Street, Looking North

Figure 3.1-9A. Simulated View along Grand Avenue at 2nd Street, Looking North

As depicted in Figures 3.1-10 and 3.1-10A below, the Alternative 2 alignment would traverse the Broadway Theatre and Commercial Historic District. Independent of the proposed Project, streetscape improvements are proposed along Broadway as part of the *Broadway Streetscape Master Plan* project (e.g., trees and groundcover plantings, paving, street furniture, additional design context-appropriate street lighting, and wayfinding signs). Again, although no officially recognized scenic views are in this setting, views along Broadway are considered to be important due to the concentration of architectural/historical resources, which serve as the primary visual resources within the viewshed. Because the visible, built project features shown in Figure 3.1-10A would be consistent with other transportation modes within the public right-of-way and would contain small-scaled design elements (seating, limited signage, and poles) that would not substantially block views, the degree of contrast introduced by the proposed Project's visible, built elements would be low at KOP 2.

Figure 3.1-10. (KOP 2) Existing View along Broadway, between 5th and 6th Streets, Looking North

Figure 3.1-10A. Simulated View along Broadway, between 5th and 6th Streets, Looking North

As shown in Figures 3.1-11 through 3.1-13A below, KOP 3 is located along Figueroa Street, approaching Olympic Boulevard, looking north; KOP 4 is at West 7th Street and Flower Street, looking east; and KOP 5 is located on Hill Street, approaching West 6th Street, looking north. Impacts at KOPs 3 through 5 would be similar to those at KOP 2. At these KOPs, under Alternative 2, the Project's visible, built elements would be integrated into its design setting with a fairly minor degree of contrast. The visual impacts associated with the Project would be within the public right-of-way and would read as extensions of the existing street and downtown public transit elements and contain small-scaled design elements (seating, limited signage, and poles) that would not substantially block views. Again, as in KOP 2, the degree of contrast introduced by the proposed Project's visual elements as seen from KOPs 3, 4, and 5 would be relatively low.

Figure 3.1-11. (KOP 3) Existing View along Figueroa Street at Olympic Boulevard, Looking North

Figure 3.1-11A. Simulated View, North along Figueroa Street at Olympic Boulevard

Figure 3.1-12. (KOP 4) Existing View along 7th Street at Flower Street, Looking East

Figure 3.1-12A. Simulated View, 7th Street at Flower Street, Looking East

Figure 3.1-13. (KOP 5) View along Hill Street at 6th Street, Looking North

Figure 3.1-13A. Simulated View, Hill Street at 6th Street, Looking North

As depicted in Figures 3.1-14 and 3.1-14A below, the Herald-Examiner Building is a key architectural-historical resource in the viewshed, and the Ritz Carlton serves as a visual landmark and focal point in the backdrop of the view. As such, it serves as the primary visual resource as seen from KOP 6. Independent of the proposed Project, a reduction in the number of vehicle lanes would occur within this viewshed as part of the Figueroa Corridor Streetscape Project, which would be constructed and completed prior to construction of Alternative 2.

As in KOPs 1–5, visible project features that would be constructed under Alternative 2 would read as extensions of the street and of extant downtown public transit elements at KOP 6. The OCS wires at this location would be more noticeable than at other locations along the project alignment; however, the degree of contrast would still be low. In addition, Figueroa Corridor Streetscape Project landscape features (e.g., supplemental street trees and parkway groundcover plantings) would add a degree of visual cohesiveness to the view and help offset any contrast introduced by the proposed Project.

Figure 3.1-14. (KOP 6) Existing View along 11th Street at Broadway, Looking West

Figure 3.1-14A. Simulated View along 11th Street at Broadway, Looking West

As shown in Figures 3.1-15 and 3.1-15A below, the installation of tracks and new paving along the track path, accompanied by street restriping to demarcate the shared streetcar-motor vehicle lane and reconfigured drive lanes, would read as extensions of current public street infrastructure that is within the existing public right-of-way. Accordingly, the degree of contrast introduced by the visible, built elements of the proposed streetcar under Alternative 2 would be fairly low at KOP 7. Informal views[3] across the viewshed of primary visual resources (e.g., Desmond's Warehouse and Ritz Carlton) would not be impaired because all streetcar infrastructure, with the exception of the OCS system and poles, would be at street level, and would not affect views of these resources. Additionally, Figueroa Corridor Streetscape Project landscape features (e.g., supplemental street trees and parkway groundcover plantings) would add a small degree of visual cohesiveness to the view and help offset any contrast introduced by the proposed Project.

[3] These include ordinary views that do not have status as official or eligible scenic vistas. Visual resources, such as local foothills, mature trees, parkscapes, and architectural resources, may or may not be present in such views.

Figure 3.1-15. (KOP 7) Existing View along 11th Street at Grand Avenue, Looking West

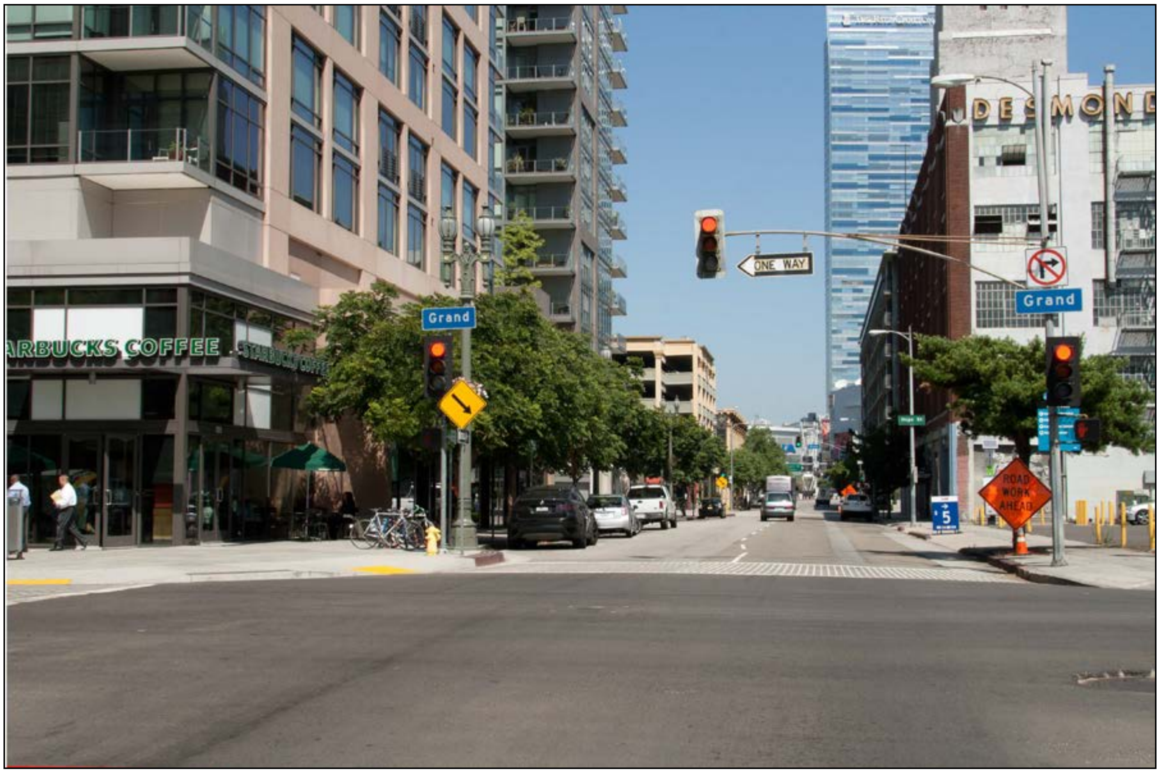
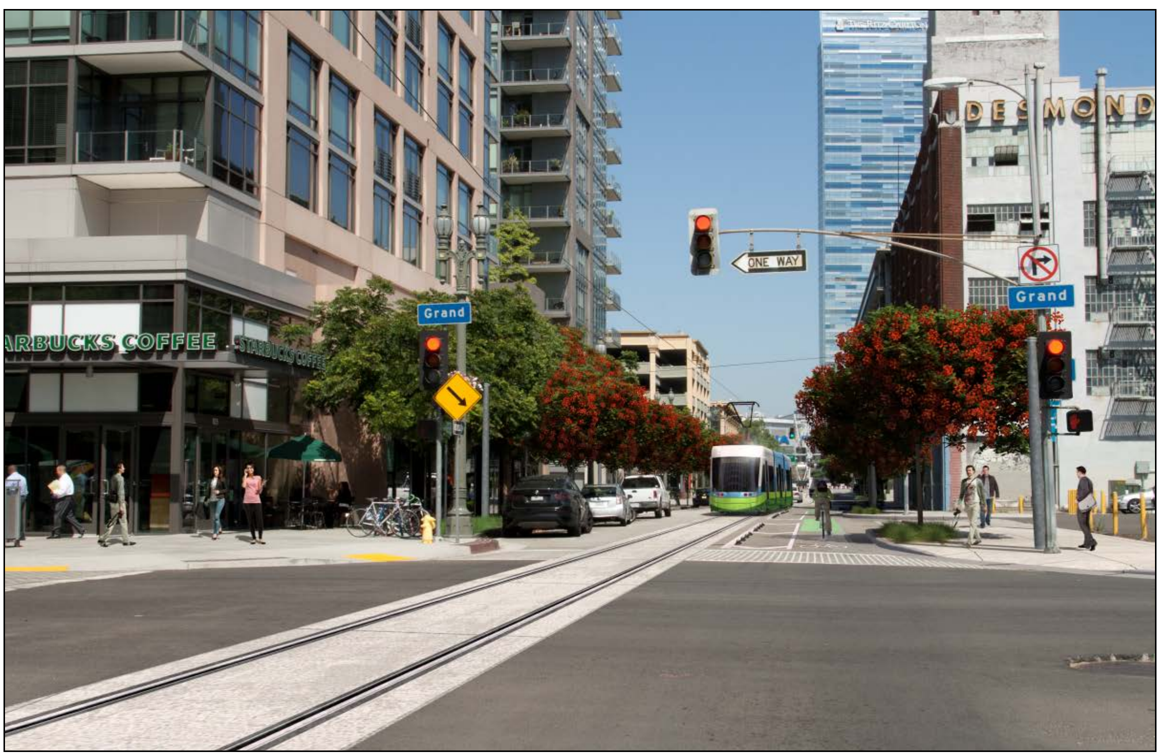


Figure 3.1-15A. Simulated View along 11th Street at Grand Avenue, Looking West



Therefore, based on the discussion of KOPs 1 through 7 above, and as shown in Figures 3.1-9A through 3.1-15A, visual changes associated with the built elements of the proposed streetcar under Alternative 2 would not introduce a significant degree of contrast. Moreover, implementation of Mitigation Measure **MM-AES-O3** would ensure that the OCS poles would be designed and installed in compliance with all applicable design guidelines, policies, and development standards. As a result, OCS poles would be subject to approval and would be consistent with the surrounding design context. Therefore, operational impacts under Alternative 2 would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.

No impact. The proposed streetcar would not propose a zone change to accommodate greater or taller structures than surrounding development or otherwise detract from the existing style or image of the area due to density, height, bulk, setback, signage, or other physical elements. The vertical elements proposed as part of the Project are consistent with surrounding land uses, and implementation of Mitigation Measure **MM-AES-O3** would ensure compliance with the applicable City regulations and standards to ensure that appropriate density, height, bulk, etc. is observed. As a result, no impacts would occur.

The degree to which the project would contribute to the area's aesthetic value.

Less-than-significant impact. Built elements of the proposed Project include the streetcar vehicles, platforms, shelters, catenary poles, and OCS wires. As depicted in Figures 3.1-9A through 3.1-15A, though visible, proposed project elements would be fairly unobtrusive and would not substantially alter the visual quality and/or character of the Project's visual setting. Views throughout the immediate project vicinity would still be of Medium Quality, and maintain their variety in vegetation and color. Similarly, viewsheds throughout the immediate project vicinity would retain their intactness through a combination of well-kept urban features and natural settings, which would continue to be somewhat free of encroaching, manmade elements. The project area would also retain its vividness, as the proposed Project's built elements would preserve the juxtaposition of landscaped features with surrounding elements, such as high rises and multi-story residential buildings. Overall, the project area would remain fairly unified, and the proposed Project would not substantially compromise the visual coherence, line patterns, and overall scenery.

Though viewer exposure and sensitivity would be higher for more accustomed viewer groups (i.e., residences and frequent visitors), given the nature and quality of existing viewsheds and generally constrained sightlines to the visual resources therein, the proposed streetcar would not substantially diminish or alter the aesthetic value throughout the project area. Furthermore, implementation of Mitigation Measure **MM-AES-O3** would ensure that the OCS poles would be approved, designed, and installed in compliance with all applicable design guidelines, policies, and development standards. As a result, operational impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Applicable guidelines and regulations.

Less-than-significant impact. The proposed Project would be completed in conformance with applicable City regulations and standards. Implementation of Mitigation Measure **MM-AES-O3** would help ensure compliance with applicable guidelines and regulations (as described in Section 3.1.1) and minimize visual impacts associated with the OCS. Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Obstruction of Views

The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).

Less-than-significant impact. As discussed in Section 3.1.5.2, primary visual resources throughout the project area include, but are not limited to, the Disney Concert Hall, MOCA, Pershing Square, historic buildings within and around the Broadway Theater and Commercial Historic District, and mature street trees. As depicted in Figures 3.1-9A through 3.1-15A, built features associated with the proposed streetcar would not substantially compromise the nature and/or quality of recognized or valued views and a less than significant impact would occur. In adherence to Mitigation Measure **MM-AES-O3**, project elements would be built in accordance with the applicable standards and guidelines, and would be designed to be minimally apparent and in keeping with the surrounding visual environment. Thus, valued views and views to/from the primary visual resources therein, as represented in KOPs 1 through 7, would be more or less preserved. Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Whether the project affects views from a designated scenic highway, corridor, or parkway.

No impact. No scenic vistas or designated scenic highways, corridors, or parkways have been identified within the project viewshed(s). Therefore, the Project would not affect views from a designated scenic highway, corridor, or parkway, and no impact would occur.

The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).

Less-than-significant impact. As shown in Figures 3.1-9A through 3.1-15A, the proposed streetcar, relative to the existing environment, would generally be minimally apparent and fairly visually unobtrusive. The Project's general degree of view obstruction would be very low given that most of its features would be at, or slightly above, street level. Minor diminishment and/or partial interruption would occur at KOPs 2, 3, 5, 6, and 7. Due to the relative size and position of the OCS wires and poles and the low sensitivity of the primarily affected viewer groups (i.e., street-level viewers such as commuting motorists, pedestrians, sightseers, business employees and patrons with intermittent/incomplete views). The presence of OCS wires and poles would not substantially interfere with informal views to/from the primary visual resources therein, and thus a less than significant impact would result. With regard to residential viewers groups, residents throughout the area mostly reside in multi-story buildings in which the OCS elements would be difficult to detect. Implementation of Mitigation Measure **MM-AES-O3** would ensure that the OCS poles would be approved, designed, and installed in compliance with all applicable design guidelines, policies, and development standards to minimize visual impacts. Therefore, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

Less-than-significant impact. As previously mentioned, KOPs are selected in order to best represent the area' s overall visual quality, character, and aesthetic image as seen by its key viewers and viewer groups, including recognized views available from a length of a public roadway, bike path, or trail. As discussed in Section 3.1.5.2, primary visual resources throughout the project area include, but are not limited to, the Disney Concert Hall, MOCA, Pershing Square, historic buildings within and around the Broadway Theater and Commercial Historic District, and mature street trees. As depicted in Figures 3.1-9A through 3.1-15A, built features associated with the proposed streetcar would not substantially compromise the nature and/or quality of recognized or valued views from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point, and a less-than-significant impact would result. In adherence to Mitigation Measure **MM-AES-O3**, project elements would be built in accordance with the applicable standards and guidelines, and would be designed to be minimally apparent and in keeping with the surrounding visual environment. Thus, valued views and views to/from the primary visual resources therein, as represented in KOPs 1 through 7, would be more or less preserved. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The change in ambient illumination levels as a result of project sources.

Less-than-significant impact. The proposed streetcar would not significantly alter ambient light levels. At present, light is emitted from high-rise buildings; security lighting; illuminated signage; architectural lighting on building façades, in landscaped areas, along pedestrian walkways and plaza areas; and from vehicle headlights. Due to the relatively high volume of existing nighttime light, the light introduced by streetcar headlights would not represent a significant change in ambient illumination levels. Streetcar-associated OCS poles, platforms, and shelters would not significantly alter ambient light levels because all lighting other than vehicle headlights would be installed in accordance with the Los Angeles Municipal Code. As such, it would be directed downward and on site. Therefore, impacts would be less than significant during operation of Alternative 2.

The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.

Less-than-significant impact. The streetcar vehicles would be lighted in a manner that would minimize the potential for spill light effects and would not generate more nighttime light on the streets than would existing downtown buses. Streetcar-associated OCS poles, platforms, and shelters would not result in spillover light impacts on surrounding land uses because all lighting would be installed in accordance with the Los Angeles Municipal Code. As such, it would be directed downward and on site. Therefore, impacts would be less than significant under this alternative.

Shading

Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

Less-than-significant impact. Most of the proposed streetcar features would be at, or slightly above, street level. Streetcar-related platforms, platform shelters, and other visual elements associated with the proposed Project, including OCS poles and wires, would not be of scale or bulk to cast shadows of sufficient size to significantly affect shade-sensitive uses. The potential for the streetcar and its facilities to cast new shadow/shade would be limited and similar to that of existing transportation uses/facilities within the Project's viewshed(s). Thus, impacts related to shadow and shade-sensitive uses would be less than significant under this alternative.

Alternative 3: 7th Street Alternative without the Grand Avenue Extension

Construction Impacts

Less-than-significant impact. Under Alternative 3, project-related impacts associated with construction would be similar to those outlined above under Alternative 2, with one exception. Because Alternative 3 does not include the proposed Grand Avenue Extension, disruptions to visual resources or character would be reduced slightly as this alternative does not include construction activities west of Hill Street (between Hill Street and Grand Avenue) and along Grand Avenue (between 1st and 2nd Streets). Similar to Alternative 2, construction would result in temporary impacts on the visual quality and character throughout the proposed alignment due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help minimize construction-related visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Under Alternative 3, project-related impacts associated with operation would be the same as those outlined above under Alternative 2, with one exception. Because Alternative 3 does not include the proposed Grand Avenue Extension, disruptions to visual resources or character would be reduced slightly as this alternative does not include construction activities west of Hill Street (between Hill Street and Grand Avenue) and along Grand Avenue (between 1st and 2nd Streets). Therefore, operational impacts discussed above would not include impacts on the viewsheds depicted by KOP 1, as a station platform and associated streetcar elements would not be constructed adjacent to the Disney Concert Hall. Again, implementation of Mitigation Measure **MM-AES-O3** would help minimize visual impacts introduced by the OCS poles and wires. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Alternative 4: 9th Street Alternative with the Grand Avenue Extension

Potential impacts associated with this alternative would be the same as Alternative 2 except that impacts associated with the proposed 7th Street alignment would not occur as Alternative 4 proposes the streetcar run along 9th Street.

Construction Impacts

Less-than-significant impact. Under Alternative 4, the same construction-period activities would occur as in Alternative 2. However, as mentioned, this alternative would include a 9th Street route segment in lieu of a route along 7th Street. Due to the presence of fewer early twentieth-century buildings along the 9th Street alignment, the porous streetwall (which refers to one of the boundaries of a street as formed by its buildings), and the presence of large surface parking lots, the potential for temporary, minor impacts on the existing visual quality and character of the corridor would be reduced slightly compared to Alternatives 2 and 3. Within the project viewshed along 9th Street, primary scenic resources include historically and architecturally significant buildings located east of Hope Street, such as the Fashion Institute of Design and Merchandising (FIDM) and its park space, and also early twentieth-century commercial buildings (located between Olive and Broadway). The majority of the buildings are newer and are not considered visual landmarks. Secondary visual resources consist of mature street trees (including the FIDM park space).

Again, construction would result in temporary impacts on the visual quality and character throughout the proposed alignment due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Alternative 4 would include the same mitigation measures as are proposed under Alternatives 2 and 3. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help minimize construction-related visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Operational impacts related to aesthetics are similar to those described above for Alternative 2. Due to the presence of fewer early twentieth-century buildings along the 9th Street alignment, the porous streetwall, and the presence of large surface parking lots, the potential for disruptions of sightlines to visual resources would be reduced slightly compared to Alternatives 2 or 3. Generally, the same impacts would occur under Alternative 4 and Alternative 2, though, the presence of fewer visual resources along 9th Street reduces the overall viewer sensitivity and, therefore, lessens the visual impacts associated with the visual elements introduced by the proposed Project under this alternative. As such, Alternative 2 represents that maximum extent of visual impacts that would occur under the proposed Project's alternatives. As a result, a detailed threshold analysis for this alternative has been omitted for the purposes of this EIR.

As mentioned, Alternative 4 would result in impacts similar to those outlined above under Alternative 2; however, it would not include impacts on the viewsheds depicted by KOP 4, which is located at West 7th Street and Flower Street, looking east. Alternative 4 would still include the same mitigation measures as are proposed under Alternatives 2 and 3. Implementation of Mitigation Measure **MM-AES-O3** would help minimize visual impacts introduced by the OCS poles and wires. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Alternative 5: 9th Street Alternative without the Grand Avenue Extension

Construction Impacts

Less-than-significant impact. Under Alternative 5, project-related impacts would be similar to those outlined above under Alternative 4, with one exception. As Alternative 5 does not include the proposed Grand Avenue Extension, construction-related disruptions to visual resources or character would be reduced slightly, similar to the change between Alternatives 2 and 3. Construction would result in temporary impacts on the visual quality and character throughout the proposed alignment due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light.

Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help minimize construction-related visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Under Alternative 5, project-related impacts would be similar to those occurring under Alternative 4. However, as Alternative 5 does not include the proposed Grand Avenue Extension, disruptions to visual resources or character would be reduced slightly compared to Alternative 4. Operational activities west of Hill Street (between Hill Street and Grand Avenue) and along Grand Avenue (between 1st and 2nd Streets) would not occur, and operational impacts would not include impacts on the viewsheds depicted by KOP 1, as a station platform and associated streetcar elements would not be constructed adjacent to the Disney Concert Hall. Implementation of Mitigation Measure **MM-AES-O3** would help minimize visual impacts introduced by the OCS poles and wires. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Traction Power Substations

The following sections described the potential construction and operational impacts associated with the TPSS units.

Construction Impacts

Less-than-significant impact. The proposed streetcar system would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. Each would be placed at a parking lot or on private property outside the public right-of-way (except for the proposed TPSS location at 2nd Street and Grand Avenue, which may need to occupy space in the public right-of-way). Construction impacts would be essentially the same as discussed above for Alternatives 2 through 5, except that most of the construction activity would occur outside the street right-of-way.

Implementation of Mitigation Measure **MM-AES-O1** would ensure that TPSS facilities be designed in a manner that is appropriate to the design context in which they are proposed and given an architectural treatment that would be consistent with the applicable guidelines and regulations (such as the DDG) regarding size, height, bulk, density, and setback, which is discussed in more detail under *Operational Impacts*. TPSS facilities proposed within the Broadway Theatre and Commercial Historic District would be located in parking lots or behind buildings that are not architectural/historical resources, and, thus, their visibility would be greatly diminished because they would be a minor addition to the existing visual environment. No adverse impacts on historic buildings would occur during construction of the TPSS. Construction would result in temporary impacts on the visual quality and character at the potential site locations due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help minimize construction-related visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Aesthetics

The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.

No impact. The visible built element of the TPSS consists of the approximately 17 feet long by 11 feet wide by 11 feet high equipment housing. As mentioned above, each would be placed at a parking lot or on private property outside the public right-of-way (except for the proposed TPSS location at 2nd Street and Grand Avenue, which may need to occupy space in the public right-of-way). At present, the proposed sites on which the TPSS would be located do not house visual features or elements that substantially contribute to the valued visual character throughout the project alignment. Therefore, introduction of the TPSS would not remove, alter, or demolish existing features or elements that contribute to the visual character throughout the project area. No impacts would occur.

The amount of natural open space to be graded or developed.

No impact. The proposed TPSS site(s) contains no natural open space that would be graded or developed. No impacts would occur.

The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.

No impact. As mentioned, the proposed TPSS site(s) would not be located in a natural open space area(s). No impacts would occur.

The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.

No impact. Generally, due to their relative size and proposed location(s), the TPSS would introduce a very low degree of contrast. Because the proposed sites do not house extant features that represent the area's valued aesthetic image, the degree of contrast introduced by the housing would be negligible because they would be a minor addition to the existing visual environment. No impacts would occur.

The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.

No impact. The proposed TPSS would not propose a zone change to accommodate greater or taller structures than surrounding development or otherwise detract from the existing style or image of the area due to density, height, bulk, setback, signage, or other physical elements. The vertical elements proposed as part of the Project are consistent with surrounding land uses, and implementation of **MM-AES-O1** would ensure compliance with the applicable City regulations and standards to ensure that appropriate density, height, bulk, etc. is observed. As a result, no impacts would occur.

The degree to which the project would contribute to the area's aesthetic value.

Less-than-significant impact. As mentioned, the visible built element of the TPSS consists of the approximately 17 feet long by 11 feet wide by 11 feet high equipment housing. Implementation of Mitigation Measure **MM-AES-O1** would ensure that the TPSS structure would be approved, designed, and installed in compliance with all applicable design guidelines, policies, and development standards. As such, the TPSS would be minimally apparent, unobtrusive, and would not substantially alter the visual quality and/or character of the Project's visual setting. Views throughout the immediate project vicinity would still be of Medium Quality and maintain their vividness, intactness, and unity. Viewer sensitivity for this type of structure for all viewer groups would be low. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Applicable guidelines and regulations.

Less-than-significant impact. The TPSS would be completed in conformance with applicable City regulations and standards. Implementation of Mitigation Measure **MM-AES-O1** would help ensure compliance with applicable guidelines and regulations (as described in Section 3.1.1) and minimize visual impacts associated with TPSS housings. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Obstruction of Views

The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).

Less-than-significant impact. The TPSS would not substantially compromise the nature and/or quality of recognized or valued views due to their relatively small size and proposed location(s). In adherence to Mitigation Measure **MM-AES-O1**, the TPSS would be built in accordance with the applicable standards and guidelines, and would be designed to be minimally apparent and in keeping with the surrounding visual environment. Thus, valued views and views to/from the primary visual resources therein, as represented in KOPs 1 through 7, would be preserved. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Whether the project affects views from a designated scenic highway, corridor, or parkway.

No impact. No scenic vistas or designated scenic highways, corridors, or parkways have been identified within the project viewshed(s).Therefore, the project would not affect views from a designated scenic highway, corridor, or parkway, and no impact would occur.

The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).

Less-than-significant impact. As mentioned, the TPSS would be minimally apparent and unobtrusive. The general degree of obstruction would be very low, due to their relative size and location(s). Viewer sensitivity to this type of installment would be low, and the presence of the TPSS would not would not interfere with informal views to/from the primary visual resources therein. Implementation of Mitigation Measure **MM-AES-O1** would ensure that the TPSS would be approved, designed, and installed in compliance with all applicable design guidelines, policies, and development standards to minimize visual impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

Less-than-significant impact. Built features associated with the proposed TPSS would not substantially compromise the nature and/or quality of recognized or valued views from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point due to their relatively small size and proposed location(s). In adherence to Mitigation Measure **MM-AES-O1**, the TPSS would be built in accordance with the applicable standards and guidelines, and would be designed to be minimally apparent and in keeping with the surrounding visual environment. Thus, valued views and views to/from the primary visual resources therein, as represented in KOPs 1 through 7, would be preserved. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Nighttime Illumination

The change in ambient illumination levels as a result of project sources.

No impact. The proposed TPSS would not alter ambient light levels. At present, light is emitted from high-rise buildings; security lighting; illuminated signage; architectural lighting on building façades, in landscaped areas, along pedestrian walkways and plaza areas; and from vehicle headlights. Due to the relatively high volume of existing nighttime light, and because lighting would not be incorporated into the TPSS housings, it would not represent a change in ambient illumination levels. Therefore, no impacts would occur.

The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.

No impact. No lighting is proposed as a part of the TPSS housings. Therefore, no impacts would occur under this alternative.

Shading

Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

No impact. TPSS housings would not be of scale or bulk to cast shadows of sufficient size to significantly affect shade-sensitive uses. No impacts would occur.

Maintenance and Storage Facilities

This section discusses the potential construction and operational impacts associated with each of the four candidate MSF sites currently being considered. Generally, unless otherwise noted, impacts on *Aesthetics*, *Obstruction of Views*, *Nighttime Illumination* and *Shading* associated with the MSFs at Hill Street and 5th Street, 11th Street and Olive Street (West), and 11th Street and Olive Street (East) would be similar to those described below for the MSF at Broadway and 2nd Street.

Broadway and 2nd Street

Construction Impacts

Less-than-significant impact. Construction of the MSF would consist of an enclosed building and an outdoor area. The facility would have sufficient storage capacity with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area would also be provided. A maintenance building for a system of the size of the proposed Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy and Environmental Design (LEED) certification requirements. Streetcars would access the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning and secure storage of streetcar vehicles (see Section 2.6.3.3 in Chapter 2, *Project Description*).

Acquisition of property for a MSF would probably not require full acquisition of all affected parcels; however, because a site design and configuration has not yet been completed, this analysis assumes full acquisition would be needed.

Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs be designed in a manner that is appropriate to the design context in which they are proposed; be given an architectural treatment that would be consistent with the applicable guidelines and regulations (such as the DDG) regarding size, height, bulk, density, and setback; and direct lighting necessary for overnight cleaning and other facility operations on site so as to reduce spill effects, which is discussed in more detail under *Operational Impacts*.

As with the other proposed project elements, project-related construction of the MSFs would result in temporary impacts on the visual quality and character within the immediate vicinity of Broadway and 2nd Streets due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Construction of the MSF may involve a greater level of disruption on a temporary basis than the tracks or platforms for streetcar stops due to greater excavation depths (up to 10 feet) than other proposed project elements. Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help reduce construction-related visual impacts and establish a staging area designed to minimize potential impacts on adjacent sensitive uses, including residences. These mitigation measures would minimize views of stockpiled materials and idle construction equipment in staging areas; reduce visual clutter and disorder; and require appropriate screening materials, daily visual inspections, and the removal of debris and graffiti. These measures would also require that nighttime construction lighting be directed downward and on site to minimize spill impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Aesthetics

The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed altered, or demolished.

Less-than-significant impact. The MSF at Broadway and 2nd Street would replace an existing parking lot and building. Through implementation of Mitigation Measure **MM-AES-O2**, its design would be approved and installed in compliance with all applicable design guidelines, policies, and development standards. Because it would replace an existing parking lot, the proposed MSF site under this option would not materially alter the visual features or elements that define the visual character of the site. Similarly, removal of the existing business structure on the site would also not alter the visual character of the area. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The amount of natural open space to be graded or developed.

No impact. The proposed MSF site contains no natural open space that would be graded or developed. No impacts would occur.

The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.

No impact. The proposed MSF site would not be located in a natural open space area(s). No impacts would occur.

The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.

Less-than-significant impact. Because the proposed project site does not contain features that represent the area's valued aesthetic image and neighboring buildings (as described in more detail below) are not considered to be visual resources, the degree of contrast introduced by the MSF would be moderately low, and the impact would be less than significant. Implementation of Mitigation Measure **MM-AES-O2** would ensure that the MSF would be built in accordance with the applicable standards and guidelines, and would be designed to be compatible with the surrounding visual environment. Therefore, the proposed MSF would not introduce a substantial degree of contrast between proposed features and existing features that represent the area's valued aesthetic image. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.

Less-than-significant impact. Installation of the MSF would not propose a zone change to accommodate greater or taller structures than surrounding development or otherwise detract from the existing style or image of the area due to density, height, bulk, setback, signage, or other physical elements. The vertical elements proposed as a part of the MSF (the MSF would be two or three stories high) are consistent with surrounding land uses, and a less-than-significant impact would result. Implementation of Mitigation Measure **MM-AES-O2** would ensure compliance with the applicable City regulations and standards to ensure that appropriate density, height, bulk, etc. is observed. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The degree to which the project would contribute to the area's aesthetic value.

Less-than-significant impact. Under this option, the MSF would be located in an existing parking lot between 2nd and 3rd Streets and Broadway and Hill Streets. The site would abut La Catedral De Los Angeles Wedding Chapel, the Office of Child Care, and several other institutional and retail-oriented establishments such as the Max Electronics Center, the Learning Rights Law Center, and Civic Center Studios, among others. The area around the site is a built-up urban environment and contains a variety of land uses, including residential. South of 3rd Street are popular attractions such the Grand Central Market and the Bradbury Building. Within the vicinity of the proposed site, the buildings are rectilinear in form and there is a variety of architectural cladding materials and coloration (e.g., tan, gray, off-white) that create visual interest. There is also a large quantity of business signs with various sign treatments, placements, colors, and patterns as well as street and traffic signal lighting. The gray roadway and sidewalk paving are dominant in terms of line, color, and texture.

The visible, built elements of the MSF would include an enclosed building approximately two to three stories tall with an outdoor area for maintenance, storage, and overnight cleaning of streetcar vehicles. Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs are designed in a manner that is appropriate to the design context in which they are proposed and are given an architectural treatment that would be consistent with the applicable guidelines and regulations (such as the DDG). It would be situated in a built up urban environment with limited views to/from significant visual resources, as discussed in Section 3.1.5.2. Therefore, views throughout the immediate vicinity would still be of Low to Medium Quality, and maintain their vividness, intactness, and unity. Viewer sensitivity for this type of structure for all viewer groups would be low. Nearby residents are accustomed to the dynamic, urban environment in downtown Los Angeles and generally reside in multi-story buildings with viewsheds that would not be impacted by visual changes at or near street-level. Therefore, although the introduction of an MSF at this site would alter the existing viewsheds within the immediate vicinity, it would not substantially degrade the overall quality and character throughout the area. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Applicable guidelines and regulations.

Less-than-significant impact. The MSF would be completed in conformance with applicable City regulations and standards, and the impact would be less than significant. Implementation of Mitigation Measure **MM-AES-O2** would help ensure compliance with applicable guidelines and regulations (as described in Section 3.1.1) and minimize visual impacts associated with the facility. Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Obstruction of Views

The nature and quality of recognized or valued views (e.g., natural topography, settings, human-made or natural features of visual interest, resources such as mountains or the ocean).

Less-than-significant impact. As discussed above regarding the MSF's overall contribution to the area's aesthetic value, the MSF at this site would be introduced into a built up urban environment with limited views to/from significant visual resources. Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs are approved and designed in a manner that is appropriate to the design context in which they are proposed, and consistent with the applicable guidelines and regulations. Again, although the introduction of an MSF at this site would alter the nature and quality of existing views, it would not substantially degrade the overall visual quality and character in the immediate vicinity. Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Whether the project affects views from a designated scenic highway, corridor, or parkway.

No impact. No scenic vistas or designated scenic highways, corridors, or parkways have been identified within the project viewshed(s).Therefore, the Project would not affect views from a designated scenic highway, corridor, or parkway, and no impact would occur.

The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).

Less-than-significant impact. As mentioned, through implementation of **MM-AES-O2**, the MSF would be designed to be in keeping with the existing visual environment. Though introduction of the MSF would alter the existing viewshed, it would be installed in a built up urban environment with limited views to/from significant visual resources, depending on the position, distance, and angle of the viewer. As such, obstruction of street-level views near the proposed MSF site would not be considered a significant impact as it would not create blockage of sightlines to visual resources in the area. Viewer sensitivity for this type of structure for all viewer groups would be low. Nearby residents are accustomed to the dynamic, urban environment in downtown Los Angeles and generally reside in multi-story buildings with viewsheds that would not be impacted by visual changes at or near street-level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

Less-than-significant impact. Built features associated with the proposed MSF would not substantially compromise the nature and/or quality of recognized or valued views from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point. As the MSF proposes to replace an existing parking lot and building in a built up urban environment with limited views to/from significant visual resources, a less-than-significant impact would result. In adherence to Mitigation Measure **MM-AES-O2**, the MSF would be built in accordance with the applicable standards and guidelines, and would be designed to be in keeping with the surrounding visual environment in such a way that views from nearby public roadways would be more or less maintained. Thus, valued views and views to/from the primary visual resources therein, as represented in KOPs 1 through 7, would be preserved. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Nighttime Illumination

The change in ambient illumination levels as a result of project sources.

Less-than-significant impact. At present, light in the immediate vicinity of the proposed MSF site is emitted from neighboring multi-story buildings, security lighting, illuminated signage, along pedestrian walkways/sidewalks, and from vehicle headlights. The addition of nighttime lighting to the two- or three-story facility, which would replace an existing parking lot, would introduce new light into the project area. However, due to the relatively high volume of existing nighttime light in the immediate vicinity, the current existence of nighttime illumination at the proposed site, and highly urbanized nature of the proposed site, onsite lighting at the MSF for overnight vehicle cleaning and security purposes would not represent a significant change in ambient illumination levels, and a less-than-significant impact would result. Implementation of Mitigation Measure **MM-AES-O2** would ensure that the MSF would be installed in accordance with the Los Angeles Municipal Code and that lighting would be directed downward and on site. Therefore, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.

Less-than-significant impact. Nighttime light cast from the proposed MSF would be primarily for security purposes and vehicle cleaning. The addition of nighttime lighting to the two- or three-story facility, which would replace an existing parking lot, would introduce new light into the project area. However, as mentioned, due to the existing nighttime illumination levels in the immediate vicinity, the current existence of nighttime illumination at the proposed site, and highly urbanized nature of the proposed site, the introduction of new light as a result of the MSF would not be considered substantial and viewer sensitivity would be low. In addition, the headlights from the streetcars would not affect the surrounding residences when turning into the MSF because the closest residences to the MSF sites would be either above the first floor or at a substantial distance from the MSF site; therefore, a less-than-significant impact would result. In adherence to Mitigation Measure **MM-AES-O2**, nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Shading

Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

No impact. The MSF buildings would not exceed 30 feet in height and, therefore, would not have the potential to produce shadows that could significantly affect shade-sensitive viewers. No impacts would occur.

Hill Street and 5th Street

Construction Impacts

Less-than-significant impact. Under the MSF at Hill and 5th Street, construction impacts would be similar to those described above for the MSF at Broadway and 2nd Street. As with the other proposed project elements, project-related construction of the MSFs would result in temporary impacts on the visual quality and character within the immediate vicinity of Hill and 5th Streets due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Although construction activities associated with the MSF would result in a temporary change and minor impacts on the visual quality and character in the immediate vicinity because construction equipment, staging areas, and exposed excavation areas would be visible to nearby viewers, including residents, these activities would not have a long-term impact on the overall aesthetics throughout the immediate vicinity. Residential viewer groups and regular visitors would be more sensitive to this type of temporary visual intrusion than recreationists or local commuters.

Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help reduce construction-related visual impacts and establishment of a staging area designed to minimize potential impacts on adjacent sensitive uses, including residences. These mitigation measures would minimize views of stockpiled materials and idle construction equipment in staging areas; reduce visual clutter and disorder; and require appropriate screening materials, daily visual inspections, and the removal of debris and graffiti. These measures would also require that nighttime construction lighting be directed downward and on site to minimize spill impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Generally, unless otherwise noted, operational impacts associated with the MSF at Hill and 5th Street would be similar to those described above for the MSF at Broadway and 2nd Street. Under this option, however, the MSF would be located in an existing parking lot between 4th and 5th Streets and Hill and Olive Streets. The site would abut Metro 417 Apartments and the Title Guarantee and Trust Company Building. The area around the site is a built-up urban environment and contains a variety of land uses, including residences, restaurants, retail outlets, offices, and hotels. Being situated closer to Los Angeles's Central Business District, the proposed site is in proximity to various skyscrapers and high-rise buildings that are afforded views of the lot, such as the Southern California Gas Company building and the Millennium Biltmore Hotel, among others. However, from these views, the proposed site comprises a negligible portion of the existing viewsheds as sightlines from high-rise buildings downtown offer more panoramic views of the downtown area and its buildings, as well as to the foothills of the Santa Monica Mountains and beyond. Pershing Square is one block southwest, between 5th and 6th Streets and Hill and Olive Streets.

Within the vicinity of the proposed site at Hill and 5th Street, the visual elements are highly varied in terms of building architectural design, height, and exterior cladding materials (e.g., glass skin, brick, concrete, terra cotta). There is a moderately dense clustering of trees and understory landscaping along the west side of Hill Street, and Pershing Square, with its curvilinear form, evergreen color, and texture, provides a significant and vibrant contrasting component to the strongly individualized building forms. The rectilinear forms, architectural cladding materials, and coloration (e.g., tan, brown, gray, green-blue, off-white) create moderate visual interest and provide Medium to High Quality views, depending on the position and angle of the viewer.

As mentioned, under this option, the proposed changes associated with operation of the MSF would be similar to those described above for the Broadway and 2nd Street location. In this case, the MSF would replace an existing parking lot in a built-up urban environment with a variety of land uses. The visible, built elements of the MSF would include an enclosed building approximately two to three stories tall with an outdoor area for maintenance, storage, and overnight cleaning of streetcar vehicles. Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs be approved and designed in a manner that is appropriate to the design context in which they are proposed, and given an architectural treatment that would be consistent with the applicable guidelines and regulations and their surrounding environment. Therefore, although the introduction of an MSF at this site would alter the existing viewsheds within the immediate vicinity, it would not substantially degrade the overall quality and character throughout the area. Views throughout the immediate vicinity would still be of Medium to High Quality, and maintain their vividness, intactness, and unity. Obstruction of street-level views near the proposed MSF site would not be considered a significant impact as the MSF would not create blockage of sightlines to visual resources in the area, which are widely available in the immediate vicinity were the viewer to adjust their position and angle.

Viewer sensitivity for this type of structure for all viewer groups would be low. Nearby residents are accustomed to the dynamic, urban environment in downtown Los Angeles and generally reside in multi-story buildings with viewsheds that would not be impacted by visual changes at or near street-level. Therefore, operational impacts associated with the proposed MSF for *Aesthetics* and *Obstruction of Views* are considered to be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational impacts related to *Nighttime Illumination* and *Shading* would be the same under this MSF option as they would at Broadway and 2nd Street. Due to the existing nighttime illumination levels in the immediate vicinity, the current existence of nighttime illumination at the proposed site, and highly urbanized nature of the proposed site, the introduction of new light as a result of the MSF would not be considered substantial and viewer sensitivity would be low. In adherence to Mitigation Measure **MM-AES-O2**, nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. As such, MSF lighting would be installed in accordance with the applicable guidelines and regulations, and impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation. Additionally, the MSF buildings would not exceed 30 feet in height and, therefore, would not have the potential to produce shadows that could significantly affect shade-sensitive viewers. No *Shading* impacts would occur.

11th Street and Olive Street (West)

Construction Impacts

Less-than-significant impact. Under the MSF at 11th Street and Olive Street (West), construction impacts would be similar to those described above for the MSF at Broadway and 2nd Street. As with the other proposed project elements, project-related construction of the MSFs would result in temporary impacts on the visual quality and character within the immediate vicinity of 11th and Olive Streets due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Although construction activities associated with the MSF would result in a temporary change and minor impacts on the visual quality and character in the immediate vicinity because construction equipment, staging areas, and exposed excavation areas would be visible to nearby viewers, including residents, these activities would not have a long-term impact on the overall aesthetics throughout the immediate vicinity. Residential viewer groups and regular visitors would be more sensitive to this type of temporary visual intrusion than recreationists or local commuters.

Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help reduce construction-related visual impacts and establish a staging area designed to minimize potential impacts on adjacent sensitive uses, including residences. These mitigation measures would minimize views of stockpiled materials and idle construction equipment in staging areas; reduce visual clutter and disorder; and require appropriate screening materials, daily visual inspections, and the removal of debris and graffiti. These measures would also require that nighttime construction lighting be directed downward and on site to minimize spill impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Generally, unless otherwise noted, operational impacts associated with the MSF at 11th Street and Olive Street (West) would be similar to those described above for the MSF at Broadway and 2nd Street. Under this option, the MSF would be located in an existing parking lot between 11th and 12th Streets and Olive and Grand Streets. The site would abut two parcels, which contain various entities, including a restaurant (facing Olive Street, away from the proposed MSF site) and an insurance broker. The area around the site is a built up urban environment and contains a variety of land uses. The *Herald-Examiner* building is an architectural/historical landmark and an important visual resource along both Broadway and 11th Streets.

Within the vicinity of the proposed site, the streetscape is characterized by highly varied architectural forms, with divergent building heights, architectural cladding, textures, and coloration. Large high-rise buildings, such as the Ritz Carlton and Elleven Lofts can be seen in the area due to the presence of many low- and mid-rise buildings. The curvilinear form of the yew street trees and their evergreen color and texture provide contrast to the architectural forms. A range of colors and patterns can be seen in this area and provide partially constrained Medium to High Quality views, depending on the position and angle of the viewer.

As mentioned, under this option, the proposed changes associated with operation of the MSF would be similar to those described above for the Broadway and 2nd Street location. In this case, the MSF would also replace an existing parking lot in a built-up urban environment with a variety of land uses. The visible, built elements of the MSF would include an enclosed building approximately two to three stories tall with an outdoor area for maintenance, storage, and overnight cleaning of streetcar vehicles. Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs be approved and designed in a manner that is appropriate to the design context in which they are proposed, and given an architectural treatment that would be consistent with the applicable guidelines and regulations and their surrounding environment. Therefore, although the introduction of an MSF at this site would alter the existing viewsheds within the immediate vicinity, it would not substantially degrade the overall quality and character throughout the area. Views throughout the immediate vicinity would still be of Medium to High Quality, and maintain their vividness, intactness, and unity. Obstruction of street-level views near the proposed MSF site would not be considered a significant impact as the MSF would not create blockage of sightlines to visual resources in the area, which are widely available in the immediate vicinity were the viewer to adjust their position and angle.

Viewer sensitivity for this type of structure for all viewer groups would be low. Nearby residents are accustomed to the dynamic, urban environment in downtown Los Angeles and generally reside in multi-story buildings with viewsheds that would not be impacted by visual changes at or near street-level. Therefore, operational impacts associated with the proposed MSF for *Aesthetics* and *Obstruction of Views* are considered to be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational impacts related to *Nighttime Illumination* and *Shading* would be the same under this MSF option as they would at Broadway and 2nd Street. Due to the existing nighttime illumination levels in the immediate vicinity, the current existence of nighttime illumination at the proposed site, and highly urbanized nature of the proposed site, the introduction of new light as a result of the MSF would not be considered substantial and viewer sensitivity would be low. In adherence to Mitigation Measure **MM-AES-O2**, nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. As such, MSF lighting would be installed in accordance with the applicable guidelines and regulations, and impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation. Additionally, the MSF buildings would not exceed 30 feet in height and, therefore, would not have the potential to produce shadows that could significantly affect shade-sensitive viewers. No *Shading* impacts would occur.

11th Street and Olive Street (East)

Construction Impacts

Less-than-significant impact. Under the MSF at 11th Street and Olive Street (East), construction impacts would be similar to those described above for the MSF at Broadway and 2nd Street. As with the other proposed project elements, project-related construction of the MSFs would result in temporary impacts on the visual quality and character within the immediate vicinity of 11th and Olive Streets due to general construction activities and the presence of construction equipment/materials. No major construction-related equipment or structures would cast large shadows, and lighting for nighttime construction would be directed downward and on site to minimize spill light. Although construction activities associated with the MSF would result in a temporary change and minor impacts on the visual quality and character in the immediate vicinity because construction equipment, staging areas, and exposed excavation areas would be visible to nearby viewers, including residents, these activities would not have a long-term impact on the overall aesthetics throughout the immediate vicinity. Residential viewer groups and regular visitors would be more sensitive to this type of temporary visual intrusion than recreationists or local commuters.

Implementation of Mitigation Measures **MM-AES-C1** through **MM-AES-C3** would help reduce construction-related visual impacts and establish a staging area designed to minimize potential impacts on adjacent sensitive uses, including residences. These mitigation measures would minimize views of stockpiled materials and idle construction equipment in staging areas, reduce visual clutter and disorder, and require appropriate screening materials, daily visual inspections, and the removal of debris and graffiti. These measures would also require that nighttime construction lighting be directed downward and on site to minimize spill impacts. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Less-than-significant impact. Generally, unless otherwise noted, operational impacts associated with the MSF at 11th Street and Olive Street (East) would be similar to those described above for the MSF at Broadway and 2nd Street. Under this option, the MSF would be located in an existing parking lot south of 11th Street between Olive Street and Midway Place. The site would abut the 32-story AT&T Center, a building for lease on the southwest corner of the intersection of 11th Street and Hill Street, and various entities that are adjacent to the southeast corner of the existing parking lot, such as Bank of America and the west building of the City of Los Angeles Department of Public Works facility at 1149 S. Broadway. The area around the site is a built up urban environment and contains a variety of land uses. The *Herald-Examiner* building is an architectural/historical landmark and an important visual resource along both Broadway and 11th Streets.

Within the vicinity of the proposed site, the streetscape is characterized by highly varied architectural forms, with divergent building heights, architectural cladding, textures, and coloration. Large high-rise buildings, such as the AT&T Center, Ritz Carlton, and Elleven Lofts can be seen in the area due to the presence of many low- and mid-rise buildings. The curvilinear form of the yew street trees and their evergreen color and texture provide contrast to the architectural forms. A range of colors and patterns can be seen in this area and provide partially constrained Medium to High Quality views, depending on the position and angle of the viewer.

As mentioned, under this option, the proposed changes associated with operation of the MSF would be similar to those described above for the Broadway and 2nd Street location. In this case, the MSF would also replace an existing parking lot in a built-up urban environment with a variety of land uses. The visible, built elements of the MSF would include an enclosed building approximately two- to three-stories tall with an outdoor area for maintenance, storage, and overnight cleaning of streetcar vehicles. Implementation of Mitigation Measure **MM-AES-O2** would ensure that MSFs be approved and designed in a manner that is appropriate to the design context in which they are proposed, and given an architectural treatment that would be consistent with the applicable guidelines and regulations and their surrounding environment. Therefore, although the introduction of an MSF at this site would alter the existing viewsheds within the immediate vicinity, it would not substantially degrade the overall quality and character throughout the area. Views throughout the immediate vicinity would still be of Medium to High Quality, and maintain their vividness, intactness, and unity. Obstruction of street-level views near the proposed MSF site would not be considered a significant impact as the MSF would not create blockage of sightlines to visual resources in the area, which are widely available in the immediate vicinity were the viewer to adjust their position and angle.

Viewer sensitivity for this type of structure for all viewer groups would be low. Nearby residents are accustomed to the dynamic, urban environment in downtown Los Angeles and generally reside in multi-story buildings with viewsheds that would not be impacted by visual changes at or near street-level. Therefore, operational impacts associated with the proposed MSF for *Aesthetics* and *Obstruction of Views* are considered to be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational impacts related to *Nighttime Illumination* and *Shading* would be the same under this MSF option as they would at Broadway and 2nd Street. Due to the existing nighttime illumination levels in the immediate vicinity, the current existence of nighttime illumination at the proposed site, and highly urbanized nature of the proposed site, the introduction of new light as a result of the MSF would not be considered substantial and viewer sensitivity would be low. In adherence to Mitigation Measure **MM-AES-O2**, nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. As such, MSF lighting would be installed in accordance with the applicable guidelines and regulations, and impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation. Additionally, the MSF buildings would not exceed 30 feet in height and, therefore, would not have the potential to produce shadows that could significantly affect shade-sensitive viewers. No *Shading* impacts would occur.

3.1.7 Mitigation Measures

No significant aesthetics or visual construction or operation impacts are anticipated for any of the build alternatives. However, in an effort to reduce impacts as much as practicable, several mitigation measures have been proposed for incorporation into the Project to ensure that it is built with sensitivity to the visual environment. These measures are described below.

3.1.7.1 Construction Period

MM-AES-C1: Construction Staging/Stockpiled Materials and Equipment. Under the direction of the LABOE, the construction contractor shall be the responsible party for providing temporary construction fencing along the periphery of active construction areas to screen as much of the construction activity as possible from view at the street level.

To minimize views of stockpiled materials and idled construction equipment in staging areas and to reduce visual clutter and disorder, consistent with Bureau of Engineering Master Specification Environmental Control Measures, project construction staging areas shall be enclosed or screened from view at the street level with appropriate screening materials. The contractor shall provide daily visual inspections to ensure that the immediate surroundings of construction staging areas are free from construction-related clutter and graffiti and maintain the areas in a clean and orderly manner throughout the construction period. Graffiti shall be promptly painted over, masked out, or cleaned off. Routine sidewalk and window washing to remove dust generated by construction shall be scheduled weekly. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contract Administration Bureau Construction Inspector.

MM-AES-C2: Nighttime Construction Activities. Should construction activities with associated lighting occur during nighttime, the City shall ensure that lighting will be directed away from surrounding sensitive land uses and toward the specific location intended for illumination. Lighting associated with construction activities and security purposes shall be shielded to minimize the production of glare and spill light around sensitive land uses in the surrounding area. LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-AES-C3: **Tree Removal/Relocation**. Should mature trees, as well as younger trees (with trunk diameters of 5 inches or less) be trimmed or removed, the proposed Project would comply with the *City of Los Angeles Tree Preservation Ordinance* and *Tree Preservation Policy*. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. No protected trees were identified throughout the proposed alignment and at the potential MSF siting locations. Replacement trees would be placed as near their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The Project's compliance with the *City of Los Angeles Tree Preservation Ordinance* and *Tree Preservation Policy* would ensure that any street trees slated for removal would be planted at or near their original locations at 2:1 ratios. Removal or relocation of protected trees, under the City's *Tree Preservation Ordinance*, requires a permit from the Board of Public Works. A protected tree report must be submitted to the Board of Public Works to apply for a tree removal permit. Before a Special Habitat Value tree, as defined by the City's Tree *Preservation Policy*, is pruned, damaged, relocated, or removed, recommendations from Department of Recreation Parks staff arborists must be obtained. The Forestry Arborist makes a recommendation to the General Manager for removal. The General Manager or designee must make the final approval before the tree(s) can be removed.

3.1.7.2 Operational Period

MM-AES-O1: Design of Traction Power Substation Structures. The City of Los Angeles shall ensure that all TPSS structures would be designed to minimize their visual presence. Where site and design allow, the TPSS structures shall incorporate design and location features, such as the minimization of the size of the structures, setbacks from adjoining street frontages, screening, and/or architectural treatments that are appropriate to the design setting where visible from the public right-of-way at street level. All TPSS structures shall be designed and built to satisfy the established final design requirements and in compliance with all applicable design guidelines, policies, and development standards, including required Public Benefit performance measures, if necessary. Should a TPSS be located within the public right-of-way, it shall be designed in conformance with the Los Angeles Above-Ground Facility regulations contained in Section 62.08 of the LAMC. LABOE shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-AES-O2: Maintenance Storage Facility Design and Operational Lighting. The City of Los Angeles shall ensure that the MSF site plan, building treatments and architecture would be appropriate in scale, proportion, and detail with appropriate use of material, texture, articulation, and color in consideration of the surrounding design context. The aesthetic treatment shall be designed and built in compliance with all applicable design guidelines, policies, and development standards. Light associated with the MSF shall be properly controlled and directed on site in a manner that would minimize the potential for spill light. The Project would adhere to the requirements of LAMC Section 14.00 in all respects and will follow all applicable procedures. All applicable performance standards or alternative compliance measures will be addressed and all procedures for review and approval will be followed. LABOE shall ensure the carrying out of the mitigation measure.

MM-AES-O3: Overhead Contact System Poles. The City of Los Angeles shall ensure that design and installation of the OCS poles will be consistent with the surrounding design context. OCS poles shall be designed and installed in compliance with all applicable design guidelines, policies, and development standards. LABOE shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.1.8 Significant Unavoidable Adverse Impacts

No significant and unavoidable impacts would occur under any of the build alternatives.

3.1.9 Cumulative Impacts

As shown in Section 2.10 of Chapter 2, *Project Description*, there are many projects currently underway or planned in the vicinity of the Project; however, projects that could contribute to a cumulative visual impact are limited to those within the sightlines of the project alignment under the build alternatives. Within the densely developed context of downtown, the area for cumulative impacts would consist of a viewshed along the streets that comprise the 3.8-mile project alignment. The area for consideration of cumulative visual impacts would also extend out laterally from the alignment to the limits of sightlines, typically a maximum distance of 0.5 mile, often much shorter, where topographic features, freeway configurations, or building placements do not further reduce sightline distances.

Development proposed as part of the related projects calls for the rehabilitation of existing buildings and development of vacant land (e.g., typically land that is presently improved as surface parking lots). Such development would be subject to design regulations and policies intended to protect visual resources and promote high-quality, aesthetically attractive new development. Among the related projects, almost half call for the construction of new buildings (e.g., the Olympic and Hill mixed-use project, the Wilshire Grand hotel/office/retail project, the Metropolis mixed-use project, etc.), generally on existing surface parking lots. As stated above, such projects would conform to the design policies governing downtown development, which are aimed at promoting aesthetically pleasing architectural design and streetscape features (e.g., the *Citywide Design Guidelines, Downtown Design Guide,* HDLADG). In addition to the various sets of applicable design policies, all such new development would also be subject to a formal City Planning Department design review process.

Several related projects call for the rehabilitation of existing buildings (e.g., the Hall of Justice, *Herald Examiner* offices and the related printing plant property at 1115 S. Hill Street, the Embassy Towers, etc.) and would refurbish buildings by preserving key architectural design elements and replacing obsolete, non-operational building infrastructure. As such, the rehabilitation projects are expected to have positive effects on aesthetics within the project viewshed.

Of the remaining related projects, two are streetscape improvement projects that have been referenced previously in this section (the Broadway Streetscape Master Plan and the Figueroa Corridor Streetscape Project); the other is the Regional Connector Project—a public transit improvement project that calls for the construction of a 1.9-mile underground light rail system, featuring at least three new stations that would connect the Blue, Gold, and Exposition Lines. The Regional Connector Project is a tunneling project with a very small number of aboveground associated train station facilities. Because the majority of Regional Connector construction work would take place within the street right-of-way, similar to other public works projects that have occurred on a routine basis within the public right-of-way downtown, and because nearly all project features, with the exception of train station entrances, would be underground, views of architectural/historic resources would not be adversely affected. Neither construction equipment nor screened construction areas, where present, would preclude views of visual resources when looking across or around the perimeters of the barriers. In addition, such construction areas would be screened and maintained in clean, graffiti-free condition to further minimize the effect of project construction on nearby scenic resources.

The two streetscape projects call for improved pedestrian, bicycle, and public transit circulation; enhanced sidewalk and crosswalk treatments; design-coordinated and setting-appropriate wayfinding signage; and the installation of trees and ground-level plantings as well as the preservation of existing character-identifying design features. The primary effect of these projects would be to create more unified streetscapes along Figueroa Street, 11th Street, and Broadway. The effect is expected to be positive.

None of the build alternatives would result in effects that would be cumulatively significant when combined with other related projects in downtown Los Angeles. Similarly, visual changes associated with the build alternatives would not result in a cumulatively considerable contribution to a significant cumulative impact. No scenic vistas or scenic corridors have been identified within the project viewshed, views within the viewshed are of medium visual quality, and views of architecturally or historically significant individual buildings— the primary visual resource type within the viewshed—would be preserved. Building placements, and in some instances, topography (as in locations on and adjoining Bunker Hill) block many views across downtown and serve to isolate views acquired in one portion of downtown from other portions of downtown, and views in one portion of a design district from one another. In addition, outside the Historic Core—where there is a significant concentration of architecturally and historically significant buildings and other objects (e.g., certain special sidewalk treatments along Broadway, historic streetlight bases)—the diversity in architectural treatments within most portions of downtown makes it a fairly forgiving and flexible urban design context in which to incorporate new public transit infrastructure and streetscape design elements.

Within the Historic Core, specific design guidelines, including the *Broadway Streetscape Master Plan* and *Historic Downtown Los Angeles Design Guidelines*, would ensure that all improvements are designed in a manner that would be consistent with the design setting. The majority of the design features proposed would occur slightly above, at, or below street level and incorporate features (benches, poles, and limited signage) that would not block views of visual resources or cast significant shadows that would have the potential to affect shade sensitive viewers. Other informal views that can be acquired would typically be acquired by less-sensitive viewing groups (e.g., office workers, pedestrians who are shoppers or downtown on business, and commuters), who constitute a majority of the viewers present within the project viewshed. Such viewers are considered to be relatively tolerant of design changes within the viewshed.

Visual and scenic resources are limited to groupings of architecturally and historically significant buildings within the Historic Core, other individual buildings outside the Historic Core, and other design elements of secondary importance, such as landscape features, including formally designed landscapes (e.g., Pershing Square, Civic Center) and mature street trees. As previously stated, no formal scenic vistas or scenic corridors have been identified or designated within the viewshed. Compliance with the *City of Los Angeles Tree Preservation Ordinance* and *Tree Preservation Policy* would ensure that trees slated for removal would be planted at or near their original locations at a 2:1 ratio. Therefore, the Project, in conjunction with related projects, would not have a detrimental effect on scenic or visual resources, nor substantially degrade existing visual character or quality.

Project components under the 7th Street or 9th Street Alternatives would not have the potential to result in significant shade/shadow impacts on shade-sensitive viewers because they do not have shade/shadow-casting characteristics (height, bulk) that would adversely affect shade/shadow-sensitive viewers. The MSF, for example, would not have an envelope exceeding 30 feet in height and would not have the potential to affect shade-sensitive viewers.

With respect to light, as previously discussed, existing ambient light levels in the Project's viewshed include numerous sources of light, including, but not limited to, architectural lighting on building facades, in landscaped areas, along pedestrian walkways and plazas, vehicle headlights, illuminated signs, streetlights. Major sources of ambient light include LA Live and Staples Center, Disney Concert Hall, and others. Operation of the Project would not significantly alter ambient light levels or result in spill light impacts on surrounding land uses. It is possible that the related projects in close proximity to the Project could add nighttime light to the ambient light levels to the area. However, the Project's contribution to the cumulative impact on ambient light would be less than significant because its lighting would be designed in accordance with the Los Angeles Municipal Code.

Power for the streetcar system would be provided by a traction power system featuring TPSS and an OCS. As discussed in Chapter 2, there are two potential configurations for the OCS wires. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Poles would be approximately 25 to 30 feet tall and are typically installed at intervals of about 80 to 120 feet. Wire heights typically range between approximately 18 and 19 feet. Catenary poles could be designed to incorporate elements of decorative streetlights or to meet design standards for designated streetscapes. Historically, streetcars operated along many of the streets within the viewshed, utilizing a system of poles and overhead wires that was far more extensive than what is proposed. Also, because the proposed features would be consistent with all design policies governing downtown design districts and would confirm to Public Benefit project requirements, the Project is not expected to result in cumulatively significant incremental impacts on visual resources, or on existing visual character and quality.

Project features proposed consist of elements at or near street level and, accordingly, do not have the potential to substantially alter views of visual resources. Proposed buildings features, such as the MSF and TPSS buildings, would be designed to be compatible with their design settings and would not possess either the massing or height required to cast shade/shadow on shade-sensitive viewing groups. Therefore, when considered along with other related projects, the Project is not expected to contribute to a cumulatively significant incremental effect on shade/shadow-sensitive receptors.

For the reasons stated above, the Project would not have a considerable contribution to cumulative visual or aesthetic impacts.

3.2 Air Quality

This section addresses the potential for the Project to result in impacts on air quality. The information presented in this section is based on the Project's *Air Quality and Climate Change Assessment Report*, which is included as Appendix E to this Draft EIR.

3.2.1 Regulatory Setting

Air quality in the United States is governed by the federal *Clean Air Act* (CAA). In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the *California Clean Air Act* (CCAA). At the federal level, the CAA is administered by the U.S. Environmental Protection Agency (EPA). In California, the CCAA is administered by the California Air Resources Board (ARB) at the state level and by air districts at regional and local levels. The CAA and CCAA set overall air quality standards that are achieved through a multitude of rules and regulations at the regional and local level.

3.2.1.1 Federal

Federal *Clean Air Act*

The first air pollution control statute was enacted in 1955, and amended in 1965 and 1967. The subsequent federal CAA was enacted in 1970, and then amended in subsequent years (1977 and 1990). The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a *State Implementation Plan* (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The City of Los Angeles is within the South Coast Air Basin (Basin) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the Project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 3.2-1 shows the NAAQS currently in effect for each criteria pollutant. The Basin fails to meet national standards for ozone (O_3), inhalable particulate matter (PM10 and PM2.5), nitrogen dioxide (NO_2), and lead and is, therefore, designated a federal nonattainment area for those pollutants.[1] The Basin is a maintenance area for carbon monoxide (CO) (EPA 2015a), as a former nonattainment area that has achieved attainment with the CO NAAQS. Table 3.2-1 also provides the attainment status for each pollutant. Pollutants are described below in Section 3.2.2.

[1] In United States environmental law, an **nonattainment** area is an area considered to have air quality worse than the National Ambient Air Quality Standards, as defined in the Clean Air Act Amendments of 1970 (P.L. 91-604, Section 109).

Table 3.2-1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time[a]	State Standard[b]	Federal Standard[b]	Project Area Attainment Status
Ozone (O_3)[c]	1 hour 8 hours	0.09 ppm 0.070 ppm	-- [d] 0.070 ppm (fourth highest measurement in 3 years)	Federal: Nonattainment State: Nonattainment
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm[e] 6 ppm	35 ppm 9 ppm --	Federal: Attainment/ Maintenance State: Nonattainment
Respirable Particulate Matter (PM10)[c]	24 hours Annual	50 µg/m³ 20 µg/m³	150 µg/m³ -- [c] (expected number of days above standard ≤ 1)	Federal: Nonattainment State: Nonattainment
Fine Particulate Matter (PM2.5)[c]	24 hours Annual 24 hours (conformity process[f]) Secondary Standard (annual; also for conformity process[e])	-- 12 µg/m³ -- --	35 µg/m³ 12.0 µg/m³ 65 µg/m³ 15 µg/m³ (98[th] percentile over 3 years)	Federal: Nonattainment State: Nonattainment
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm[g] (98[th] percentile over 3 years) 0.053 ppm	Federal: Attainment/ Maintenance State: Nonattainment
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours	0.25 ppm -- 0.04 ppm	0.075 ppm[h] (99[th] percentile over 3 years) 0.5 ppm[i]	Federal: Attainment State: Attainment
Lead (Pb)[j]	Monthly Rolling 3-month average	1.5 µg/m³ --	-- 0.15 µg/m³ [k]	Federal: Nonattainment State: Nonattainment
Sulfate	24 hours	25 µg/m³	--	Federal: NA State: Attainment
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	--	Federal: NA State: Unclassified
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	--	Federal: NA State: Unclassified
Vinyl Chloride[j]	24 hours	0.01 ppm	--	Federal: NA State: Unclassified

Pollutant	Averaging Time[a]	State Standard[b]	Federal Standard[b]	Project Area Attainment Status

Sources: California Ambient Air Quality Standards (CAAQS) = *California Code of Regulations* (CCR), Title 17, Section 70200, NAAQS = *Code of Federal Regulations* (CFR), Title 40, Section 50; ARB 2015, EPA 2015b

ppm = parts per million; μg/m³ = micrograms per cubic meter; ppb=parts per billion (thousand million); NA = not available.

Greenhouse gases do not have concentration standards.

[a] "Averaging Time" is the time period established for specific ambient air quality standards, which must also be used when interpreting air quality monitoring data. National and California ambient air quality standards have different maximum levels for different averaging times.

[b] State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise. Federal standards are "not to exceed more than once a year" or as described above.

[c] Annual PM10 NAAQS revoked October 2006; was 50 μg/m³. The 24-hour PM2.5 NAAQS tightened October 2006; was 65 μg/m³. Annual PM2.5 NAAQS tightened from 15 μg/m³ to 12 μg/m³ December 2012 and secondary annual standard set.

[d] Prior to June 2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still in use in some areas where 8-hour ozone emission budgets have not been developed, such as the San Francisco Bay Area.

[e] Rounding to an integer value is not allowed for the state 8-hour CO standard. A violation occurs at or above 9.05 ppm.

[f] The 65 μg/m³ PM2.5 (24-hour) NAAQS was not revoked when the 35 μg/m³ NAAQS was promulgated in 2006. The 15 μg/m³ annual PM2.5 standard was not revoked when the 12 μg/m³ standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (July 20, 2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, *State Implementation Plan* (SIP) amendments for the newer NAAQS are approved with a emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

[g] Final 1-hour NO_2 NAAQS were published in the *Federal Register* on February 9, 2010, effective March 9, 2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

[h] EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010. Nonattainment areas had not yet been designated as of September 2012.

[i] Secondary standard, set to protect public welfare rather than health. Transportation Conformity and environmental analysis address both primary and secondary NAAQS.

[j] ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both ARB and EPA have identified lead and various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There are no exposure criteria for adverse health effects due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

[k] Lead NAAQS are not considered in Transportation Conformity analysis.

Transportation Conformity

The Project may seek federal funding from the Federal Transit Administration (FTA); therefore, if federal funding is sought, federal air quality requirements, including a transportation conformity finding, would need to be satisfied. This section provides documentation in support of that finding. Under the 1990 CAA, the U.S. Department of Transportation (USDOT) cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the SIP for achieving the goals of the CAA requirements. Conformity with the CAA takes place on two levels—first at the regional level, and second at the project level. The Project must conform at both levels to be approved.

EPA's transportation conformity rule (40 CFR Parts 51 and 93) establishes the criteria for conformity. At the regional level, EPA transportation conformity regulations require that a project be included in a currently conforming *Regional Transportation Plan* (RTP) and *Transportation Improvement Program* (TIP) at the time of project approval. Using the projects included in the RTP, an air quality model is run to determine whether the implementation of those projects would conform to emission budgets or other tests showing that federal CAA attainment requirements are met. If the conformity analysis is successful, Metropolitan Planning Organizations (MPOs), such as the Southern California Association of Governments (SCAG), and the appropriate federal agencies, such as the Federal Highway Administration (FHWA) and FTA, make the determination that the RTP and TIP are in conformity with the SIP for achieving NAAQS goals. Otherwise, the projects in the RTP and TIP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as those described in the RTP and TIP, the project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project level requires hot-spot analysis if a region is designated nonattainment or maintenance for CO and/or PM. In general, projects must not cause the CO or PM standards to be violated, and in nonattainment regions the project must not cause any increase in the number and severity of violations. If known CO or PM violations are located in the project vicinity, a project must include measures to reduce or eliminate the existing violations as well.

With respect to NAAQS, the Project is located in an area that has been designated as a nonattainment area for ozone, PM10, PM2.5, and lead and a maintenance area for CO and NO_2 (see Table 3.2-1). Therefore, the requirement to demonstrate regional and project-level conformity applies to the Project.

Federal Hazardous Air Pollutant Regulations

The CAA identified 188 pollutants as being air toxics, which are also known as hazardous air pollutants (HAPs). From this list, the EPA identified a group of 21 toxics as mobile source air toxics (MSATs) in its final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (66 *Federal Register* [FR] 17235) in March 2001. From this list of 21 MSATs, EPA in its 2007 rule on the control of hazardous air pollutants from mobile sources identified seven (acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases [diesel PM], formaldehyde, naphthalene, and polycyclic organic matter) as being priority MSATs. To address emissions of MSATs, the EPA has issued a number of regulations that have and will continue to dramatically decrease MSATs through cleaner fuels and cleaner engines.

3.2.1.2 State

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 3.2-1 shows the NAAQS and CAAQS currently in effect for each criteria pollutant and its state and federal attainment status. The Basin fails to meet state standards for O_3, PM10, PM2.5, NO_2, and lead and is, therefore, considered a state nonattainment area for those pollutants. The Basin is in attainment (compliance) with state standards for CO, SO_2, sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride.

California Toxic Air Contaminants Regulations

California regulates toxic air contaminants (TACs) primarily through the *Toxic Air Contaminant Identification and Control Act* (Tanner Act) (Assembly Bill [AB] 1807) and the *Air Toxics "Hot Spots" Information and Assessment Act of 1987* ("Hot Spots" Act) (AB 2588). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act (AB 1807) created California's program to reduce exposure to air toxics. The "Hot Spots" Act supplements the Tanner Act program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. To date, ARB has identified 21 TACs, and has also adopted the EPA's list of HAPs as TACs. In August 1998, diesel particulate matter (DPM) was added to the ARB list of TACs (ARB 1998).

State CEQA Guidelines

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of greenhouse gas (GHG) emissions that would result from a project. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

3.2.1.3 Local

South Coast Air Quality Management District

At the local level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality monitoring stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

The South Coast Air Quality Management District (SCAQMD) has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is a subregion of the SCAQMD jurisdiction. Although air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

The most recently approved air quality management plan (AQMP) is the 2012 update, which was adopted by the SCAQMD Governing Board on December 7, 2012 (SCAQMD 2012). The Final 2012 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

The most recent AQMP is the 2016 update, which is under development. The upcoming 2016 AQMP will include strategies to meet the following NAAQS: 8-hour Ozone (70 ppb) by 2032; annual PM2.5 (12 $\mu g/m^3$) by 2021–2025; 8-hour Ozone (80 ppb) by 2024; 1-hour Ozone (120 ppb) by 2023; and 24-hour PM2.5 (35 $\mu g/m^3$) by 2019. The SCAQMD governing board is expected during summer/fall of 2016 to consider adoption of the 2016 AQMP and would submit the plan to EPA by July 2016 (SCAQMD 2016).

SCAQMD has published the *CEQA Air Quality Handbook* (SCAQMD 1993) to help local governments analyze and mitigate project-specific air quality impacts. The handbook provides standards, methodologies, and procedures for conducting air quality analyses and was used extensively in the preparation of this report. In addition, SCAQMD has published additional documents (*Localized Significance Threshold Methodology for CEQA Evaluations* [SCAQMD 2003], *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* [SCAQMD 2006], and *Supplemental Guidelines for Preparing Risk Assessment for the Air Toxics "Hot Spots"* [SCAQMD 2015a]) that provide guidance in evaluating localized effects from mass emissions during construction and operations. These documents were used in the preparation of this report.

SCAQMD Rules and Regulations

Through the attainment planning process, the SCAQMD develops the SCAQMD Rules and Regulations to regulate sources of air pollution in the Basin. The SCAQMD rules most pertinent to construction and operation of the Project are listed below. In addition, to the extent that maintenance and storage facility (MSF) or traction power substation (TPSS) equipment would require SCAQMD permits, the Project would be subject to additional SCAQMD rules that apply to stationary sources, such as Regulation XIII (New Source Review), Rule 1401 (New Source Review of Toxic Air Contaminants), or Rule 431.2 (Sulfur Content of Liquid Fuels), among other rules.

SCAQMD Rule 402—Nuisance. This rule prohibits discharge of air contaminants or other material that:

- Cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public;
- Endanger the comfort, repose, health, or safety of any such persons or the public; and
- Cause, or have a natural tendency to cause, injury, or damage to business or property.

SCAQMD Rule 403—Fugitive Dust. This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. During construction of the Project, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site prewatering and rewatering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on property with 50 or more acres of disturbed surface area, or for any earth-moving operation with a daily earthmoving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintaining dust control records, and designating a SCAQMD-certified dust control supervisor.

SCAQMD Rule 1403—Asbestos Emissions from Demolition/Renovation Activities. The purpose of this rule is to limit emissions of asbestos, a TAC, from structural demolition/renovation activities. The rule requires people to notify the SCAQMD of proposed demolition/renovation activities and to survey these structures for the presence of asbestos-containing materials (ACMs). The rule also includes: notification requirements for any intent to disturb ACM; emission control measures; and ACM removal, handling, and disposal techniques. All proposed structural demolition activities associated with proposed construction would need to comply with the requirements of Rule 1403.

Southern California Association of Governments

SCAG is the MPO for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, economy, community development, and environment. SCAG is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the *Regional Comprehensive Plan* (RCP) for the SCAG region, which includes Growth Management and Regional Mobility chapters, which form the basis for the land use and transportation components of the AQMP. These chapters are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

With respect to air quality planning, SCAG prepares the RTP for the SCAG region every 3 years, which, along with the RCP, forms the basis for the land use and transportation components of the AQMP, and is used to prepare the air quality forecasts and the consistency analysis that are included in the AQMP.

3.2.2 Environmental Setting/Affected Environment

Air pollutants regulated by federal and state law include criteria air pollutants and toxic air contaminants. A description of each is provided below, followed by a discussion of the environmental setting/affected environment.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. Criteria air pollutants are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly and include CO, NO_2, SO_2, lead, and PM10 and PM2.5. Reactive organic gases (ROG) and NO_X are precursor pollutants that form ozone. A description of each of the primary and precursor pollutants and their known health effects follows.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon based fuels, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is that it replaces oxygen in the blood, which results in deprivation of oxygen to body cells and tissues, and ultimately leads to death (SCAQMD 2005).

Reactive Organic Gases (ROG), or Volatile Organic Compounds (VOC), are compounds made up of carbon with attached hydrogen atoms, as well as oxygen, chlorine, or nitrogen atoms. Internal combustion engines are a major source of hydrocarbon emissions. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants such as ozone (O_3) (SCAQMD 2005).

Nitrogen Oxides (NO_X) serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens (SCAQMD 2005).

Nitrogen Dioxide (NO_2) is a by-product of fuel combustion. The principal form of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs light in the blue wavelength; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM10. NO_X are also precursors to the formation of both O_3 and PM2.5 (SCAQMD 2005, SCAQMD 2007).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At high concentrations SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. A primary source of SO_2 emissions is from the combustion of high sulfur-content coal. Gasoline and natural gas have very low sulfur content and hence do not release significant quantities of SO_2 (SCAQMD 2005).

Particulate Matter (PM) consists of suspended finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized. Inhalable course particles, or PM10, include the particulate matter with a diameter of 10 microns (10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM2.5, have a diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM10 and PM2.5 may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions.[2] Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (much like sandblasting) (SCAQMD 2005).

Ozone (O_3), or smog, is one of a number of substances called photochemical oxidants that are formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the Basin, and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted growth and premature death. O_3 can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005).

[2] Wind-blown dust is typically more of a concern in rural areas, not in urban areas such as downtown Los Angeles.

Lead (Pb), a metal, and its compounds, negatively affect human health. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and a lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of Pb on the respiratory system. Pb accumulates in bone from an early-age from environmental exposure, and elevated blood Pb levels can occur because of the breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (loss of bone density and breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb through previous environmental Pb exposure of their mothers (SCAQMD 2005).

Toxic Air Contaminants/Mobile-Source Air Toxics

Although Ambient Air Quality Standards (AAQS) exist for criteria pollutants, no ambient standards exist for TACs. Unlike criteria pollutants, TACs are considered to have no safe exposure level (i.e., a safe concentration standard). The complete absence of TAC emissions exposure is the ultimate goal. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA).

As noted above, the Federal CAA mandated that the EPA regulate 188 air toxics EPA has identified seven HAPs as priority MSATs:

- Acrolein
- Benzene
- 1,3-Butadiene
- Diesel particulate matter/diesel exhaust organic gases
- Formaldehyde
- Naphthalene
- Polycyclic organic matter

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOVES2010b model, even if vehicle activity (VMT) increases by 102 percent, as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emission rate for the priority MSAT is projected for the same time period (FHWA 2012).

Existing Air Quality Conditions

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. The area potentially affected by the Project is located within the City of Los Angeles, within Los Angeles County, and within the Basin. The following discussion describes relevant characteristics of the Basin and an overview of conditions affecting ambient air pollutant concentrations.

Regional Context

The project site is located within the Basin, an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location drive the semi-arid, Mediterranean climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The southern California region is influenced by a semi-permanent high-pressure zone over the eastern Pacific. As a result, the Mediterranean climate is mild and temperate. The usually mild climatological pattern is interrupted by infrequent periods of extremely hot weather, or intense winter storms, or strong Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, insolation, air temperature, humidity, precipitation, along with topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

The greatest air pollution impacts in the Basin occur from June through September. These are generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing through temperature inversions. This condition frequently reduces pollutant dispersion, thereby causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. O_3 concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

SCAQMD completed an ambient air monitoring and evaluation study in the Basin (the Multiple Air Toxics Exposure Study IV [MATES IV] study). MATES IV was a follow up to previous air toxics studies in the Basin and part of the SCAQMD Governing Board's Environmental Justice Initiative. The MATES IV study concluded that the average carcinogenic risk throughout the Basin, which was attributed to TACs, is approximately 418 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) are the greatest contributors. About 83.6 percent of all risk is attributed to DPM emissions (SCAQMD 2008). The MATES IV study also concluded that air toxic exposure within the Basin has decreased when compared against previous studies and monitoring location data. MATES IV estimated that the carcinogenic risk from air toxics in the Basin was 65 percent lower than the monitored average in MATES III with the greatest risk around ports and major transportation corridors (SCAQMD 2015b).

Local Air Conditions

Local Meteorology

Data from the closest climate monitoring station—Western Regional Climate Center's (WRCC's) Los Angeles Civic Center Station (COOPID 045115), located in downtown Los Angeles—was used to characterize project vicinity climate conditions. Over the period of record (1906–2012), the average study area summer (August) high and low temperatures were 83.1 degrees Fahrenheit (°F) and

63.8°F, respectively, while temperatures exceed 90°F an average of 8.5 times per year. The average winter (January) high and low temperatures were 66.4°F and 48.3°F, respectively, while temperatures rarely drop below 32°F. Rainfall varies widely from year to year, with an annual average of 14.77 inches with an average of 36 days with measureable rainfall (greater than or equal to 0.01 inches) (WRCC 2013).

The closest wind monitoring station, located approximately 1.5 miles northeast of the study area, is the Central Los Angeles wind monitoring station (1630 Main Street). Wind patterns in the project vicinity arise primarily from the west-southwest, with seasonal and diurnal variations resulting in northeast (during Santa Ana events) and southerly winds (before and during winter storms) (National Oceanic and Atmospheric Administration [NOAA] n.d.). Over the period of record (January 1, 2006 to December 31, 2009), winds at the Central Los Angeles station averaged a speed of 5 miles per hour, while calm wind conditions (i.e., no discernible speed) were present only 0.32 percent of the time (SCAQMD 2011).

Existing Pollutant Levels at Nearby Monitoring Station

SCAQMD has divided the Basin into air monitoring areas and maintains a network of air quality monitoring stations located throughout the Basin. The project alignment is located in the Central Los Angeles County Monitoring Area (Source Receptor Area [SRA] 1). The nearest monitoring station is the Los Angeles – North Main Street station (ARB 70087, 1630 North Main Street), located approximately 1.5 miles northeast of the Project. Criteria pollutants monitored at the Los Angeles – North Main Street station include O_3, CO, NO_2, PM10, PM2.5, SO_2, and lead.

Concentrations of pollutants over the last 3 years for which complete data are available (2013–2015) have been compiled from the stations' data (see Table 3.2-2) (EPA 2016; ARB 2016). Monitoring data show the following pollutant concentration violations:

- 1-hour O_3 CAAQS was exceeded multiple times in 2014 and 2015.
- 8-hour O_3 CAAQS and NAAQS were exceeded multiple times in 2014.
- 24-hour PM10 CAAQS was exceeded several times each year.
- 24-hour PM10 NAAQS was not exceeded in 2013–2015.
- 24-hour PM2.5 NAAQS was exceeded once in 2013 and several times in 2014 and 2015.
- 1-hour NO_2 NAAQS and CAAQS were not exceeded in 2013–2015.
- No exceedances of the CO CAAQS or NAAQS were recorded.
- The annual standard for PM2.5 has been exceeded in 2013–2015, but not for PM10.

Table 3.2-2. Air Quality Data from Los Angeles – North Main Street Station (ARB 70087, EPA AQS 06-037-1103)

Pollutant and Standard	**2013**	**2014**	**2015**
Ozone (O_3)			
Maximum concentration 1-hour period	0.081	0.113	0.104
Maximum concentration 8-hour period	0.069	0.094	0.074
Days state 1-hour standard exceeded *(0.09 ppm)*	0	3	2
Days state 8-hour standard exceeded *(0.070 ppm)*	0	7	6

Pollutant and Standard	**2013**	**2014**	**2015**
Days national 8-hour standard exceeded *(0.070 ppm)*	0	2	0
Suspended Particulates (PM10)			
Maximum state 24-hour concentration	74.5	86.8	72.0
Maximum national 24-hour concentration	57	66	73
Annual average concentration	35.3	30.2	NA
Days state 24-hour standard exceeded *(50 µg/m^3)*	21	19	NA
Days national 24-hour standard exceeded (expected) *(150 µg/m^3)*	0	0	0
State annual standard exceeded *(20 µg/m^3)*	Yes	Yes	NA
Suspended Particulates (PM2.5)			
Maximum 24-hour concentration	54.8	65.0	56.4
State annual average concentration	18.9	NA	12.5
National annual average concentration	12.0	12.3	12.3
Days national 24-hour standard exceeded *(35 µg/m^3)*	1	6	8
State/national annual standards exceeded *(12 µg/m^3)*	Yes	NA	Yes
Carbon Monoxide (CO)			
Maximum Concentration 8-hour Period	2.0	1.8	1.8
Maximum Concentration 1-hour Period	2.5	2.4	3.2
Days state 8-hour standard exceeded *(9.0 ppm)*	0	0	0
Days national 8-hour standard exceeded *(9 ppm)*	0	0	0
Days state 1-hour standard exceeded *(20 ppm)*	0	0	0
Days state 1-hour standard exceeded *(20 ppm)*	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour Concentration	0.09	0.082	0.079
Annual Average Concentration	0.022	0.022	0.022
Days state 1-hour standard exceeded (*0.18 ppm*)	0	0	0
Days national 1-hour standard exceeded (*0.100 ppm*)	0	0	0
State annual standard exceeded *(0.030 ppm)*	No	No	No
National annual standard exceeded *(0.053 ppm)*	No	No	No
Source: California Air Resources Board 2016; U.S. Environmental Protection Agency 2016. Compiled by ICF, April 2016. Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.			

Sensitive Receptors and Locations

SCAQMD defines sensitive receptor locations as residential, commercial, and industrial land use areas as well as other locations where sensitive populations may be located. Other sensitive receptor locations include schools, hospitals, convalescent homes, day care centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed (SCAQMD 2005).

The Project would be in the heavily developed downtown Los Angeles area, and streetcars would travel through the following neighborhoods/districts: the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, and the Los Angeles Sports and Entertainment District. Sensitive receptor locations within 0.25 mile of the Project include multiple land use categories such as residential, medical, and child care, among other uses. Detailed below under the discussion of *Thresholds of Significance* (Section 3.2.3.2), the most conservative (i.e., lowest number) SCAQMD localized thresholds are used to evaluate local impacts throughout the project limits. This will ensure that all sensitive receptor locations are evaluated using the most conservative localized significance criteria.

3.2.3 Environmental Impact Analysis

3.2.3.1 Methodology

Construction Impacts

Construction of the Project would result in the short-term generation of criteria pollutant and TAC emissions. Mass daily combustion exhaust, fugitive dust (PM10 and PM2.5), and fugitive off-gassing paving emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, version 7.4.1 and the California Emissions Estimator Model (CalEEMod), version 2013.2.1. Both models estimate criteria pollutant and GHG emissions associated with construction. CalEEMod also estimates emissions associated with project operations for the MSF. Each phase of construction would result in combustion exhaust emissions from onsite construction equipment and construction workers' commutes. All emissions calculation worksheets and air quality modeling output files are provided in Appendix E.

Operation Impacts

VMT Estimation

Some streetcar riders will use the streetcar to replace trips that were formerly made by car. The tool provided by the FTA for estimating transit ridership is the Simplified Trips-On-Project Software (STOPS) model. The STOPS model also produces an estimate of person miles traveled (PMT) by automobile that would be reduced as a result of a project. For existing and future years of the Project, Metro used the STOPS model to estimate streetcar ridership and reduced PMT by auto.

To convert reduced auto PMT to reduced VMT, an average vehicle occupancy factor was applied. This factor was derived from the City of Los Angeles Travel Demand Model, and it accounts for cars that carry more than one person (Fehr & Peers 2013). Table 3.2-3 shows the STOPS model estimates of daily riders and associated auto person miles reduced, as well as the calculated estimates of vehicle miles reduced, for each of the four project alternatives.

To assess the benefit of reduced VMT on air quality, the speeds of vehicles traveling these miles was estimated using results from the City of Los Angeles Travel Demand Model (Fehr & Peers 2013). The aggregated estimate of total VMT reduction, as derived from the STOPS model, was apportioned into speed bins (0–5 mph, 6–10 mph, 11–15 mph, etc.). These VMT estimates by travel speed and CT-EMFAC2014, the emissions model developed by ARB and the California Department of Transportation (Caltrans), are then used to estimate project emissions reductions by Build Alternative. Tables 3.2-3 through 3.2-6 provide estimates of project vicinity VMT reductions anticipated to occur under the Build Alternative, when compared to the No Project Alternative, by speed bin for each of the four Build Alternatives for existing and future years.

Emissions Calculations

As discussed above, the Project is anticipated to have an effect on local VMT and travel speeds. As such, the Project would have an effect on mobile-source criteria pollutant, MSAT, and GHG emissions. Changes in mobile-source emissions associated with regional traffic were estimated using the Caltrans CT-EMFAC2014 emissions model (Version 6.0) and VMT data discussed above.

Transportation Conformity

Regional Conformity

The Project is located in an extreme nonattainment area with regard to the federal 8-hour ozone standard. Because ozone and its precursors are regional pollutants, the Project must be evaluated under the transportation conformity requirements described earlier. An affirmative regional conformity determination must be made before the Project can proceed. Such a determination is not required if the Project is described in an approved RTP and TIP and the Project has not been altered in design concept or scope described in the RTP and TIP.

Project-Level Conformity

As stated above, if a project is located in a nonattainment or maintenance area for localized pollutants, then a hot-spot analysis and possible emission reduction measures to address that pollutant are required. Project-level hot-spot analyses are only required for localized pollutants (i.e., CO, PM10, and PM2.5).

Carbon Monoxide

The Project is located in a maintenance area with regard to the federal CO standard. Consequently, assuming that federal funding is sought, the evaluation of transportation conformity for CO is required. The CO transportation conformity analysis is based on the Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) developed for Caltrans by the Institute of Transportation Studies at the University of California, Davis (Garza et al. 1997, reissued 2010) and is consistent with the assumptions used in the RTP regional emissions analysis. This CO Protocol details a step-by-step procedure to determine whether project-related CO concentrations have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS and CAAQS for CO.

Table 3.2-3. LA Streetcar Daily Ridership and Auto Travel Reduction Estimates

Alternative	2015			2020			2040		
	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]
2: 7th Street with Grand Avenue Extension	5,134	8,448	6,813	5,583	8,893	7,172	7,379	10,672	8,606
3: 7th Street without Grand Avenue Extension	3,795	6,775	5,464	4,123	7,098	5,724	5,434	8,391	6,767
4: 9th Street with Grand Avenue Extension	5,301	8,301	6,694	5,773	8,748	7,055	7,660	10,539	8,499
5: 9th Street without Grand Avenue Extension	3,522	6,042	4,873	3,851	6,352	5,123	5,170	7,592	6,123

Source: Metro 2016.
[a] Auto occupancy conversion factor (1.24 persons/vehicle) taken from City of Los Angeles Travel Demand Model.

Table 3.2-4. Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,410	1,131	1,386	1,009
10.2%	6–10	695	557	683	497
10.8%	11–15	736	590	723	526
17.7%	16–20	1,206	967	1,185	862
14.5%	21–25	988	792	971	707
7.0%	26–30	477	382	469	341
4.6%	31–35	313	251	308	224
3.2%	36–40	218	175	214	156
3.8%	41–45	259	208	254	185
3.3%	46–50	225	180	221	161
2.1%	51–55	143	115	141	102
1.3%	56–60	89	71	87	63
0.5%	61–65	34	27	33	24
0.2%	66–70	14	11	13	10
Sources: ICF International 2016; Fehr & Peers 2013.					

Table 3.2-5. Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,485	1,185	1,460	1,060
10.2%	6–10	732	584	720	523
10.8%	11–15	775	618	762	553
17.7%	16–20	1,269	1,013	1,249	907
14.5%	21–25	1,040	830	1,023	743
7.0%	26–30	502	401	494	359
4.6%	31–35	330	263	325	236
3.2%	36–40	229	183	226	164
3.8%	41–45	273	218	268	195
3.3%	46–50	237	189	233	169
2.1%	51–55	151	120	148	108
1.3%	56–60	93	74	92	67
0.5%	61–65	36	29	35	26
0.2%	66–70	14	11	14	10
Sources: ICF International 2016; Fehr & Peers 2013.					

Table 3.2-6. Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,782	1,401	1,759	1,267
10.2%	6–10	878	690	867	625
10.8%	11–15	929	731	918	661
17.7%	16–20	1,523	1,198	1,504	1,084
14.5%	21–25	1,248	981	1,232	888
7.0%	26–30	602	474	595	429
4.6%	31–35	396	311	391	282
3.2%	36–40	275	217	272	196
3.8%	41–45	327	257	323	233
3.3%	46–50	284	223	280	202
2.1%	51–55	181	142	178	129
1.3%	56–60	112	88	110	80
0.5%	61–65	43	34	42	31
0.2%	66–70	17	14	17	12
Sources: ICF International 2016; Fehr & Peers 2013.					

Project traffic during the operational phase of the Project would have the potential to create congestion at nearby intersections, thereby potentially leading to localized CO hot spots. Intersections were screened to capture those intersections that displayed the worst (i.e., longest) delay and highest peak hour traffic volumes. From this screening, five intersections were selected for analysis of potential localized CO hot-spot impacts. These intersections represent the worst traffic conditions in the vicinity of the Project. This screening analysis was completed for each alternative (SCAQMD 1993).

CO hot-spot impacts were evaluated through CO dispersion modeling using the EMFAC2014 web tool, the CALINE4 model, and traffic data provided by the traffic engineers. CO emissions were modeled for existing year 2015, and the opening year (2020) and horizon year (2040) No-Project and With-Project build alternatives at the five selected intersections. Each intersection was modeled under No-Project and With-Project traffic conditions to calculate the projected net change in CO concentrations. CO emission rates were based on an SCAQMD average fleet operating under winter emission rate conditions and an average speed of 5 mph. The above method provides a conservative (tending to overestimate impacts) analysis because vehicle CO emission rates are highest at both low travel speeds and in cold air temperatures.

PM10 and PM2.5

The Project is located in a nonattainment area for the federal PM10 and PM2.5 standards. Consequently, assuming that federal funding is sought, project-level conformity determinations for PM10 and PM2.5 are required. In December 2010, the EPA finalized conformity guidance for determining which transportation projects must be analyzed for local air quality impacts in PM2.5 and PM10 nonattainment and maintenance areas (FHWA 2010). The final rule requires PM10 and PM2.5 hot-spot analyses to be performed for a project of air quality concern (POAQC) or any other project identified by the PM10 or PM2.5 SIP as a localized air quality concern.

In November 2015 EPA updated the conformity guidance for quantifying local air quality impacts of transportation projects on PM2.5 and PM10 to reflect the MOVES2014 emissions model and its revisions—*Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (EPA 2015a). This guidance requires lead agencies to conduct a quantitative hot-spot analysis for projects in PM2.5 and PM10 nonattainment and maintenance areas. The FHWA and EPA guidance identifies examples of projects that are most likely POAQCs and details a qualitative step-by-step screening procedure to determine whether project-related particulate emissions have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for PM2.5 or PM10.

POAQCs are certain highway and transit projects that involve significant levels of diesel traffic or any other project identified in the PM2.5 or PM10 SIP as a localized air quality concern. As noted in the EPA's March 2006 final rule, the following are examples of POAQCs.

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) where 8 percent or more of such AADT is diesel truck traffic.
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal.
- Expansion of an existing highway or other facility that affects a congested intersection (operating at level of service [LOS] D, E, or F) that has a significant increase in the number of diesel trucks.

- Similar highway projects that involve a significant increase in the number of diesel transit busses and/or diesel trucks.
- A major new bus or intermodal terminal that is considered to be a “regionally significant project” under 40 CFR 93.101.
- An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50 percent or more as measured by bus arrivals.

As noted in the EPA’s March 2006 final rule, the examples below are projects that are not of air quality concern:

- Any new or expanded highway project that primarily serves gasoline vehicle traffic (i.e., does not involve a significant number or increase in the number of diesel vehicles), including such projects involving congested intersections operating at LOS D, E, or F.
- An intersection channelization project or interchange configuration project that involves either turn lanes or slots or lanes or movements that are physically separated. These kinds of projects improve freeway operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM2.5 or PM10 violations.
- Intersection channelization projects; traffic circles or roundabouts; intersection signalization projects at individual intersections; and interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, do not involve any increases in idling, and would be expected to have a neutral or positive influence on PM2.5 or PM10 emissions as a result.
- A new or expanded bus terminal that is served by non-diesel vehicles (e.g., compressed natural gas) or hybrid-electric vehicles.
- A 50 percent increase in daily arrivals at a small terminal (e.g., a facility with 10 buses in the peak hour).

For projects identified as not being a POAQC, PM2.5 and PM10 (for regions without an approved conformity SIP) hot-spot analyses are not required. For these types of projects, state and local project sponsors should briefly document in their project-level conformity determinations that federal CAA and 40 CFR 93.116 requirements were met without a hot-spot analysis, because such projects have been found to not be of air quality concern under 40 CFR 93.123(b)(1).

For areas with an approved conformity SIP, the final rule does not apply (i.e., when a state withdraws the existing provisions from its approved conformity SIP and EPA approves the withdrawal, or when a state includes the revised PM10 hot-spot requirements in a SIP revision and EPA approves that SIP revision). For these areas, the assessment should continue to follow the PM10 hot-spot procedures in their existing conformity SIPs until the SIP is updated and subsequently approved by the EPA.

Although the guidance for conducting a PM10 hot-spot analysis for conformity purposes contains separate requirements for PM10 nonattainment/maintenance areas with and without approved conformity SIPs, guidance from the EPA indicates that there are no areas within California where a conformity SIP has been approved. Consequently, all projects that are POAQCs must undergo PM10 (and PM2.5) hot-spot conformity determinations. Projects identified as not being a POAQC do not require qualitative PM2.5 and PM10 hot-spot analyses. Because the Project would be located in an area classified as a nonattainment area for the PM2.5 standard, a determination must be made as to whether it would result in a PM2.5 hot spot. This determination is made in Section 3.2.3.4, *Operational Impacts.*

3.2.3.2 Thresholds of Significance

City of Los Angeles CEQA Thresholds Guide

The City of Los Angeles has not adopted specific citywide significance thresholds for air quality impacts. However, because of the SCAQMD regulatory role in the Basin, the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) references the significance threshold and analysis methodologies in the SCAQMD's *CEQA Air Quality Handbook* to assist in evaluating projects proposed within the City. The following are the impact significance thresholds taken from the *Handbook*.

Construction Emissions

According to criteria set forth in the SCAQMD *CEQA Air Quality Handbook, Localized Significance Threshold Methodology for CEQA Evaluations, and Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance documents, a project would have a significant impact on construction emissions if any of the following were to occur.

- Regional emissions from both direct and indirect sources exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for ROG, (2) 100 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb.
- Localized emissions from on-site construction equipment and site disturbance activity exceed any of the following SCAQMD-prescribed threshold levels: (1) 74 pounds per day for NO_X, (2) 562 pounds per day for CO, (3) 4 pounds per day for PM10, and (4) 2 pounds per day for PM2.5.[3]

These Los Angeles thresholds are the same as the respective SCAQMD significance thresholds for construction emissions.

Operational Emissions

According to criteria set forth in the SCAQMD *CEQA Air Quality Handbook*, a project would have a significant impact with regard to operational emissions if and of the following were to occur.

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds a day for ROG, (2) 55 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb (SCAQMD 1993, 2006).
- Localized emissions from on-site sources exceed any of the following SCAQMD prescribed threshold levels: (1) 74 pounds per day for NO_X, (2) 680 pounds per day for CO, (3) 5 pounds per day for PM10, and (4) 3 pounds per day for PM2.5.[4]
- The project would cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9 ppm, respectively, at an intersection or roadway within 0.25 mile of a sensitive receptor.[5]

[3] Derived from SCAQMD Localized Significance Threshold Tables—SRA 1 (Central Los Angeles County) 1-acre site, 25-meter receptor distance.

[4] Derived from SCAQMD Localized Significance Threshold Tables – SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1-acre site, 25-meter receptor distance.

[5] Where the CO standard is exceeded at the intersection, a project would result in a significant impact if the

These Los Angeles thresholds are the same as the respective SCAQMD significance thresholds for construction emissions.

Toxic Air Contaminants

According to guidelines provided in the SCAQMD *CEQA Air Quality Handbook*, a project would have a significant impact from TACs if any of the following were to occur.

- Onsite stationary sources emit carcinogens or TACs that individually or cumulatively exceed the maximum individual cancer risk of ten in one million (1.0×10^{-5}) or an acute or chronic hazard index of 1.0 (SCAQMD 1998).
- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials, posing a threat to public health and safety.
- The project would be occupied primarily by sensitive individuals within 0.25 mile of any existing facility that emits TACs, which could result in a health risk from pollutants identified in District Rule 1401 (SCAQMD 1993).

These Los Angeles thresholds are the same as the respective SCAQMD significance thresholds for TAC emissions.

Odors

In addition to the above, the State CEQA Guidelines (Appendix G) recommends that the following impact be considered, which is not addressed in the 2006 *L.A. CEQA Thresholds Guide*.

- Create objectionable odors affecting a substantial number of people.

3.2.3.3 Construction Impacts

Project construction includes construction of the streetcar line and associated infrastructure, the TPSS locations, and the MSF.

Alternative 1: No Project Alternative

No impact. Under the No Project Alternative, the improvements and facilities associated with the Project would not be constructed. As no construction would occur under this alternative, the No Project Alternative would have no construction impacts. The No Project Alternative also serves as the baseline for comparison and assessment of the project alternatives.

incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard or 0.45 ppm for the 8-hour CO standard.

Alternative 2: 7th Street with Grand Avenue Extension

Regional Construction Impacts

Less-than-significant impact. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources. The equipment mix and duration for each construction stage is detailed in the Road Construction Model and CalEEMod printout sheets provided in Appendix E.

The total amount of construction, the duration of construction, and the intensity of construction activity could affect the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., fewer daily emissions occurring over a longer time interval).

Table 3.2-7 shows the regional construction emissions calculated for the Project. As shown therein, criteria pollutant emissions would be less than the applicable SCAQMD significance thresholds, and, as such, impacts on regional air quality during construction would be less than significant.

Table 3.2-7. Worst-Case Regional Construction Emissions (pounds per day)

Construction Phase	Pb	ROG	NO_X	CO	SO_X	PM10	PM2.5
Road Demolition and Excavation	< 1	11	92	70	< 1	16	7
Drainage/Utilities/Subgrade Work	< 1	7	71	37	< 1	9	5
Track and TPSS Installation, Paving	< 1	3	27	17	< 1	2	2
Maintenance Facility Construction	< 1	70	35	21	< 1	2	2
Concurrent Track Installation and Maintenance Facility Construction	< 1	73	62	38	< 1	4	4
SCAQMD Significance Threshold	3	75	100	550	150	150	55
Threshold exceeded for any phase?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source: ICF International 2016.
Note: Road Construction Emissions Model and CalEEMod modeling output sheets are provided in Appendix E.

Local Construction Impacts

Less-than-significant impact. In addition to regional emissions thresholds, SCAQMD has developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction-period emissions. If the onsite emissions from proposed construction activities are below the Localized Significance Threshold (LST) emission levels found in the LST mass rate look-up tables for the project vicinity SRA, then project emissions would not have the potential to cause a significant localized air quality impact.

When quantifying mass emissions for LST analysis, only emissions that occur on site are considered. Consistent with SCAQMD LST guidelines, emissions related to offsite delivery/haul truck activity and employee trips are not considered in the evaluation of localized impacts. A conservative estimate of the Project's construction-period mass emissions is presented in Table 3.2-8. As shown therein, the worst-case maximum emissions for NO_X, PM10, and PM2.5 would exceed their respective SCAQMD localized significance thresholds. As such, localized impacts could be significant. However, Mitigation Measure **MM-AQ-C1** in Section 3.2.4 would ensure this local construction impact would be less than significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Table 3.2-8. Worst-Case Localized Construction Emissions (pounds per day)

Construction Phase	NO_X	CO	PM10[1]	PM2.5[a]
Road Demolition and Excavation	94	52	6	5
Drainage/Utilities/Subgrade Work	70	45	5	5
Track and TPSS Installation, Paving	26	13	2	2
Maintenance Facility Construction	20	11	2	1
SCAQMD Localized Significance Thresholds[b]	74	680	5	4
Threshold exceeded for any phase?	**Yes**	**No**	**Yes**	**Yes**

Source: ICF International 2016.

Note: Construction Road Emissions Model and CalEEMod output sheets are provided in Appendix E.

[a] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[b] The project site is located in SCAQMD SRA Number 1. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the project area that could be under construction on any given day (1 acre) that is within 25 meters of an individual sensitive receptor location.

Toxic Air Contaminants

Less-than-significant impact. The greatest potential for TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during site grading activities. Construction activities associated with the Project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. As exposure to diesel exhaust would be well below the 70-year exposure period, construction of the Project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would be less than significant.

Odors

Less-than-significant impact. Although offensive odors rarely cause any physical harm, they can be unpleasant and lead to considerable distress among the public. This distress may often generate citizen complaints to local governments and air districts. Any project with the potential to frequently expose the public to objectionable odors would be deemed as one having a significant impact.

Potential odor sources during construction activities include diesel exhaust from heavy-duty equipment and the application of architectural coatings. Construction-related operations near existing receptors would be temporary in nature, and construction activities would not be likely to result in objectionable odors affecting a substantial number of people. As such, impacts during construction would be less than significant.

Alternative 3: 7th Street without Grand Avenue Extension

There would be no material difference in the affected environment (i.e., air basin, local setting) or in construction techniques, or intensity under the 7th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, construction impacts of Alternative 3, in terms of pollutant emissions pounds per day, would be similar to those of Alternative 2. Because Alternative 3 does not include construction of the Grand Avenue Extension, the duration of impacts occurring under Alternative 3 would likely be less than under Alternative 2.

Alternative 4: 9th Street with Grand Avenue Extension

There would be no material difference in the affected environment (i.e., air basin, local setting) or in construction techniques, duration, or intensity under the 9th Street Alternative with Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, construction impacts of Alternative 4 would be similar to those of Alternative 2.

Alternative 5: 9th Street without Grand Avenue Extension

There would be no material difference in the affected environment (i.e., air basin, local setting) or in construction techniques, or intensity under the 9th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, construction impacts of Alternative 5, in terms of pollutant emissions in pounds per day, would be similar to those of Alternative 2. Because Alternative 5 does not include construction of the Grand Avenue Extension, the duration of impacts occurring under Alternative 5 would likely be less than under Alternative 2.

3.2.3.4 Operational Impacts

Project operation includes operation of the streetcar line and associated infrastructure, TPSS, and MSF.

Alternative 1: No Project Alternative

No impact. Under the No Project Alternative, the improvements and facilities associated with the Project would not be constructed. The No Project Alternative represents conditions in the project study area that would remain if the proposed Project did not occur. It includes those improvements projected to be funded under the current RTP. The No Project Alternative also serves as the baseline for comparison and assessment of the project alternatives and against which the VMT reductions associated with the project alternatives can be measured.

Alternative 2: 7th Street with Grand Avenue Extension

Regional Operations Impacts

Less-than-significant impact. Regional air pollutant emissions associated with project operations would result from (1) the net change in passenger VMT that would occur within the study area under the project alternatives compared to the No Project Alternative; (2) employee trips (mobile source) and energy demand (area and stationary-source) emissions related to MSF lighting, water heating, and temperature control; and (3) the emissions from electricity generation needed to power streetcar operations.

Based on the VMT estimates derived above under Section 3.2.3.1, *Methodology*, *VMT Estimation*, the Project is anticipated to result in a daily reduction of project vicinity VMT due primarily to diversion of private automobile trips that would occur under each project build alternative when compared to the No Project Alternative. Table 3.2-9 lists the emission reductions that were estimated to occur for each year and project build alternative.

Table 3.2-9. Estimated Change in Passenger Vehicle Emissions due to VMT Reduction during Operations (pounds per day)

Year	Alternative	Daily VMT Reduction	Pb[a]	ROG	NO_X	CO	SO_X	PM10	PM2.5
Alternative 1									
2015 2020 2040	Existing No Project No Project	0	NA	NA	NA	NA	NA	NA	NA
2015 Existing plus Project[a]									
	Alternative 2	6,813	0	(7)	(12)	(38)	(<1)	(1)	(1)
	Alternative 3	5,464	0	(6)	(9)	(31)	(<1)	(1)	(<1)
	Alternative 4	6,694	0	(7)	(12)	(37)	(<1)	(1)	(1)
	Alternative 5	4,873	0	(5)	(8)	(27)	(<1)	(1)	(<1)
2020 Future Year									
	Alternative 2	7,172	0	(5)	(9)	(24)	(<1)	(1)	(<1)
	Alternative 3	5,724	0	(7)	(7)	(19)	(<1)	(1)	(<1)
	Alternative 4	7,055	0	(5)	(9)	(23)	(<1)	(1)	(<1)
	Alternative 5	5,123	0	(4)	(7)	(17)	(<1)	(1)	(<1)
2040 Future Year									
	Alternative 2	8,606	0	(3)	(9)	(13)	(<1)	(1)	(<1)
	Alternative 3	6,767	0	(2)	(7)	(10)	(<1)	(1)	(<1)
	Alternative 4	8,499	0	(3)	(9)	(13)	(<1)	(1)	(<1)
	Alternative 5	6,123	0	(2)	(6)	(9)	(<1)	(1)	(<1)

Source: ICF International 2016.

[a] In 1996 the EPA phased out the use of lead (Pb) as a fuel additive for on-road vehicles. As such, current fuel blends for on-road vehicles contains no lead. Therefore, on-road motor vehicle exhaust contains no lead emissions.

NA = Not applicable.

Note: CT-EMFAC2014 modeling output sheets are provided in Appendix E.

The CT-EMFAC2014 model was used to estimate the emission reductions shown above in Table 3.2-9 that would result from the reduction of daily VMT under each build alternative. The CalEEMod model was used to estimate emissions related to maintenance and storage facility operations. Emissions related to streetcar operations were based on the estimates of system energy demand, which include emissions related to energy demand and employee trips. Table 3.2-10 summarizes the emissions from all of these sources. To be conservative, passenger vehicle emissions shown below in Table 3.2-10 are for the 2015 Existing plus Project Build Alternative 5, which results in the least emission reduction. Table 3.2-10 shows that regional mass emissions would be less than significant.

Table 3.2-10. Estimate of Operations-Period Mass Emissions (pounds per day)

	Pb[a]	ROG	NO_X	CO	SO_X	PM10	PM2.5
Net Passenger Vehicle Emissions 2015 Existing plus Project Build Alternative 5	0	(5)	(8)	(27)	(<1)	(1)	(<1)
Maintenance Facility Emissions	0	1	2	7	<1	1	<1
Streetcar Operations Emissions	0	<1	3	2	<1	<1	<1
Total Project Emissions	0	(4)	(3)	(18)	<1	<1	<1
SCAQMD Significance Threshold	3	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source: ICF International 2016.

[a] EPA in 1996 phased out the use of lead (Pb) as a fuel additive for on-road vehicles. As such, current fuel blends for on-road vehicles contains no lead. Therefore, on-road motor vehicle exhaust contains no lead emissions.

Note: CT-EMFAC and CalEEMod modeling output sheets are provided in Appendix E.

Local Operational Impacts

Less-than-significant impact. Emissions associated with maintenance facility operations were estimated using the SCAQMD CalEEMod model. With respect to local mass emissions, Table 3.2-11 shows that onsite operations-period emissions associated with maintenance facility operations would be below SCAQMD's localized significance thresholds. Impacts from emissions of these criteria pollutants would be less than significant.

Table 3.2-11. Operation-Period Localized Emissions (pounds per day)

Emissions Source	CO	NO_X	PM10	PM2.5
Onsite Area Source [a] (MSF)	<1	<1	<1	<1
SCAQMD Daily Significance Threshold (LST)[b]	680	74	2	1
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: ICF International 2016.

[a] Onsite emissions calculated using the CalEEMod emissions model (area-source emissions). Model output sheets are provided in Appendix E.

[b] The project site is located in SCAQMD SRA 1. LSTs are based on the site location SRA, distance to the nearest sensitive-receptor location from the project site (25 meters), and the project area (1 acre).

Particulate Matter Hot-Spot Analysis

The Project is within a nonattainment area for federal PM2.5 and PM10 standards. Therefore, per 40 CFR 93, project-level analyses are required for conformity purposes. However, EPA does not require hot-spot analyses for projects that are not listed in Section 93.123(b)(1) as a POAQC. The Project does not qualify as a POAQC for the following reasons.

- The Project is not a new or expanded highway project that would have a significant increase in the number of diesel vehicles.
- The Project would not affect intersections that operate at poor LOS with a significant number of diesel vehicles.
- The Project would not include the construction of a new bus or rail terminal that would significantly increase the number of diesel-powered vehicles congregating in a single location.

- The Project would not expand an existing bus or rail terminal that would significantly increase the number of diesel-powered vehicles congregating in a single location.
- The Project would not be located in nor affect any location, area, or categories of sites that are identified in the PM2.5 and PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Therefore, the Project meets the CAA requirements and 40 CFR 93.116 without any explicit hot-spot analysis. The Project would not create a new, or worsen an existing, PM10 or PM2.5 violation.

California CO standards

Less-than-significant impact. Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found close to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For purposes of providing a conservative worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations. If impacts are less than significant close to congested intersections, impacts will also be less than significant at more distant sensitive-receptor locations.

Project traffic during project operation would have the potential to create local area CO impacts. To ascertain the Project's potential to generate localized air quality impacts, the project-specific traffic impact analysis (Intueor 2015) was reviewed to determine the potential for the creation of localized CO hot spots at congested intersection locations. The SCAQMD recommends a hot spot evaluation of potential localized CO impacts when vehicle to capacity (V/C) ratios are increased by 2 percent or more at intersections with LOS D or worse. The traffic impact analysis identified 65 key intersection locations along routes that accommodate much of the traffic traveling within the project alignment. Of the 65 key intersection locations, the traffic analysis concluded that for opening year (2020) and horizon year (2040), five intersections could potentially create a localized CO hot spot with the Project under any of the build alternatives.[6]

For these five intersections, local area CO concentrations were predicted using the CALINE4 traffic pollutant dispersion model with EMFAC2014 emissions factors. Traffic data for the PM peak hour were used, as volumes are generally higher and LOS lower during the PM peak hour than during the AM peak hour. The analysis of CO impacts followed the protocol recommended by Caltrans, published as *Transportation Project-Level Carbon Monoxide Protocol* (Garza 1997, reissued 2010). It is also consistent with procedures identified through the SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

Table 3.2-11 presents the estimated 1- and 8-hour CO concentrations for the existing conditions, the project opening year 2020 and horizon year 2040. Table 3.2-12 shows that the Project would not have a significant impact on 1-hour or 8-hour local CO concentrations due to mobile source emissions.

Because significant impacts would not occur at the intersections with the highest traffic volumes or lowest LOS located adjacent to sensitive receptors under any alternative, no significant impacts are anticipated to occur at any other locations in the study area because the conditions yielding CO hot spots would not be worse than those occurring at the analyzed intersections. Consequently, the

[6] Based on SCAQMD-recommended screening criteria, any intersection that (1) operates at LOS D or worse and (2) would experience an increase in peak-hour volume to capacity ratio of 2 percent or more as a result of project-related traffic should be evaluated for potential to create a localized CO hot spot.

sensitive receptors that are included in this analysis would not be significantly affected by CO emissions generated by increases in traffic that could occur with the Project. Because no project alternative would cause an exceedance or exacerbate an existing exceedance of an AAQS, localized operational air quality impacts would be less than significant.

Toxic Air Contaminants/Mobile-Source Air Toxics

The purpose of the Project is to enhance mobility and transit circulation in downtown Los Angeles. The Project has been determined to generate minimal air quality impacts related to CAA criteria pollutants and has been shown not to result in MSAT concerns. While the Project would not result in substantial changes in traffic volumes or vehicle fleet mix, VMT would be reduced under each build alternative when compared to the No Project Alternative. As MSAT emissions are a function of VMT, reductions in VMT would lead to reductions in project vicinity MSAT emissions. As such, potential impacts would be less than significant.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while during this same time vehicle-miles of travel are projected to increase by over 100 percent (FHWA 2012). This will further reduce the background level of MSAT.

Onsite Stationary Sources

Less-than-significant impact. Onsite stationary sources would be associated with the MSF. These sources would have negligible emissions of TACs, as MSF activities would be limited to storage, light maintenance, and cleaning tasks that do not require use of toxic substances in large quantities. Impacts from emissions of TACs would be less than significant.

Onsite Hazardous Materials

Less-than-significant impact. Storage of hazardous materials at the MSF would be required to meet all applicable codes and regulations. The likelihood of an accidental release would be low, and accordingly this impact would be less than significant.

Occupancy of Sensitive Individuals

Less-than-significant impact. The Project is a transportation facility and the time each passenger spends waiting for or aboard the streetcar would be relatively brief. Time spent waiting or aboard the streetcar is not occupancy within the meaning of this significance threshold. This impact would be less than significant.

Table 3.2-12. Modeled Maximum Carbon Monoxide Concentrations (ppm) at Receptors in the Vicinity of Affected Intersections during the PM Peak Hour

Intersection	Existing Year 2016[a]								Opening Year 2020								Horizon Year 2040							
	1-hour				8-hour				1-hour				8-hour				1-hour				8-hour			
	Exist.	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?	Exist.	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?	No Project	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?	No Project	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?	No Project	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?	No Project	7^{th} St Alt.	9^{th} St Alt.	Significant Impact?
Olive St./ 5^{th} St.	6.4	6.4	6.4	No	5.6	5.6	5.6	No	6.0	6.0	6.0	No	5.3	5.3	5.3	No	5.7	5.7	5.7	No	5.1	5.1	5.1	No
Figueroa St./ 7^{th} St.	6.4	6.4	6.3	No	5.6	5.6	5.6	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No	5.7	5.7	5.7	No	5.2	5.1	5.1	No
Figueroa St./ 8^{th} St.	6.8	6.9	6.8	No	6.0	6.0	6.0	No	6.2	6.3	6.3	No	5.5	5.6	5.6	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No
Olive St./ 9^{th} St.	7.3	7.3	7.5	No	6.3	6.4	6.5	No	7.3	6.6	6.6	No	6.4	5.7	5.7	No	6.2	6.2	6.2	No	5.5	5.5	5.5	No
Figueroa St,/ Olympic Blvd.	6.8	6.8	6.9	No	6.0	6.0	6.0	No	6.2	6.2	6.2	No	5.5	5.5	5.5	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No

Sources: EMFAC2014 and CALINE4 modeling by ICF (2016); Intueor 2015.

[a] Traffic data for 2014–2015.

NA = Not applicable.

Background concentrations of 5.1 and 4.6 ppm were added to the modeling for 1- and 8-hour results, respectively, based on SCAQMD projected future-year concentrations for Central Los Angeles (SCAQMD 2014a, 2014b).

The federal and state 1-hour standards are 35 and 20 ppm, respectively.

The federal and state 8-hour standards are 9 and 9.0 ppm, respectively. The difference lies in the rounding convention.

Odors

Less-than-significant impact. Potential odor sources during operation could include use of solvents, cleaners, lubricants, and similar substances at the MSF. However, MSF activities would adhere to applicable standards and regulations pertaining to the management of odor producing materials kept on site and therefore would not be likely to result in objectionable odors affecting a substantial number of people.

Alternative 3: 7th Street without Grand Avenue Extension

There would be no material difference in project operations under the 7th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, operation impacts of Alternative 3 would be similar to those of Alternative 2.

Alternative 4: 9th Street with Grand Avenue Extension

There would be no material difference in project operations under the 9th Street Alternative with Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, operation impacts of Alternative 4 would be similar to those of Alternative 2.

Alternative 5: 9th Street without Grand Avenue Extension

There would be no material difference in project operations under the 9th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, construction impacts of Alternative 5 would be similar to those of Alternative 3.

3.2.4 Mitigation Measures

As shown above in Table 3.2-7, localized emissions of NO_X, PM10, and PM2.5 during construction are predicted to exceed SCAQMD significance thresholds without incorporation of mitigation measures. The following mitigation measure would reduce impacts that may result from local construction emissions associated with the Project. This mitigation measure would be required for all of the project build alternatives.

> **MM-AQ-C1: Use cleaner-burning off-road construction equipment per the following schedule:** The contractor shall ensure that all off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 emission standards. In addition, all construction equipment shall be outfitted with best available control technology (BACT) devices certified by ARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. The City of Los Angeles Department of Public Works, Bureau of Engineering, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the Department of Public Works Contracts Administration Bureau Construction Inspector.

As shown in Table 3.2-13, prescribed Mitigation Measure **MM-AQ-C1** would reduce off-road NO_X, PM10, and PM2.5 exhaust emissions by approximately 36, 53, and 51 percent, respectively. With mitigation, worst-case localized NO_X emissions would be reduced from 94 pounds per day (ppd) to 61 ppd, which would be below the SCAQMD LST of 74 ppd. Worst-case emissions of PM10 and PM2.5 would be reduced to approximately 3 ppd and 2 ppd, respectively, which would be below the

SCAQMD LSTs of 5 ppd and 4 ppd, respectively. As such, localized emissions during construction would be less than significant with implementation of the mitigation measure.

Table 3.2-13. Worst-Case Localized Construction Emissions with Mitigation (pounds per day)

Description	NO_X	PM10[a]	PM2.5[a]
Worst-case Emissions Prior to Mitigation	94	6	5
Emissions Reduction with Mitigation	(33)	(3)	(2)
Maximum Emissions with Mitigation	61	3	3
Localized Significance Thresholds[b]	74	5	4
Threshold Exceeded?	**No**	**No**	**No**

Source: ICF International 2016.

Note: Construction Road Emissions Model and CalEEMod output sheets are provided in Appendix E.

[a] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[b] The project site is located in SCAQMD SRA Number 1. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and the project area that could be under construction on any given day (1 acre) that is within 25 meters of any individual sensitive receptor location.

3.2.5 Cumulative Impacts

The SCAQMD's approach for assessing cumulative impacts is based on their AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state CAAs. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It also addresses regional issues related to transportation, the economy, community development, and the environment. With regard to air quality planning, SCAG has prepared the RCP, which includes Growth Management and Regional Mobility chapters that form the basis for the Land Use and Transportation Control portions of the AQMP. These documents are utilized in the preparation of the air quality forecasts and consistency analyses included in the AQMP. Both the RCP and AQMP are based, in part, on projections originating with county and city general plans.

As detailed in Section 3.8, *Land Use and Planning*, the Project would be consistent with the *City of Los Angeles General Plan*. Because the Project would be consistent with the general plan, pursuant to SCAQMD guidelines, the Project would be considered to be consistent with the region's AQMP. As such, project-related emissions are accounted for in the AQMP, which is crafted to bring the Basin into attainment for all criteria pollutants.[7]

[7] State CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must

In addition, the mass regional emissions calculated for the Project would not exceed applicable SCAQMD daily significance thresholds, which are designed to assist the region in attaining the applicable state and national ambient air quality standards. Projects that exceed project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

The Project would comply with the SCAQMD's Rule 403 (fugitive dust control) during construction, as well as all other adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated by feasible mitigation, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on all projects Basin-wide, which would include all related projects. As such, the Project would not have a cumulatively considerable contribution to cumulative impacts with respect to criteria pollutant emissions.

be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

This page was intentionally left blank.

3.3 Cultural Resources

This section identifies cultural resources present within the project area, evaluates the potential project-related impacts on those resources, and provides mitigation measures, as applicable. The information provided herein is based on the survey results and recommendations contained in the *Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles Project* and the *Archaeological Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles Projec*t, both of which were prepared in February 2016 by ICF International. The ICF International reports are included in their entirety in Appendix G and Appendix H, respectively, of this document. The survey of cultural resources was conducted under the provisions of Section 15064.5 of the State CEQA Guidelines.

3.3.1 Regulatory Setting

Cultural resources fall within the jurisdiction of several levels of government. States and local jurisdictions provide the framework for the identification, documentation, and protection of such resources. The CEQA, *Public Resources Code* (PRC) Section 5024, the *City of Los Angeles Cultural Heritage Ordinance* (Los Angeles Administrative Code Section 22.130), and *California Health and Safety Code* Section 7050.5/California PRC Section 5097.9 are the primary laws that govern and affect the preservation of cultural resources of national, state, regional, and local significance.

3.3.1.1 Federal

National Register of Historic Places

The National Park Service's National Register of Historic Places (NRHP) is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources. To determine whether an undertaking could affect NRHP-listed or -eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. For projects involving a federal agency, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must meet the criteria for evaluation set forth in *Code of Federal Regulations* (CFR), Title 36, Part 60.4, as follows.

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history.

Among other criteria considerations, a property that has achieved significance within the last 50 years is not considered eligible for inclusion in the NRHP unless certain exceptional conditions are met.

3.3.1.2 State

California Environmental Quality Act

In accordance with Section 21084.1 of CEQA,[1] the proposed Project would have a significant adverse environmental impact if it "causes a substantial or potentially substantial adverse change in the significance of an historical resource."

According to CEQA (PRC Section 21084.1), *historical resources* include any resource listed or determined eligible for listing in the California Register of Historical Resources (CRHR). Properties listed or determined eligible for listing in the NRHP, such as those identified in the Section 106 process, are automatically listed in the CRHR, pursuant to 14 CCR Section 4851 (a)(1). Therefore, all *historic properties* under federal preservation law are automatically *historical resources* under state preservation law. Historical resources are also presumed to be significant if they are included in a local register of historical resources or identified as significant in a qualified historical resource survey.

State law in Title 14, *California Code of Regulations* (CCR) Section 4850, defines historical resource as follows:

> Any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California.

For the purposes of CEQA, historical resource is further defined under PRC Section 15064.5 as a "resource listed, or determined eligible for listing, in the California Register."

Section 15064.5 of the CEQA Guidelines sets forth the criteria and procedures for determining significant historical resources and the potential effects of a project on such resources. Generally, the lead state agency shall consider a historical resource to be *historically significant* if the resource meets any of the criteria for listing in the CRHR.

The City statutes and guidelines specify how historical resources are to be managed in the context of projects such as the proposed Project. Briefly, archival and field surveys must be conducted, and identified historical resources must be inventoried and evaluated in prescribed ways.

Paleontological Resources

In the State of California, fossil remains are considered to be limited, nonrenewable, and sensitive scientific resources. These resources are afforded protection under CEQA. Paleontological resources are provided protection as historical resources, as discussed in State CEQA Guidelines Section 15064.5(a) (3). The State CEQA Guidelines define historical resources broadly to include any object, site, area, or place that a lead agency determines to be historically significant.

---

[1] Section 21084.2 of CEQA, regarding effects on tribal cultural resources, does not apply to the Project because the notice of preparation was filed before July 1, 2015.

California Register of Historical Resources

The California State Historic Preservation Officer (SHPO) is tasked, among other duties, with maintaining an inventory of historic properties and the CRHR. Established by California PRC Section 5024.1(a) in 1992, the CRHR serves as "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent feasible, from substantial adverse change." According to California PRC Section 5024.1(c), the CRHR criteria broadly mirror those of the NRHP. The CRHR criteria are found at California PRC Section 5024.1(c) as follows:

> An historical resource must be significant at the local, state, or national level, under one or more of the following four criteria:
>
> 1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
> 2) It is associated with the live of persons important to local, California, or national history; or
> 3) It embodies the distinctive characteristics of a type, period, region, or method or construction, or represents the work of a master, or possesses high artistic values; or
> 4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The minimum age criterion for the CRHR, as with the NRHP, is 50 years. Properties less than 50 years of age may be eligible for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance. In addition to meeting one or more of the historical significance criteria, the resource must possess integrity. Integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance."

There are several ways for resources to be included in the CRHR. A resource can be *listed* in the CRHR based upon a nomination and public consideration process. Additionally, a resource that is subject to a discretionary action by a governmental entity will be evaluated for *eligibility* for the CRHR. As previously stated, properties listed in or formally determined eligible for listing in the NRHP are *automatically* listed in the CRHR.

California Health and Safety Code, Section 7050.5/*California Public Resources Code*, Section 5097.9

Archaeological sites containing human remains shall be treated in accordance with the provisions of *California Health and Safety Code* (HSC) Section 7050.5 and California PRC Section 5097.9. Under HSC Section 7050.5, if human remains are discovered during any project activity, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area of the discovery shall be protected, and consultation and treatment shall occur as prescribed by law. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

3.3.1.3 Local

City of Los Angeles Cultural Heritage Ordinance

The City of Los Angeles maintains a list of all sites, buildings and structures, which have been designated through the *Cultural Heritage Ordinance* as Historic-Cultural Monuments.

Historic-Cultural Monument

Section 22.171.7 of the *Cultural Heritage Ordinance* states that a Historic-Cultural Monument is any site (including significant trees or other plant life located on the site), building, or structure of particular historic of cultural significance to the City of Los Angeles, including historic structures or sites in which the broad cultural, economic, or social historic of the nation, state, or community is reflected or exemplified; or which is identified with historic personages or with important events in the main currents of national, state, or local historic; or which embodies the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period, style, or method of construction; or a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

Any person may apply for the proposed designation of a Historic-Cultural Monuments (HCMs) and the Cultural Heritage Commission determines whether or not the proposed designation merits consideration. If the Commission recommends approval of the application and it is included in the list of HCMs, no permit for the demolition, substantial alteration or relocation of an HCM may be issued (Section 22.171.14) unless:

1. The Superintendent of Building or City Engineer determines that demolition, relocation or substantial alteration is necessary in the interest of public health, safety, or general welfare;
2. The substantial alteration complies with the Secretary of the Interior's Standards for Rehabilitation;
3. The substantial alteration protects and preserves the historic and architectural qualities and the physical characteristics that make the site, building, or structure a designated HCMs; and
4. The proposed action is in compliance with CEQA PRC Section 21000 et seq.

Historic Downtown Los Angeles Design Guidelines

The 2002 *Historic Downtown Los Angeles Design Guidelines* (HDLADG) were developed to aid in implementing effective preservation and adaptive reuse projects that protect, highlight, and promote downtown's historic character. Based on the Secretary of the Interior's Standards for the Treatment of Historic Properties, the HDLADG apply to properties located along portions of Main, Spring, Broadway, and Hill Streets, between approximately 3rd Street on the north and 9th Street on the south. This district contains a significant concentration of historic office buildings, department store buildings, and the largest and most architecturally impressive collection of early twentieth-century movie theaters found anywhere in the United States.

Although focused almost entirely on building design, retrofit, maintenance, appropriate building addition design and integration, and signage design, HDLADG guidance is premised on the eventual reintroduction of streetcars and/or trolley lines in the Historic Downtown neighborhood. The HDLADG states that new construction should be planned so that it results in minimal impacts on primary historic building façades.

Broadway Streetscape Master Plan

The *Broadway Streetscape Master Plan* (BSMP) provides a vision for design improvements along Broadway, a menu of design tools and streetscapes, and other design criteria germane to design within individual street blocks. It presents eight overarching design principles. Among these principles are keeping the new streetscape elements simple, with clean lines and materials, preserving views to historic key buildings, and promoting environmentally responsible design.

Under the provisions of the BSMP, street curb extensions, crosswalk and street paving, transit stop locations, and all signage (including wayfinding and informational signage) require review by the City Planning Department. Also under the BSMP, the Los Angeles Department of Transportation (LADOT) reviews all street right-of-way changes to median strips, crosswalks, bus stop locations, directional and informational signage, bicycle facilities, and any changes to the standard LADOT menu of hardware, colors, and materials.

Although there are numerous non-historic replacement streetlight poles along Broadway, the surviving so-called “Broadway Rose” streetlight bases are considered worthy of retention as part of the streetscape proposed under the BSMP (even though they are not considered historic elements). These bases, as well as historic terrazzo sidewalk installations, historic sidewalk vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers, are itemized in the BSMP and are considered character-defining historic fabric.

Los Angeles CEQA Thresholds

The City of Los Angeles has developed thresholds for determining impact significance pursuant to CEQA (Section 21068; 2015 State CEQA Guidelines, Section15064) and has published those thresholds in the *L.A. CEQA Thresholds Guide* (2006). These thresholds (City Thresholds) are to be used to determine the significance of potential impacts resulting from or associated with the Restoration of Historic Streetcar Service in downtown Los Angeles. The *L.A. CEQA Thresholds Guide* (2006) states that the following impact significance factors shall apply to archaeological resources.

Archaeological Resources

A project would normally have a significant impact on archaeological resources if it could disturb, damage, or degrade an archaeological resource or its setting that is found to be important under the criteria of CEQA because it:

- Is associated with an event or person of recognized importance in California or American prehistory or of recognized scientific importance in prehistory;
- Can provide information that is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions;
- Has a special or particular quality, such as the oldest, best, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or
- Involves important research questions that historical research has shown can be answered only with archaeological methods.

Paleontological Resources

The *Conservation Element* of the *City of Los Angeles General Plan* (adopted September 2001) specifically addresses paleontological resources in Section 3 of Chapter 2. The *Conservation Element's* paleontological objective is to "protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes." Moreover, its policy is to "continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities."

Additionally, the City of Los Angeles has adopted as the City's CEQA Guidelines (2002) "all of the State CEQA Guidelines, contained in title 15, *California Code of Regulations*, Sections 15000 et seq., and incorporates all future amendments and additions to those guidelines as may from time to time be adopted by the State."

The following sections provide the historic archaeological and ethnographic, and paleontological context for the project alignment, a discussion of the methodology for identifying and evaluating properties in the project alignment for NRHP and CRHR eligibility, and the application of the criteria of adverse effects.

3.3.2 Environmental Setting/Affected Environment

The project alignment is in downtown Los Angeles. This is an urban setting, with multi-story civic, commercial, entertainment, and residential buildings interspersed with at-grade parking lots, multi-story parking garages, and parks. The project alignment includes portions of several neighborhoods and districts that illustrate the typical uses.

Most of the geography of the project alignment is flat, with a few exceptions. The north-south Broadway, Hill, and Figueroa Streets are relatively level boulevards in the project alignment, although Hill Street is slightly elevated in comparison to Broadway, and there is a slight rise at the north end of Broadway. Bunker Hill rises up from the west side of Hill Street, north of 6th Street. As a result, 1st Street has a gradual climb from South Broadway to Grand Avenue.

The section of 1st Street between South Broadway and Grand Avenue provides for traffic in both the eastbound and westbound directions using five lanes, except near the intersection with Grand Avenue, where the road widens to eight lanes. Grand Avenue is geographically elevated above most of downtown Los Angeles. It is generally two lanes across, with some widening for turn lanes at intersections, and carries northbound and southbound traffic between 1st and 2nd Streets.

Currently, Hill Street is a two-way street with four traffic lanes. Hill Street also includes a center turning lane. Broadway has three lanes: one southbound and two northbound. Between Olympic and 11th Streets, South Figueroa Street has traffic lanes for both northbound and southbound traffic and is seven lanes across. North of Olympic Boulevard, South Figueroa Street becomes a one-way street, with only northbound traffic using four to five lanes. Ninth Street is a one-way street, with only eastbound traffic using four lanes between South Figueroa Street and Grand Avenue and three lanes from Grand Avenue to Broadway in the project alignment. From South Broadway to South Flower Street, 11th Street is a two-lane, one-way western route. At South Flower Street, this road widens to six lanes and includes eastbound traffic. Between South Figueroa Street and South Broadway, 7th Street carries eastbound traffic in one lane and westbound traffic in one to two lanes, with a parking/turn lane on either side and a center turn lane at most intersections.

The corridors in the project alignment are heavily used city streets with both vehicular and bus traffic. There are a few remnants related to the streetcar era, such as Angel's Flight and the Subway Terminal Building (now an apartment building known as Metro 417), as well as the metal anchor hooks on buildings that held cables for the streetcars.

The setting includes sidewalks of various widths, mature and newly planted street trees, various styles of light poles, parking meters, bike racks, trashcans, and other related street furniture. Additionally, traffic lights include signal heads on one-story high poles at corners, as well as two-story elevated arms that hang over the intersections and pedestrian crosswalks. Most buildings have been built out to the public right-of-way/sidewalk.

3.3.2.1 Paleontological Setting

The project site is located in the Los Angeles Basin, a roughly north-south trending depositional trough located in the northwestern portion of the Peninsular Ranges geomorphic province. The Los Angeles Basin has been the site of discontinuous marine deposition since the Late Cretaceous (99.6 millions of years ago [Ma]); the Los Angeles Basin began to fill with alluvium about five Ma and eventually was exposed above sea level and terrestrial deposition began.

Surface deposits in the project area are mapped (Dibblee 1989) as younger Quaternary alluvium, consisting of floodplain deposits of silt, sand, and gravel of Holocene age (10,000 years Before Present [B.P.] to Recent). Geotechnical information for various area of downtown Los Angeles indicates that disturbed sediments and previously placed fill materials, consisting primarily of brown to dark brown, loose to dense, silty sand with some gravel, brick and asphalt fragments, are a typical profile of sediment under the street portions of the project alternatives. Fill ranges in depth up to approximately 10 feet below the ground surface in downtown Los Angles, except in areas more deeply disturbed by basement or subterranean parking excavations. Alluvial sediments, apparently undisturbed, underlie the fill and extend to depths ranging between 25 to 60 feet below the ground surface. Deposits at these depths in the Los Angeles Basin are often considered to be older Quaternary alluvium of Pleistocene age (2.6 MA to 10,000 BP). This alluvium generally consists of light brown to dark brown, dense to very dense, poorly graded sand and silty sand. Underlying this alluvium is Fernando Formation bedrock of early Pliocene age (3.4 Ma to 5.5 Ma)

3.3.2.2 Prehistoric Setting

The prehistoric occupation of Southern California is divided chronologically into four temporal phases or horizons (Moratto 1984). Horizon I, or the Early Man Horizon, began at the first appearance of people in the region, approximately 12,000 years ago, and continued until about 7,000 years B.P. Although little is known about these people, it is assumed that they were semi-nomadic and subsisted primarily on game.

Horizon II, also known as the Millingstone Horizon or Encinitas Tradition, began around 7,000 B.P. and continued until about 3,500 B.P. The Millingstone Horizon is characterized by widespread use of milling stones (manos and metates), core tools, and few projectile points or bone and shell artifacts. This horizon appears to represent a diversification of subsistence activities and a more sedentary settlement pattern. Archaeological evidence suggests that hunting became less important and that reliance on collecting shellfish and vegetal resources increased (Moratto 1984).

Horizon III, the Intermediate Horizon or Campbell Tradition, began around 3,500 B.P. and continued until about 1000 B.P. Horizon III is defined by a shift from the use of milling stones to increased use of mortar and pestle, indicating a greater reliance on acorns as a food source. Projectile points become more abundant and, together with faunal remains, indicate increased use of both land and sea mammals (Moratto 1984).

Horizon IV, the Late Horizon, which began around 1000 B.P. and terminated with the arrival of Europeans, is characterized by: dense populations; diversified hunting and gathering subsistence strategies, including intensive fishing and sea mammal hunting; extensive trade networks; use of the bow and arrow; and a general cultural elaboration (Moratto 1984).

3.3.2.3 Native American Ethnographic Setting

The Project's Area of Potential Effects (APE) lies within Gabrielino/Tongva ethnographic territory. The term *Gabrielino* refers to Native American groups historically associated with the San Gabriel Mission. Gabrielino territory is not well defined, but is generally believed to incorporate the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. It includes the entire Los Angeles Basin, the coast between Aliso Creek and Topanga Creek, and the islands of San Clemente, San Nicholas, and Santa Catalina. The ancestors of the Gabrielinos likely arrived in the Los Angeles Basin around 2500 years B.P. as part of what Kroeber (1925) referred to as the "Shoshonean Wedge." By 1500 B.P., permanent villages were built in the lowlands along rivers and streams. Over 50 villages may have been occupied simultaneously with populations of between 50 and 200 people per village (Bean and Smith 1978).

Gabrielino houses were primarily domed, semi-subterranean, thatched structures of locally accessible materials including tule, fern, and carrizo. Principal game included deer, rabbit, fish, sea mammals, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, and other birds. Acorns were the most important single food source and villages seem to have been located near water resources necessary for the leaching of acorns. Grass seeds were the next most abundant food source. Seeds were parched, ground, and cooked as a mush in various combinations. Additional food sources included various greens, cactus pods, yucca buds, bulbs, roots, and tubers (Bean and Smith 1978). Tools for food acquisition, storage, and preparation included an inventory made from widely available materials. Hunting tools included shoulder-height bows with fire-hardened wood or stone-tipped arrows, curved throwing sticks, rabbit nets, slings, and traps. Seeds were ground with handstones on shallow basin metates. The same granites were made into mortars and pestles for pounding acorns or small game. Coiled and twined baskets and steatite bowls were used in food gathering, preparation, storage, and serving. Other utensils for food preparation included wooden food paddles, brushes, tongs, tweezers, and wooden digging sticks (Bean and Smith 1978).

One major ethnographic Gabrielino village close to the project site was the village of Yaanga, one of the largest Gabrielino villages in the region. Its precise location is uncertain because the original community was abandoned sometime prior to 1836 (Robinson 1952:16). Yaanga was likely located slightly to the south of the old Spanish Plaza of Pueblo de Los Angeles, near where the former Bella Union Hotel was later built (Dillon 1994:30) on Main Street above Commercial Street (Newmark 1916:25–26). The reference to this well-known nineteenth-century Los Angeles hotel places this village location about two city blocks northwest of the project site. The village of Yaanga was later instrumental in the founding of Pueblo de Los Angeles because the Spanish Colonial governor wanted a Native American village population to support the new civil community with labor and materials.

3.3.2.4 Historic Context

A detailed Historic Context of downtown Los Angeles can be found in Appendix H. This abbreviated context focuses on the streetcar lines in the study area only.

Downtown Development and the Streetcar

The development of downtown and Greater Los Angeles was inexorably linked to the early transportation systems in the City. Although the historic core of downtown (streets like Temple, Main, Spring, Broadway, and Hill) was not as dependent on streetcar lines for residential growth as outlying areas, the streetcar played an important role in transporting the necessary workers and retail consumers from distant areas to downtown. Early subdivision activity adjacent to the pueblo and Main Street expanded outward along horse car, cable car, and electrified streetcars in the 1870s and 1880s. Cable cars and electric streetcars had the greatest impact on neighborhoods just outside the historic core. (Los Angeles Conservancy 1990: II-11–II-12).

Figure 3.3-1. Looking south down Broadway at the intersection of 5th Street in 1926. Streetcars proceed down the center of Broadway.

Source: Los Angeles Public Library

By the mid-1890s, electrified interurban streetcars connected downtown to cities as far as Pasadena and Santa Monica. With a downtown now conveniently accessible to outlying areas, department stores on 7th Street and theaters on Broadway could draw enough people to create a major hub of business, retail, and entertainment activity. By 1911, the region had a streamlined system that focused on downtown, making it the single most accessible point in Southern California. The completion of the Subway Terminal Building at 417 South Hill Street in 1925 would help shift the center of downtown activity farther to the west from the traditional Main Street corridor. The terminal's completion coincided with the growth of retail stores on 7th Street that were west of Broadway (Roseman 2004: 7–11).

Downtown Neighborhoods

Bunker Hill and Angels Flight

Of the neighborhoods directly adjacent to the historic core of downtown Los Angeles, Bunker Hill (originally called "Olive Hill") was among the first to have its initial development tied directly to the expansion of the streetcar system in Los Angeles. The modern boundaries of Bunker Hill consist of Temple Street to the north, 5th Street to the south, Olive Street to the east, and the Harbor Freeway to the west (Comer 1996:16–18).

Although some residences dotted the landscape of Bunker Hill prior to the 1880s, the development of the area was hindered by steep topography. The hill proved especially inaccessible to early horse-drawn streetcars, which were prevalent in downtown during the 1870s and 1880s. When cable car technology was introduced to Los Angeles by the late 1880s, streetcars could finally travel the steep terrain of Bunker Hill. The Temple Street Cable Railway ran three miles from Main Street to the Dayton Heights neighborhood along Temple Street, while the 2nd Street Cable Railroad ran along 2nd Street from Spring Street to Texas Street. Streetscapes, water systems, and other infrastructure improvements also made the area more attractive to investment. Bunker Hill would soon experience an intensive residential building boom, which resulted in a number of fashionable Queen Anne and Eastlake style dwellings at the crown of the hill (Post 1989:49–52).

Figure 3.3-2. A View of 3rd Street, 3rd Street Tunnel, and Angels Flight (to the left) in 1901.

Source: Los Angeles Public Library

The construction of the Angels Flight Railway in 1901 provided a method for traveling the steepest portion of Bunker Hill, near 3rd Street, which had no streetcar access at the time. Although the 3rd Street tunnel was constructed under Bunker Hill in 1901, it did not provide access to the top of the hill. Increased housing density in Bunker Hill, along with development of the commercial core to the east and south of the line, helped ensure strong patronage. After opening in December 1901, the railway became an important connection between the residential hillside and the commercial core to the east. Development of Bunker Hill would continue to intensify as stately hotels and apartment buildings would be added to the existing fabric of single-family dwellings (Comer 1996:35–42).

Broadway Theatre and Commercial District

The Broadway Theatre and Commercial District was listed on the NRHP on May 9, 1979. The original NRHP district, which encompassed 300 to 939 South Broadway, was expanded on April 12, 2002, to now encompass 242 to 947 South Broadway. A list of the contributors and non-contributors to the Broadway Theatre and Commercial District can be found in Appendix H.

The Broadway District is highly representative of a commercial and entertainment center in downtown Los Angeles that emerged principally in the first quarter of the twentieth century. The area consists of a collection of large office buildings, department stores, and theaters designed in traditional architectural styles, such as Beaux Arts. Construction of the new city hall on Broadway during the 1890s was a primary impetus for changing the neighborhood from a residential to a commercial district. Large business structures, such as the Bradbury Building, the Grand Central Market, the Nelson Building, and the Jacoby Brothers Store began to change the Broadway skyline and pulled the downtown business center farther to the south from 3rd Street. (Roseman 2004:61–63).

Figure 3.3-3. Crowds crossing the intersection of 7th Street and Broadway, looking north on Broadway in 1928. A Yellow Car is seen in the foreground on Broadway while a Red Car (on the right side) is about to cross Broadway along 7th Street.

Source: Los Angeles Public Library

During the first half of the twentieth century, the Los Angeles streetcar system made the district accessible to patrons throughout Los Angeles. By the early 1900s, the Los Angeles Railway Yellow Cars became a familiar sight along Broadway as they carried shoppers, theatergoers, and workers to their desired destinations with regular stops along the route. The interurban Red Cars also played a role by transporting people to Broadway from outlying suburban locations in Southern California. Before the widespread use of automobiles and the development of the freeway system, the streetcars provided an important link between downtown commerce and the greater Los Angeles region (Los Angeles Conservancy 1990:II-25–II-28).

The theaters on Broadway are of particular historical importance because they provided a center for drama, comedy, and vaudeville presentations in Los Angeles before the advent of motion pictures. A number of Broadway's theaters from this period continue to convey cultural and architectural significance. Among the earliest theaters built on Broadway are the Cameo at 528 South Broadway, the Arcade at 534 South Broadway, and the Palace at 630 South Broadway.

Figure 3.3-4. Looking north on Broadway from 7th Street during the Armistice Day parade in 1944. Yellow Cars are seen in the center of the street.

Source: Los Angeles Public Library

Movie palaces in the district reached an even more elevated level of grandeur with the construction of the Million Dollar Theater at 307 Broadway in 1918. Albert C. Martin designed the richly detailed Churrigueresque style building for the legendary showman Sid Grauman. The theater also helped usher in an era of increasingly grand theaters along Broadway in the 1920s. The 2,190-seat Orpheum (842 South Broadway) was constructed in 1926 in the Beaux Arts style and would play host to many of the biggest names in show business. A year after the construction of the Orpheum, the Gothic-themed United Artist Theatre opened. The building was the product of the prolific Los Angeles-based architects Walker and Eisen, who designed other noteworthy buildings downtown.

Theater construction in the district reached its apex in 1931 when the last of the great movie palaces, the Los Angeles Theatre, was opened at 615 South Broadway. Designed by Charles Lee, the lavish French Baroque-inspired building is distinguished by its huge accented columns on the primary façade. Other theaters from the period include the Roxie at 518 South Broadway, the Globe at 744 South Broadway, the Tower at 802 South Broadway, and the Rialto at 812 South Broadway (Gebhard and Winter 2003:249–251).

Spring Street Financial District

The Spring Street Financial District was listed on the NRHP on September 12, 1978, and is located from 354 to 704 South Spring Street. For most of the twentieth century, Spring Street served as the business center of Los Angeles. Once known as the "Wall Street of the West" for its concentration of banks and other financial institutions, the district consists of an architecturally homogeneous collection of buildings along Spring Street, from 7th Street north to 4th Street. Architecturally, Neo-Classical, Commercial, and Art Deco buildings with grand terra cotta façades define this neighborhood.

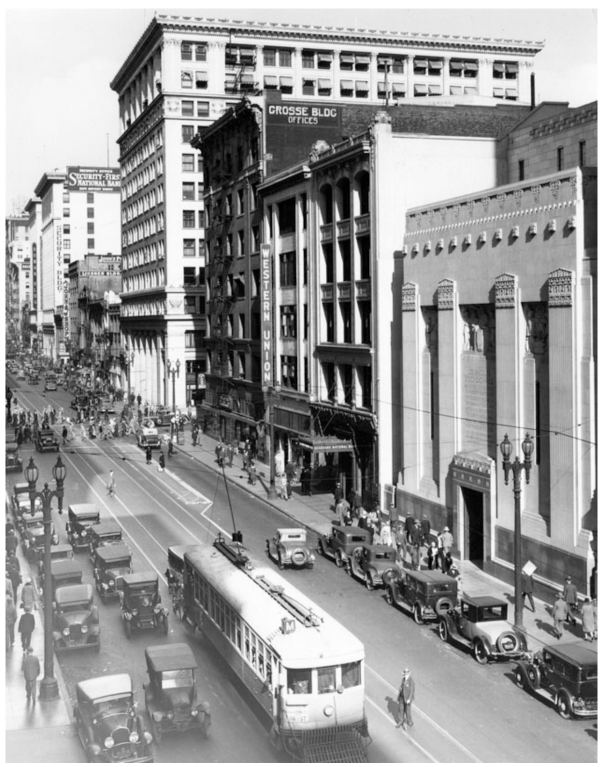


Figure 3.3-5. View of Spring Street looking north between 6th and 7th Streets in 1932. On the right is the Los Angeles Stock Exchange building (later the Pacific Coast Stock Exchange). A Yellow Car is traveling south down Spring Street.

Source: Los Angeles Public Library

Although the Spring Street Financial District is east of the study area for the Project, it is discussed as part of the historic context because the Spring Arcade Building, which is listed as a contributor to both the Spring Street Financial District and the Broadway Theatre and Commercial District, is in the study area. The address for the Spring Arcade Building is 538–544 Broadway and 531–545 Spring Street.

7th Street

During the 1910s and 1920s, 7th Street developed as a commercial district noted for its upscale retail and distinctive office architecture, which continues to define its modern built environment. The area is roughly a mile south of the original pueblo and had been agricultural land until the first residences began to appear in the late 1870s. Due to the commercial expansion of downtown in the early 1900s, the street evolved farther from residential to commercial uses. The growth of the area by the 1910s represented a transition in downtown commercial retailing from turn of the century, mixed-use buildings to the larger, single-use, specialized buildings. By 1920, 7th Street featured a number of major retailers and attracted thousands of shoppers, many of which arrived on streetcars. The Yellow Cars provided many stops along the street and became a popular mode of transportation for downtown visitors. The corner of 7th and Broadway would soon become one of the most bustling intersections in the City due to a plethora of nearby retail and entertainment establishments. The 7th Street corridor continued to grow throughout the 1920s with the addition of several large-scale office buildings. The architectural character of the street was typified by Beaux Arts style buildings constructed in the early twentieth century. Several of these buildings had undergone façade makeovers in the Art Deco style by the 1930s (Los Angeles Conservancy 1990:II-26–II-28).

Both the Bullock's Department Store and the J. W. Robinson Company served as two of the early catalysts for retail growth along the 7th Street corridor. John Bullock set the tone for the area's specialized, upscale department store theme when he opened his flagship Bullock's store at the corner of Broadway and 7th (319 West 7th Street) in 1906. The store would experience continued expansion at the location and eventually occupy six adjoining structures. In 1915, J. W. Bullocks Company opened the first major department store on 7th Street to the west of Broadway. Located at 600 West 7th Street, the store became an immediate success and spurred a westward expansion of commercial business along the street in an area that had been previously been considered the outskirts of the downtown retail core. Additional retail buildings from the period include the Coulter Dry Goods Company Building at 518 West 7th Street, Ville de Paris at 420 West 7th Street, and later the Barker Bros. Building at 818 West 7th. The Renaissance Revival styled Barker Bros. Building is of particular significance because it was among the largest furniture stores in the country and features a remarkable exterior façade that remains in nearly original condition (Los Angeles Conservancy 2010:1–6).

Figure 3.3-6. A view of the intersection of Broadway and 7th Street, looking west on 7th Street in 1926. On the corner is the Loew's State Theatre. Streetcars are seen at the center of the street.

Source: Los Angeles Public Library

The construction of single-use office buildings added another component to the architectural fabric of 7th Street. Between 1920 and 1928, 13 large office buildings were constructed on 7th Street alone. Built in 1911, the Union Oil Building at 215 West 7th Street represents one of the earliest examples of this large, spacious type of office construction. Office buildings from the 1920s include the Romanesque style Fine Arts Building at 811 West 7th Street, the Bank of Italy at 505 West 7th Street, the Financial Center Building at 140 West 7th Street, the Transportation Building at 122 East 7th Street, and the Roosevelt Building at 727 West 7th Street. The massive Renaissance Revival style Roosevelt Building was said to have been the largest office building in Southern California upon its opening. The Financial Center Building stands as yet another example of Beaux Arts style along the street and is listed on the NRHP. Both the Fine Arts Building and the Transportation Building display the stylish and artistic work of architects Walker and Eisen (Gebhard and Winter 2003:238, 252).

Figure 3.3-7. Northeast corner of Flower and 7th Streets looking at the east elevation of the Roosevelt Building circa 1940. A streetcar is traveling east on 7th Street.

Source: Los Angeles Public Library

In addition to retail and office buildings, 7th Street was also home to theater venues near Broadway and the Los Angeles Athletic Club. Two theaters of particular note are the Pantages Theatre at 401 West 7th Street and the Loew's State Theatre at 300 West 7th Street. The Los Angeles Athletic Club, a local institution, moved to its current location at 431 West 7th Street in 1912 with a layout that included a clubhouse, athletic facility, and hotel. It also featured an Olympic-size pool on the sixth floor, which still remains today, and was an engineering feat in its time (Los Angeles Conservancy 2010:4). The club is also credited with introducing organized track and field competition to California, which would later be adopted into prep and collegiate sports programs in the twentieth century (Starr 2005:299).

As a result of this study, a historic district designated as the W 7th Street District is being recommended eligible for the NRHP. The associated DPR forms for the proposed district are located in Appendix H.

South Park

The neighborhood commonly referred to as South Park encompasses an area roughly bounded by 8th Street to the north, the Santa Monica Freeway to the south, Main Street to the east, and the Harbor Freeway to the west. The name "South Park" is a fairly recent moniker created for the marketing and redevelopment of the neighborhood; historically, it was not referred to by this name. The neighborhood was first developed as a middle-class residential area during the 1880s and evolved into an area characterized by medical, commercial (especially automotive related), and retail businesses intermixed with residential flats, apartments, and rooming houses during the twentieth century (City of Los Angeles:2, 7).

South Park was traditionally recognized as the home to two important institutions during the first half of the twentieth century: William Randolph Hearst's *Examiner* newspaper (later the *Herald-Examiner*) and the California Hospital. The building formerly occupied by the *Herald-Examiner* at 1111 South Broadway was constructed in 1914 and designed by renowned architect Julia Morgan in association with William Dodd and William Richards. The striking Mission Revival style building with Italian Revival and Moorish influences stands as one of Morgan's few works in Los Angeles.

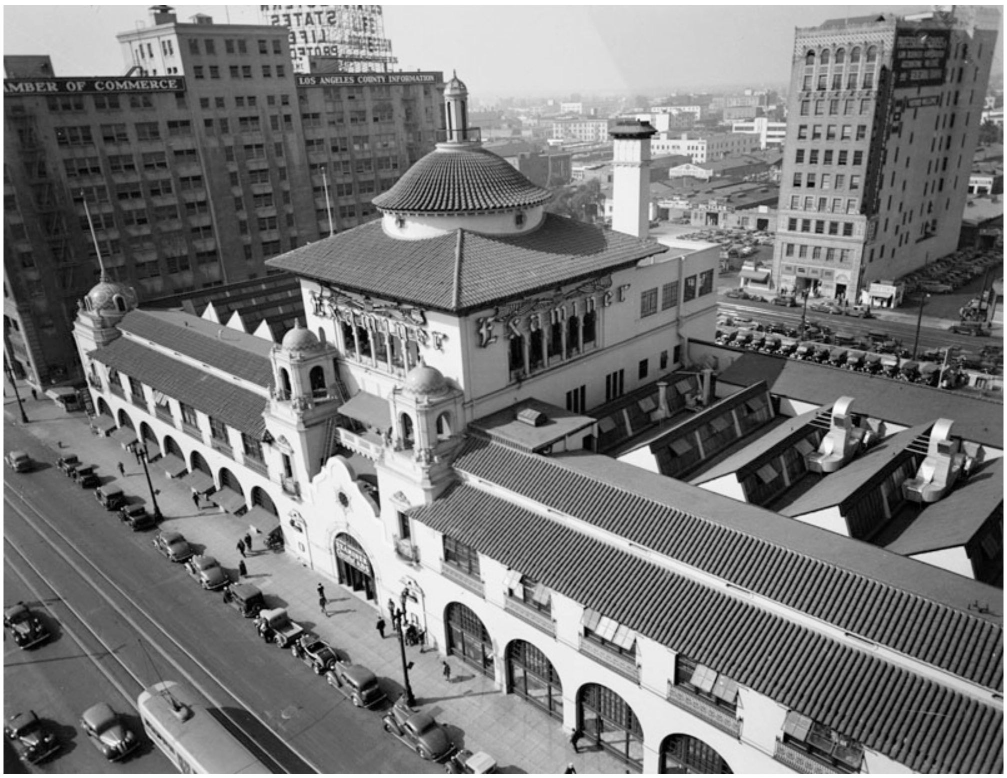


Figure 3.3-8. Exterior of the *Examiner* newspaper building at 1111 South Broadway in 1937. A Yellow Car can be seen at the bottom of the photo on Broadway.

Source: Los Angeles Public Library

California Hospital represents one of the early hospitals in Los Angeles. First opened at 1414 South Hope in 1898, the hospital rapidly expanded into neighboring buildings to accommodate additional patients. In 1921, the Lutheran Hospital Society of Southern California purchased the hospital and would operate it for several decades. After the original hospital building proved inadequate by the 1920s, the Society built a nine-story hospital in 1926 at the original Hope Street location. The brick hospital would serve Los Angeles until it was severely damaged by the Northridge Earthquake of 1994. The building was demolished in 2000, although California Hospital continues to operate a hospital tower at 1401 South Grand Avenue, which was built in 1987.

The Streetcar in Los Angeles

Electric Streetcars and Interurbans (1885–1963)

While there had been talk of a street railway line in Los Angeles since the 1860s, it was not until the 1870s that there was the necessary economic boom and critical mass of population for its development. Judge Robert M. Widney incorporated the Spring & 6th Street Horse Railroad Co. in February of 1874 and brought the first car line into fruition in the downtown. In 1885, Los Angeles became one of only a handful of American cities with a cable car system thanks to the construction of the 2nd Street Cable Railroad, which ran west from Spring Street. The previous horse car lines simply could not operate on the steep grades that hemmed in downtown. Now neighborhoods with hilly terrain could be accessed by cable cars.

By the late 1880s, the cable car lines would lose patronage to the fledgling electric streetcars. During this period, electric streetcar technology, and specifically the electric motor, had been refined and successfully introduced in major East Coast cities. While cable cars continued to function in Los Angeles under the Pacific Railway Company, the line would face new competition from an emerging electric streetcar company named the Los Angeles Consolidated Electric Railway (LACE). Under the leadership of land developer Moses Sherman, LACE would rapidly expand throughout the downtown core. While the cable cars of Pacific Railway continued to maintain the largest ridership of the City's streetcar lines in the early 1890s, its finances were precarious and its technology became increasingly antiquated. Pacific Railway struggled to remain solvent and was acquired by LACE by fall of 1893, bringing a precipitous end to horse and cable car lines previously run by Pacific Railway. With a virtual monopoly over streetcars in Los Angeles, LACE electrified all of its remaining horse and cable car lines by the summer of 1896, officially ushering in the era of the electric streetcar (Post 1989:101–111).

Even with near complete control of streetcar lines in Los Angeles, LACE would soon face financial difficulties of its own due in part to a national depression in the 1890s as well as mismanagement of the company. To avoid foreclosure, Moses Sherman relinquished control to company bondholders who formed a new railway corporation called the Los Angeles Railway Corporation (LARy), which would assume control of the electric streetcar system. By 1900, the yellow and brown cars of the Los Angeles Railway had extensive lines running throughout downtown Los Angeles and into neighborhoods such as Angelino Heights, East Los Angeles, and Boyle Heights. Real estate mogul and railroad baron Henry E. Huntington gained control of LARy, in 1898. In 1901 Huntington would also begin to assemble the expansive interurban Pacific Electric (PE) Red Cars system, which would span multiple counties in Southern California. The entirely separate LARy system would continue to be prevalent in the downtown core (Post 1989:105–109).

Through intermediaries, the Southern Pacific Railroad purchased an ever-increasing amount of the Pacific Electric Company's stock as part of a quiet expansion effort into Southern California. By the 1910s, Huntington proceeded to further loosen his hold on his streetcar empire as he turned his attention to his public utility companies and pursued his passion for collecting rare books and art. In 1911, the Southern Pacific Railway forced Huntington out of Pacific Electric completely. The companies purchased by Southern Pacific would be combined under the Pacific Electric name. Huntington would still maintain control of the one streetcar system, the Los Angeles Railway, which would remain in the Huntington trust until 1945. This would leave only three streetcar companies operating in Los Angeles after 1911: the Pacific Electric, the Los Angeles Railway, and the small

Glendale & Montrose Electric Railway, which consisted of only five cars and two lines operating largely in Glendale and La Canada (Walker 1977:45).

By the time of the 1911 merger, Pacific Electric Red Cars had become the largest interurban electric railway in the world in terms of miles of tracks (1,200 route miles) throughout Southern California. Nevertheless, Huntington's Yellow Cars, which provided quick, local service in Los Angeles and operated 90 percent of its lines within the City limits, would become the true workhorse of the regional transit system. By 1924, LARy carried about twice as many passengers as the Pacific Electric, serving 255.6 million passengers compared to the Red Cars 100.9 million (Masters 2013).

Both the LARy Yellow Cars and Pacific Electric Red Cars reached the peak of their expansion and usage by the 1920s and 1930s, when they were commonly used to take people to popular shopping and entertainment districts in downtown Los Angeles from outlying suburbs that were not as well served by commercial retail. Despite the widespread use of both streetcar systems, the first indication of their decline began to appear as early as the 1920s. A vibrant automobile culture had entrenched itself in Southern California by the 1920s as car ownership rapidly grew from year to year and became increasingly affordable to a growing middle-class. Where the streetcars had previously been the only connection of outlying areas to central Los Angeles in the pre-automobile era, auto travel provided a desirable alternative and was supported by an expanding publicly funded road network. In the case of the Pacific Electric, real estate development had driven interurban expansion, and passenger operation was typically a loss leader. When most of the real estate holdings had been developed by the 1920s, this primary source of profit began to be depleted, and the least-used Pacific Electric car lines converted to buses as early as 1925 (Crump 1965:203–209). The real reason Southern Pacific Railway had been so keen to acquire the Pacific Electric routes was that far more profitable freight operation was possible compared to the Pacific Electric's standard gauge long-distance tracks. The Los Angeles Railway, with its tight inner city curves and narrow gauge street operations, never carried more than a token amount of perishable freight. When the Great Depression came in 1930, the management of the Glendale & Montrose begged the Pacific Electric to buy out their operations. When the Pacific Electric refused, the Glendale & Montrose folded, and its tracks were sold to the Union Pacific Railway for freight operations only.

Both remaining rail transit companies experienced a boom in ridership during World War II due to gasoline, oil, and rubber rationing; too many forces were working against the sustainability of streetcars and interurbans. Due to high operational costs and anemic ridership, more and more of the underutilized lines to outlying communities were replaced by less costly bus lines during the 1930s and 1940s (Crump 1965:206–210).

Figure 3.3-9. A retired Los Angeles Transit Lines streamliner wearing government Los Angeles Metropolitan Transit Authority's green and white color scheme in 1963.

Source: Los Angeles Public Library

Beyond the growing dominance of automobile culture, the streetcar's downfall in Los Angeles was further hastened by a reputation for aging infrastructure, frequent delays, and uncomfortable trains. At the same time, growing affluence during the post-World War II era allowed for an even greater expansion of automobile ownership. Public officials failed to integrate streetcar lines into proposed freeway projects, citing cost as the main impediment. A new government agency, the Los Angeles Metropolitan Transit Authority, took over the successors to the Yellow and Red Car systems in 1958 and soon dismantled the last vestiges of the old streetcar lines. The last former Pacific Electric interurban operated from downtown to Long Beach April 8, 1961, and the last five former Los Angeles Railway lines completed service in the early morning hours of April 1, 1963 (Masters 2013).

3.3.3 Environmental Impact Analysis

This section expresses the methodology, evaluation, and impacts for archaeological, historical, and paleontological resources.

3.3.3.1 Methodology

Archaeological Resources

The study area is composed of the area circumscribed by all four build alternatives and an additional 0.25-mile buffer. The study area includes the maintenance and storage facilities (MSFs) and traction power substations (TPSS) described in the Project Description. The vertical study area includes the depth of all ground-disturbing activities. These ground-disturbing activities would extend to a depth up to approximately 10 feet below the ground's surface.

A records search was conducted at the South Central Coastal Information Center in August 2012 in order to identify any archaeological resources that have been previously identified in the vicinity of the project area. A review of aerial maps indicates that the Project's study area has been heavily altered by the construction and urbanization of downtown Los Angeles. A team of archaeologists drove the alignments and inspected the streets for any evidence of older curbs, pavers, or abandoned rail segments, which is standard procedure in this type of situation. Because the natural ground surface is not visible, a pedestrian archaeological field survey was not conducted.

Historical Resources

The study area was preliminarily defined as those parcels adjacent to the project corridor described in the definitions of the 7th Street and 9th Street Alternatives (both with and without the Grand Avenue Extension) and would encompasses all project components, including proposed MSF sites and TPSS sites.

In order to identify and evaluate historical resources, a multi-step methodology was utilized. Record searches for previous documentation of identified historic resources were conducted, including listings in the NRHP, determinations of eligibility for NRHP listings, the California Historical Resources Inventory database, and the City of Los Angeles's historic resource inventories. An intensive survey, including photography and background research, was then made of the study area. Additional background and site-specific research was conducted in order to evaluate the properties within their historic context. NRHP, CRHR, and City of Los Angeles criteria were employed to assess the significance of the properties.

Paleontological Resources

The paleontological study area is defined to be the same as the archaeological study area, referenced above.

As part of the Archaeological Resources Technical Report (Appendix G), a paleontological assessment report and a Los Angeles County Museum of Natural History records search were completed for the project corridor and vicinity. Research indicates that the uppermost five feet of sediment in the project alternatives are unlikely to encompass paleontological resources.

Below five feet, deposits of older Quaternary alluvium of Pleistocene age (2.6 Ma to 10,000 BP) may occur. This alluvium generally consists of light brown to dark brown, dense to very dense, poorly graded sand and silty sand. Underlying this alluvium is Fernando Formation bedrock of early Pliocene age (3.4 Ma to 5.5 Ma)

The paleontological sensitivity of these sediments ranges from none to very sensitive. Fill has been disturbed, and is unlikely to contain intact fossils. Quaternary younger alluvial deposits of Holocene-age deposits contain the remains of modern organisms and are too young to contain fossils. Younger alluvial deposits have been determined to have a low potential for paleontological resources. Typically, Quaternary older alluvial deposits throughout Southern California are considered to be highly sensitive for vertebrate fossils. Sixty Pleistocene localities from this type of sediment, exclusive of Rancho La Brea, were reviewed by Miller (1971), and many localities have since been discovered. Therefore, there is the potential for buried cultural and paleontological deposits to exist beneath previously disturbed and developed land surfaces.

Identification and Evaluation

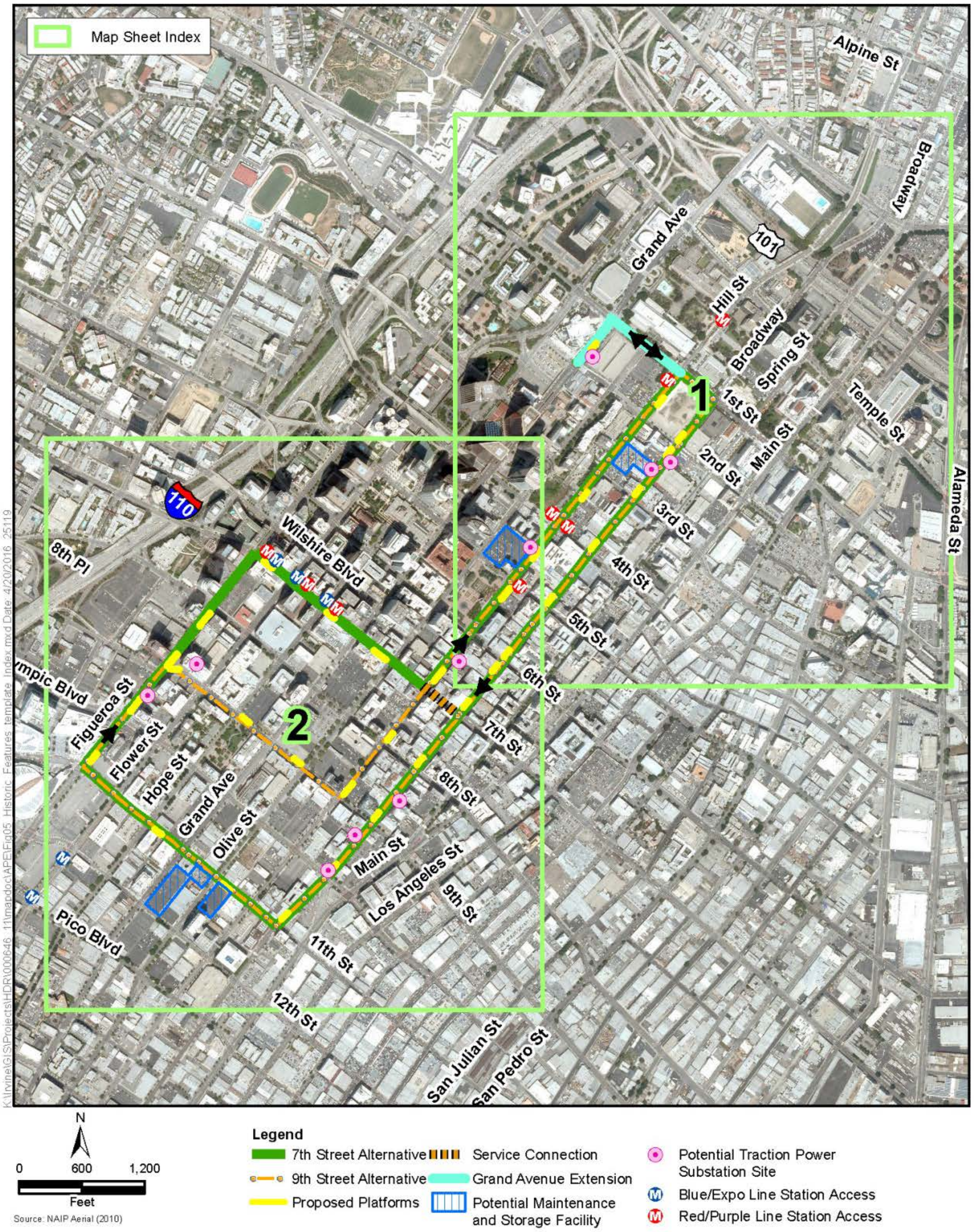
The records search included a review of all available archaeological and historical resources reports and site records concerning properties directly bordering the entire project route on both sides of the street. A total of 19 studies were previously conducted within portions of the study area. A total of 132 properties and one historic district have been previously recorded within the boundaries of the study area.

Archaeological Resources. The South Central Coastal Information Center records search identified only one previously recorded archaeological site, 19-003129, in the study area. No new archaeological resources were recorded through the proposed Project.

Historical Resources. Within the study area, nine buildings and one historic district are listed in the NRHP, 42 buildings and one historic district were previously determined eligible for the NRHP, and three buildings are only listed as HCMs. As previously stated, properties listed in or formally determined eligible for listing in the NRHP are *automatically* listed in the CRHR.

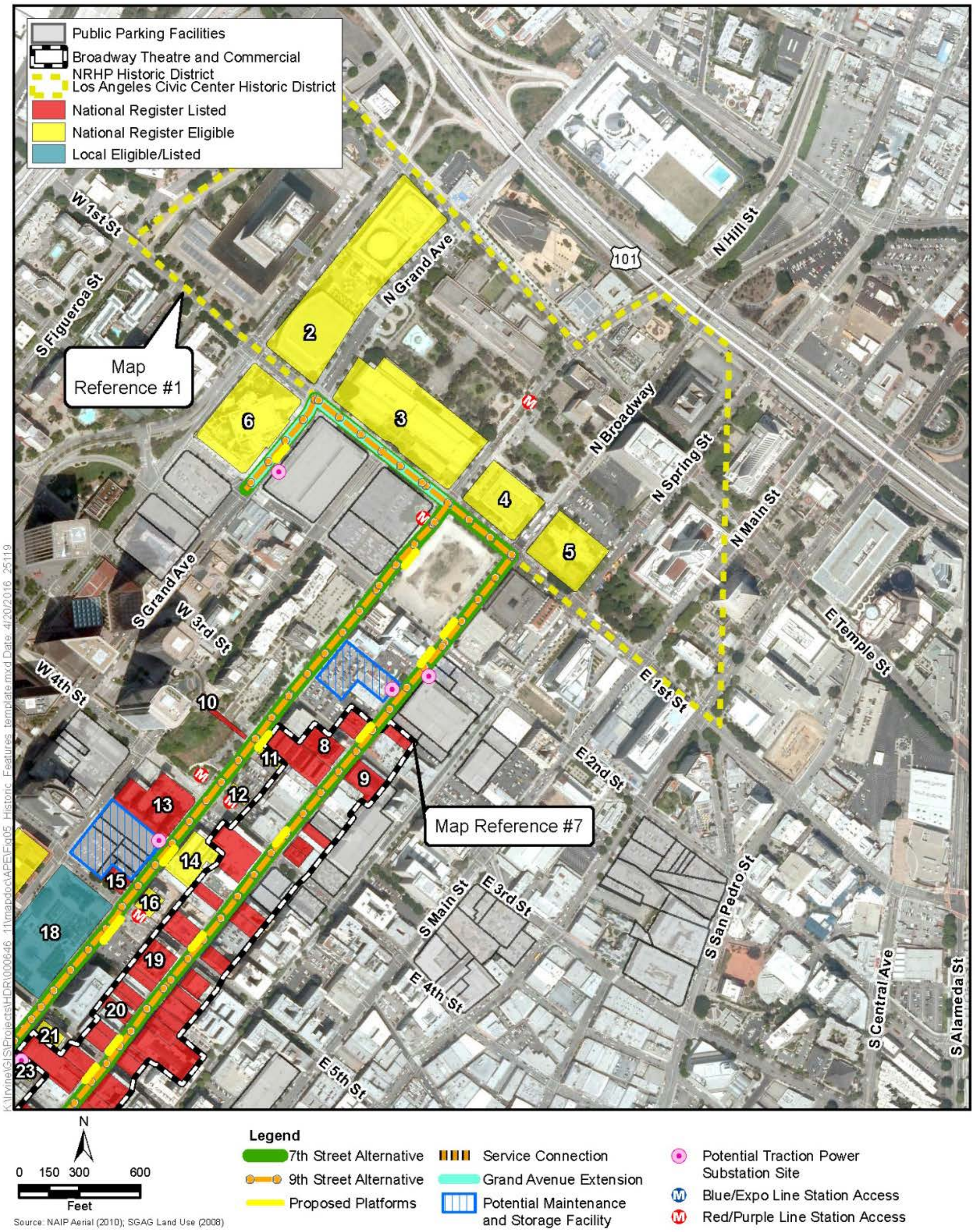
These properties are identified in the following figures and tables:

Figure 3.3-10, Index. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles



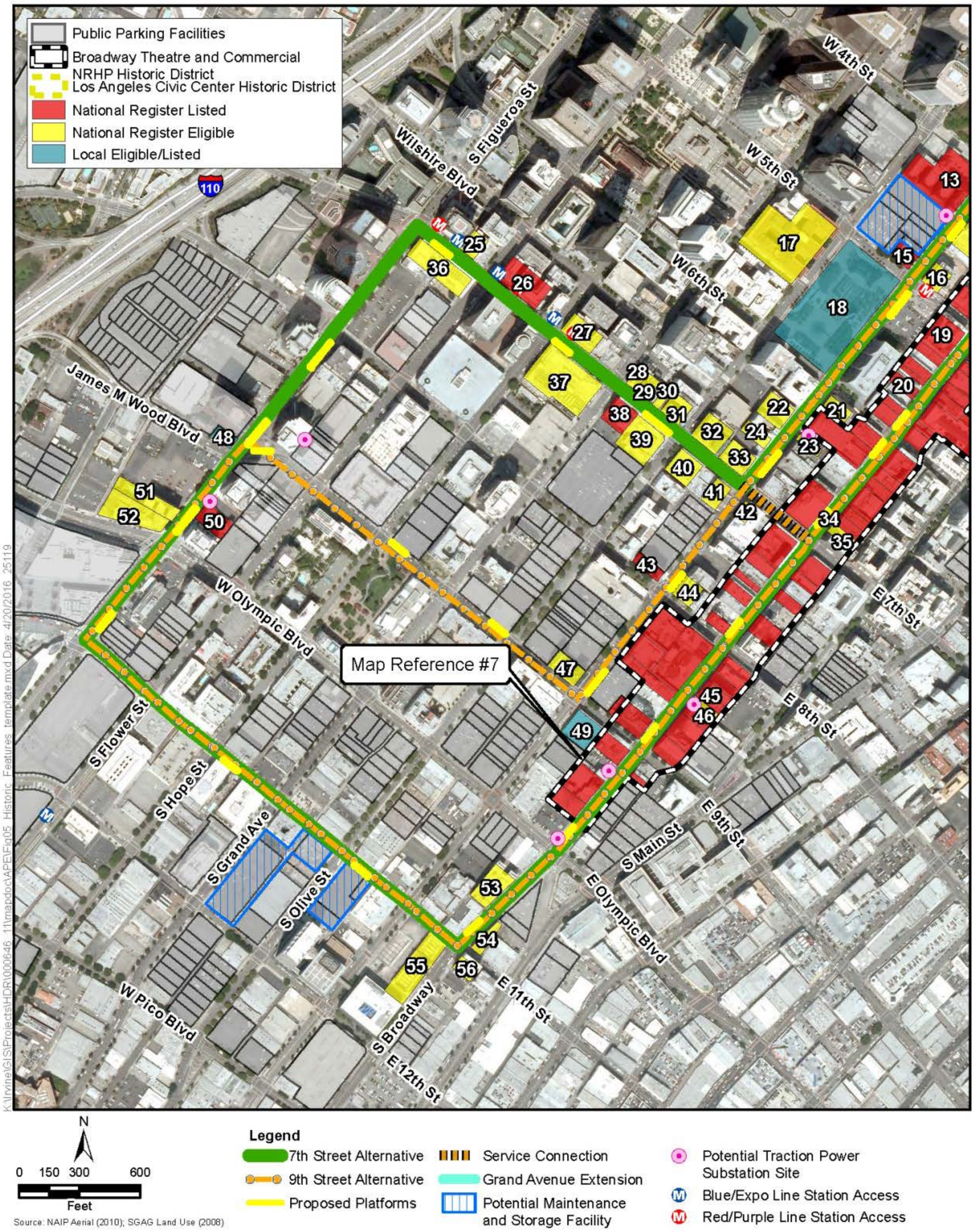
This page was intentionally left blank.

Figure 3.3-10, Sheet 1 of 2. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles



This page was intentionally left blank.

Figure 3.3-10, Sheet 2 of 2. National Register Properties and Local Landmarks Restoration of Historic Streetcar Service in Downtown Los Angeles



This page was intentionally left blank.

Table 3.3-1. Historical Resources Included in the NRHP and Listed in the CRHR[a]

Name	Address/ Location	Map Reference Number	Status
Broadway Theatre and Commercial District Boundary increase[b]	242–947 S. Broadway	7	Increased the boundary of the district and revised contributors/non-contributors.
Bradbury Building	300 S. Broadway	9	Listed as an NHL, and included on the NRHP under Criteria A and C, for architecture/engineering. Period of significance is 1893. This property was declared HCM #6.
Broadway Theatre and Commercial District	300–939 S. Broadway	7	Listed on the NRHP under Criteria A and C for architecture, commerce, and entertainment/recreation. Period of significance is 1894–1931. There are 60 contributing buildings, 38 non-contributing buildings, and three vacant lots within this district.[c] This district was declared HCM #2306.
Million Dollar Theater/ Edison Building	301 S. Broadway	8	Listed on the NRHP under Criteria A and C, for an event and architecture/engineering. Period of significance is 1916.
Friday Morning Club	940 S. Figueroa Street	50	Listed on the NRHP under Criterion C for associations with social/humanitarian activities, theater, and radio. Period of significance from 1923–1924. This property was declared HCM #196.
NY Cloak & Suit House, Brockman Building	708 S. Grand Avenue & 520 W. 7th Street	38	Listed on the NRHP under Criteria A and C, for community planning/development, architecture, and commerce. Period of significance from 1912–1925.
Angels Flight Railway/ Angels Flight Railway Station House	S. Hill Street, north of W. 4th Street	10	Listed on the NRHP under Criteria A and C, for an event and architecture/engineering. _Period of significance is 1905—circa 1950. This property was declared HCM #4.
Subway Terminal Building, 417 Metro	417 S. Hill Street	13	Listed on the NRHP under Criteria A and C for transportation and architecture. Period of significance from 1925–1955. This property was declared HCM # 177.
Title Guarantee and Trust Company Building	401–411 W. 5th Street/ 425–457 S. Hill Street	15	Listed on the NRHP under Criterion C for architecture. Period of significance is 1930–1931. This property was declared HCM # 278.
Roosevelt Building	727 W. 7th Street	26	Listed on the NRHP under Criteria A and C for architecture. Period of significance is 1926. This property was declared HCM # 355.
Garfield Building	403 W. 8th Street	43	Listed on the NRHP under Criterion C for architecture/engineering. Period of significance is 1929.

Name	Address/ Location	Map Reference Number	Status
Source: ICF 2013. [a] California State Historic Preservation Office. *California Historic Resources Inventory System*. Last updated on April 4, 2012. [b] There was no change in the net number of contributors. Six buildings originally considered to be contributing had their status changed to non-contributing, while six different buildings within the district were determined to be contributors. Two new non-contributing resources were identified within the district. Addresses identifying the current contributors and non-contributors to the historic district can be found in Appendix H. Accessed from http://www.NRHP.com/CA/Los+Angeles/state.html. [c] See Table G-1 in Appendix H for a list of character-defining features of the district.			

Table 3.3-2. Historical Resources Previously Determined Eligible for the NRHP and Listed in the CRHR[a]

Name	Address/Location	Map Reference Number	Status
Los Angeles Civic Center Historic District	Various addresses, downtown Los Angeles	1	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1972. It is listed in the CRHR.
Barry's	543–545 S. Broadway	20	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1901. It is listed in the CRHR.
Clifton's Cafeteria	648 S. Broadway	35	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1935. It is listed in the CRHR.
Clifton's Cafeteria Terrazzo Sidewalk	648 S. Broadway	34	Determined eligible for the NRHP under Criterion C for its high artistic qualities. Period of significance is 1935-1939. It is listed in the CRHR.
Wurlitzer Building	818-820 S. Broadway	45	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1913–1923. It is listed in the CRHR.
Burgers	828 S. Broadway	46	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1927. It is listed in the CRHR.
Western Pacific Building	1023 S. Broadway	53	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1925.
LA Transit Building	1050–1070 S. Broadway	54	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1920.
Commercial Club, Hotel Case	1100 S. Broadway	56	Determined eligible for the NRHP (Criterion N/A). Period of significance

Name	Address/Location	Map Reference Number	Status
			is 1925.
Examiner Building/*Herald Examiner*	1111 S. Broadway	55	Determined eligible for the NRHP under Criteria B and C for a significant person and architecture. Period of significance is 1914. It is listed in the CRHR. This property was declared HCM # 178.
Hotel Figueroa	939 S. Figueroa Street	51	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1925. It is listed in the CRHR.
Blow-Up Boutique	947 S. Figueroa Street	52	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1939. It is listed in the CRHR.
Dorothy Chandler Pavilion	135 N. Grand Avenue	2	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
Walt Disney Concert Hall	111 S. Grand Avenue	6	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 2003. It is listed in the CRHR.
Los Angeles County Courthouse/Stanley Mosk Los Angeles County Courthouse	111 N. Hill Street	3	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
The Aldine, The Whipple, Myrick Hotel	324–326 S. Hill Street	11	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1893–1897. It is listed in the CRHR.
The Aldine, Myrick Hotel	342 S. Hill Street	12	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1897. It is listed in the CRHR.
Clark Hotel & Beauty School	426 S. Hill Street	14	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1912. It is listed in the CRHR.
Pershing Square Building	448 S. Hill Street	16	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1923. It is listed in the CRHR.
William Fox Building	608 S. Hill Street	21	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1930.
Sun Reality, Banker's Building	629 S. Hill Street	22	Determined eligible for the NRHP (Criterion N/A). Period of significance

Name	Address/Location	Map Reference Number	Status
			is 1930.
Bullocks Downtown Department Store	632 S. Hill Street	23	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1906. It is listed in the CRHR.
Los Angeles Fur Mart Building	635 S. Hill Street	24	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1925.
Great Western Savings Bank	700 S. Hill Street	42	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922.
Foreman & Clark Building	701 S. Hill Street	41	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1928. It is listed in the CRHR.
Union Bank and Trust Company	760 S. Hill Street	44	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1921. It is listed in the CRHR.
Biltmore Hotel	515 S. Olive Street	17	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1923. It is listed in the CRHR. This property was declared HCM # 60.
Bank of Italy/ A.P. Giannini Building	649 S. Olive Street	31	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922. This property was declared HCM # 354.
Ville De Paris Store, La Merchandise	700–712 S. Olive Street	40	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1917.
None	275 W. 1st Street	5	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1942. It is listed in the CRHR.
Los Angeles County Law Library/Mildred L. Lillie Building	301 W. 1st Street	4	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
None	326 W. 5th Street	19	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1897. It is listed in the CRHR.
Pantages/Warner Brothers Theatre	401 W. 7th Street	33	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1919.
LA Athletic Club	431 W. 7th Street	32	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1912. This property is also listed as HCM # 69.
Coulter Dry Goods Co	500 W. 7th Street	39	Determined eligible for the NRHP

Name	Address/Location	Map Reference Number	Status
			(Criterion N/A). Period of significance is 1917.
Brock & Company Jewelry Store	513-515 W. 7th Street	30	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922. This property was declared LAHCM # 358.
Brack Shops	527 W. 7th Street	29	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1913.
Quinby Building, Japan Airlines	529 W. 7th Street	28	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1926.
Boston Store, J. W. Robinson Company	600 W. 7th Street	37	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1914. It is listed in the CRHR. This property was declared HCM # 357.
Union Oil Building, Kyowa Bank	617 W. 7th Street	27	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922.
Barker Bros.	800 W. 7th Street	36	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1925. It is listed in the CRHR. This property was declared HCM # 135.
Fine Arts Building, Global Marine Building	807 W. 7th Street	25	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1926. It is listed in the CRHR. This property was declared HCM # 125.
Insurance Exchange, Pacific Bell	855 S. Hill Street	47	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1924.

Source: ICF 2013.

[a] California State Historic Preservation Office. *California Historic Resources Inventory System*. Last updated on April 4, 2012.

Table 3.3-3 provides a list of additional historical resources declared by the City of Los Angeles to be HCMs that were not individually identified in Table 3.3-1 or Table 3.3-2.

Table 3.3-3. Additional Historical Resources Declared by the City of Los Angeles to Be Historic-Cultural Monuments

Name	Address/ Location	Map Reference Number[2]	Status

[2] Properties that have been demolished do not have a corresponding Map Reference Number.

Name	Address/ Location	Map Reference Number[2]	Status
Pershing Square, Spanish-American War Memorial	Northeast corner of W. 5th Street and S. Olive Street	18	Declared on 3/23/1980 as HCM #480.
May Company Garage	9th and Hill Streets	49	Declared on 6/1/2011 as HCM #1001.
Original Pantry	809-817 W. 9th Street and 873–877 S. Figueroa Street	48	Declared on 10/5/1982 as HCM #255.
Contributors to the Broadway Theatre and Commercial Historic District			
Irvine-Byrne Building	249 S. Broadway	7	Declared on 8/2/1991 as HCM #544
Judson Rives Building	424 S. Broadway	7	Declared on 7/17/2007 as HCM #881
Roxie Theater	512-525 S. Broadway	7	Declared on 3/20/1991 as HCM #526
Cameo Theater (formerly Clune's Broadway)	526-530 S. Broadway	7	Declared on 3/20/1991 as HCM #524
Arcade Theater (formerly Pantages Theater)	532-536 S. Broadway	7	Declared on 3/20/1991 as HCM #525
Los Angeles Theatre	615 S. Broadway	7	Declared on 8/15/1979 as HCM #225
Palace Theater	630 S. Broadway	7	Declared on 8/16/1989 as HCM #449
State Theater Building	701–713 S. Broadway and 300–314 W 7th Street	7	Declared on 3/20/1991 as HCM #522
Charles C. Chapman Building	756 S. Broadway	7	Declared on 12/5/2007 as HCM #899
Tower Theater	800 S. Broadway	7	Declared on 8/16/1989 as HCM #450
Hamburger's Department Store (May Company-Downtown)	801-829 S. Broadway	7	Declared on 10/17/1989 as LAHCM #459

Name	Address/ Location	Map Reference Number[2]	Status
Rialto Theater (Marquee, Box Office and Original Marble Entry Floor)	812 S. Broadway	7	Declared on 12/20/1989 as HCM #472
Eastern Columbia Building	849 S. Broadway	7	Declared on 6/28/1985 as HCM #294
Blackstone's Department Store	901 S. Broadway	7	Declared on 11/7/1991 as HCM #765
United Artists Theater Building	927-939 S. Broadway	7	Declared on 3/20/1991 as HCM #523
Source: ICF 2016. Office of Historic Resources. *Los Angeles Historic Cultural Monuments*. Last updated on April 15, 2015.			

In addition to those mentioned above, ICF International staff identified six more historical resources that appear eligible for listing in the NRHP. Further, these six resources were found to be listed or eligible for listing in the CRHR and are, therefore, historical resources for the purposes of CEQA.

Table 3.3-4. Historical Resources Eligible for the NRHP, Pending SHPO Concurrence

Name	Address/Location	Date Constructed	Status
Downtown Hill Street District	S. Hill Street between W. 6th and 8th Streets	1903–1931	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1903–1931.
Air Raid Siren Discontiguous District: Air Raid Sirens #00, and 011	West side of Hill Street, south of 7th Street; south side of Olympic Boulevard, west of Broadway	c. 1950	Determined eligible for the NRHP under Criterion A for its association with World War II Safety in Los Angeles as a contributor to a district. Period of significance is circa 1950.
W 7th Street District	W. 7th Street between S. Figueroa Street and S. Main Street	1903–1936	Determined eligible for the NRHP under Criteria A and C. Period of significance is 1903–1936.
Insurance Exchange Building Company	318 W. 9th Street	1924	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1924.
Original Pantry	809-817 W. 9th Street and 873-877 S. Figueroa Street	1917	Determined eligible for the NRHP under Criterion A for its association with downtown Los Angeles as an early diner still in existence. Period of significance is 1924.
Source: ICF 2013.			

Paleontological Resources

Numerous paleontological resources have been found in downtown Los Angeles; however, no new paleontological resources were recorded through the proposed Project. A previous check of the vertebrate paleontology records of the Natural History Museum of Los Angeles County indicated that the younger Quaternary alluvium in the downtown area is likely to be quite thin (McLeod 2012). Based on the setting of the project area, the paleontological sensitivity of the project area is likely similar to that for the building site of the Caltrans District 7 building, which is located near the northern end of the project site, at First and Main. This project included excavation of three to five levels of subterranean parking. Fernando Formation bedrock was encountered at depths of 20 to 35 feet below ground surface during these excavations. Paleontological monitors recovered more than 4,025 fossil specimens during the course of monitoring on this city block (Springer 2006). All of these fossils were recovered from the Fernando Formation; none were found in the older Quaternary alluvium (E. Scott, SBCM, Personal Comm. 2012).

Based on this information, it is likely that excavations for most of the Streetcar Project would not be deep enough to encounter paleontological resources, with the possible exception of the four MSF sites. However, as a precaution, the County recently authorized a project-specific review of the vertebrate paleontology records of the Natural History Museum of Los Angeles County. This review indicates that two fossil localities have been found within the area of the Project. The first, Los Angeles County Museum (LACM) 5961 at 1st and Hill, resulted in recovery of a fossil bristlemouth fish, *Cyclothone.* This fossil was recovered from the Puente Formation during subway station excavation at a depth of greater than 11 feet. The second locality, LACM 4726, at 4th and Hill, produced a fossil fish specimen recovered from the Fernando Formation. Both of these fossils are from a depth below ground surface unlikely to be reached by the great majority of project construction actions.

3.3.3.2 Thresholds of Significance

City of Los Angeles CEQA Thresholds Guide

The 2006 *L.A. CEQA Thresholds Guide* states that the following impact significance factors shall apply to archaeological, historical, and paleontological resources.

Archaeological Resources

A project would normally have a significant impact on archaeological resources if it could disturb, damage, or degrade an archaeological resource or its setting that is found to be important under the criteria of CEQA because it:

- Is associated with an event or person of recognized importance in California or American prehistory or of recognized scientific importance in prehistory;
- Can provide information that is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions;
- Has a special or particular quality, such as the oldest, best, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or

- Involves important research questions that historical research has shown can be answered only with archaeological methods.

Historical Resources

A project would normally have a significant impact on historical resources if it would result in a substantial adverse change in the significance of a historical resource. A substantial adverse change in significance occurs if the project involves:

- Demolition of a significant resource;
- Relocation that does not maintain the integrity and significance of a significant resource;
- Conversion, rehabilitation, or alteration of a significant resource that does not conform to the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*; or
- Construction that reduces the integrity or significance of important resources on the site or in the vicinity.

Paleontological Resources

- Whether, or to the degree which, the project might result in the permanent loss of, or loss of access to, a paleontological resource; and
- Whether the paleontological resource is of regional or statewide significance.

3.3.3.3 Environmental Impacts[3]

Alternative 1: No Project Alternative

Construction Impacts

Archaeological Resources

No impact.

The No Project Alternative would result in no ground disturbance and would not disturb, damage, or degrade an archaeological resource or its setting; therefore, no impacts would occur.

Historical Resources

No impact.

The No Project Alternative would not involve any construction activities, would have no change from existing conditions and has no potential to affect historical resources as a result of the Project. The No Project Alternative would have no impact on historical resources because:

- There would be no demolition of a significant resource;
- There would be no relocation of a significant resource;
- There would be no conversion, rehabilitation, or alteration of a significant resource; and

---

[3] MSF and TPSS sites are not identified under each alternative; they are listed after the alternatives with their own respective heading.

- There would be no construction that reduces the integrity or significance of important resources on the site or in the vicinity.

Paleontological Resources

No impact.

The No Project Alternative would result in no ground disturbance and there would be no loss of, or loss of access to, a paleontological resource; therefore, no impacts would occur.

Operational Impacts

Archaeological Resources

No impact.

Operation of the No Project Alternative would result in no ground disturbance, and there would be no potential to disturb, damage, or degrade an archaeological resource or its setting; therefore, no impacts on archaeological resources would occur.

Historical Resources

No impact.

Implementation and operation of the No Project Alternative would not involve any change from the existing conditions and therefore has no potential to affect historical resources. The No Project Alternative would have no impact on historical resources because:

- There would be no demolition of a significant resource;
- There would be no relocation of a significant resource;
- There would be no conversion, rehabilitation, or alteration of a significant resource; and
- There would be no construction or operational activities that reduce the integrity or significance of important resources on the site or in the vicinity.

Paleontological Resources

No impact.

No earth-moving activities would occur during operations of the Project under the No Project Alternative. Operation of the proposed Project is not anticipated to result in impacts related to the disturbance of paleontological resources.

Alternative 2: 7th Street Alternative with Grand Avenue Extension

Construction Impacts

Archaeological Resources

A less-than-significant impact.

During the archaeological field survey, it was observed that the area is paved and developed, with a few open spaces for landscape vegetation. No surficial archaeological resources were observed during the survey. The lack of archaeological resources identified within the project study area does not preclude the possibility of identifying subsurface archaeological material during construction activities. Excavation in City streets often uncovers evidence of previous American-era street development, such as utility conduits, old pavement or curbs, and rails and ties from older street rail systems that have been buried in fill and covered with asphalt. However, these items are now usually fragmentary and no longer associated with their original context, and therefore lack integrity; such historical cultural materials are not important resources under CEQA criterion D. In terms of prehistoric resources, the study area has been heavily disturbed by past construction activities, including the construction and installation of utilities, roads, and skyscrapers. Therefore, the likelihood of encountering intact, subsurface prehistoric archaeological material within the study area is low. The ICF survey and research did not result in the identification of any surficial prehistoric or historic archaeological sites or features. Therefore, construction of the alternative has a very low potential to disturb, damage, or degrade an archaeological resource or its setting. Discoveries of human remains would be treated as required by State law.

Archaeological discoveries during the Project would be addressed as specified in the City of Los Angeles Department of Public Works, Bureau of Engineering's (LABOE's) *Standard Specifications for Public Works Construction* (2009), or "*Greenbook*." The *Greenbook* specifies that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

Historical Resources

A less-than-significant impact.

With the possible exception of installations within the sidewalk areas, there would be no demolition of a significant resource. All project components, except one MSF site, would be constructed within the street right-of-way, on non-historic sidewalks, in vacant lots, or in non-historic parking garages. No historic streetlights or "Broadway Rose" streetlight bases would be demolished for the Project. The construction laydown area would be selected by the contractor and will be a parking lot or other type of undeveloped lot with no structures. Mitigation Measure **MM-AES-C1** would minimize the temporary effects associated with construction laydown areas.

There would be no conversion, rehabilitation, or alteration of a significant resource that does not conform to the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Building* (Secretary's Standards; 36 CFR 67). Construction of streetcar stops, OCS poles, sidewalk ramps, and curb bump-outs would most likely occur in non-historic sidewalks but have the potential to alter or cause physical damage to historic sidewalk features, including terrazzo installations, vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers. It is not known definitively if construction activities would cause any damage. Such historic sidewalk features are considered character-defining features of the Broadway Theater and Commercial District. Individually significant historical resources may include these historic sidewalk features, along with brass or ceramic inserts that are unique to that resource. There is also a possibility that historic sidewalk features may be discovered during construction because they have been obscured over time by a layer of asphalt or concrete. Conditions to prioritize avoidance of historic sidewalk features during final design, and to protect and preserve them in place during construction, would be required. These measures (**MM-CUL-C1**) would reduce the potential to cause physical damage to the terrazzo installations, vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers that are considered character-defining features of the Broadway Theater and Commercial District, and therefore ensure no substantial adverse change to the significance of the historic district would occur. Mitigation Measure **MM-CUL-C1** would also ensure that if sidewalk features adjacent to an individually significant historical resource would need to be altered for the Project, such alterations would conform to the Secretary's Standards, and ensure no substantial adverse change to the significance of the historical resource would occur. Should incidental damage occur during construction, the historic sidewalk feature would be repaired or replaced in kind by a qualified contractor in a manner consistent with the Secretary's Standards. In the unlikely event that the sidewalk feature cannot be treated in accordance with the Secretary's Standards, there would still be a less-than-significant impact on the historic building that fronts the sidewalk, and there would be no substantial adverse change in the overall significance of the historical resource because enough contributing features would remain that the historical resource would retain its designation.

There would be no construction that reduces the integrity or significance of important resources on the site or in the vicinity. Some construction activities associated with the Project could result in an increase in groundborne vibration. The *Noise and Vibration Technical Report* (ATS Consulting 2013) provides measures which would avoid the potential for damage, such as previous preconstruction surveys to identify at-risk historical resources, vibration limits, vibration monitoring, and alternative procedures that would lower vibration levels. The contractor would be required to abide by the measures. These measures would mitigate the potential impacts to a less-than-significant level.

Historically, streetcars operated along the streets in the study area, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and -eligible properties previously identified or identified during the intensive survey. Streetcar equipment was part of the historic-era setting; therefore, construction of modern equipment that re-introduces the historic function would not cause a substantial adverse change to the significance of historical resources along the 7th Street Alternative with Grand Avenue Extension.

Mitigation Measures **MM-AES-C1** and **MM-CUL-C1** would reduce the impact associated with the Project to a less-than-significant level. Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation

Paleontological Resources

***A less-than-significant impact*.**

The study area has been heavily disturbed by past construction activities, including the construction and installation of utilities, roads, and skyscrapers. Surface grading or shallow excavations in the younger Quaternary Alluvium or disturbed fill up to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavation for the Project for utilities relocation or other deep trenching or excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Disturbance of a significant paleontological resource of regional or statewide significance, if encountered, would result in a significant impact. Mitigation

Measure **MM-CUL-C2** would reduce the impact associated with the Project to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

The7th Street Alternative with Grand Avenue Extension would have a less-than-significant impact on historical resources because:

- There would be no demolition of a significant resource.
- There would be no relocation of a significant resource.
- There would be no conversion, rehabilitation, or alteration of a significant resource.

Furthermore, there would be no construction or operational activities that reduce the integrity or significance of important resources on the site or in the vicinity. Streetcars operated along the streets in the study area historically, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and -eligible properties previously identified or identified during the intensive survey. Overhead cables were part of the historic setting and their reintroduction would not be incongruous. The integrity of the setting or the character of the properties would not be altered in such a manner as to diminish the relationship of those properties to their historic setting. The visual impacts analysis did not identify the OCS as a potentially adverse visual impact on the settings of any historic property.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines, Above Ground Facility Ordinance*, and the *Broadway Streetscape Master Plan*. Design effects would be mitigated by Mitigation Measures **MM-AES-O3** for OCS poles and **MM-CUL-O1** for all other project-related elements.

Mitigation Measures **MM-AES-O3** and **MM-CUL-O1** would reduce the operational impact associated with the Project to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

Alternative 3: 7th Street Alternative without Grand Avenue Extension

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources for this alternative would be slightly less than those for the 7th Street Alternative with Grand Avenue Extension, due to a slightly smaller project footprint. To summarize, no superficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the alternative has a very low potential to disturb, damage, or degrade an archaeological resource or its setting; therefore, no impacts would occur, and no mitigation measures are required. (Possible archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009.)

Historical Resources

A less-than-significant impact.

The potential impacts on historical resources for this alternative would be identical to the discussion of the 7th Street Alternative with Grand Avenue Extension, and are summarized as follows:

- There would be no demolition of a significant resource because all project components would be constructed within the street right-of-way, on non-historic sidewalks, in vacant lots, or in non-historic parking garages. No historic streetlights or "Broadway Rose" streetlight bases would be removed for the Project. Temporary effects from construction laydown areas would be minimized (MM-AES-1).
- There would be no relocation of a significant resource to accommodate construction activities.
- There would be no conversion, rehabilitation, or alteration of a significant resource that does not conform to the Secretary's Standards. Historic sidewalk features that contribute to the Broadway Theater and Commercial District or individually significant historical resources, would be avoided, protected and preserved in place, or if any alterations are necessary, would be altered to conform to the Secretary's Standards (MM-CUL-C1).
- There would be no construction that reduces the integrity or significance of important resources on the site or in the vicinity, including groundborne vibration.

Mitigation Measures **MM-AES-C1** and **MM-CUL-C1** would reduce the construction impacts associated with the Project to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this alternative would be identical to those for the 7th Street Alternative with Grand Avenue Extension. To summarize, surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archeological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

The 7th Street Alternative without Grand Avenue Extension would have a less-than-significant impact on historical resources because:

- There would be no demolition of a significant resource.
- There would be no relocation of a significant resource.
- There would be no conversion, rehabilitation, or alteration of a significant resource.

Furthermore, there would be no operational activities that reduce the integrity or significance of important resources on the site or in the vicinity. Streetcars operated along the streets in the study area historically, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and -eligible properties previously identified or identified during the intensive survey. Overhead cables were part of the historic setting and their reintroduction would not be incongruous. The integrity of the setting or the character of the properties would not be altered in such a manner as to diminish the relationship of those properties to their historic setting. The visual impacts analysis did not identify the OCS as a potentially adverse visual impact on the settings of any historic property.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines, Above Ground Facility Ordinance*, and the *Broadway Streetscape Master Plan*. Design effects would be mitigated by Mitigation Measures **MM-AES-O3** for OCS poles and **MM-CUL-O1** for all other project-related elements. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

Alternative 4: 9th Street Alternative with Grand Avenue Extension

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources for this alternative would be similar to those for the 7th Street Alternative with Grand Avenue Extension. To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the alternative has a very low potential to disturb, damage, or degrade an archaeological resource or its setting. Discoveries of human remains would be treated as required by State law. Archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009), which requires that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

Historical Resources

A less-than-significant impact.

The potential impacts on historical resources for this alternative would be identical to the discussion of the 7th Street Alternative with Grand Avenue Extension, and are summarized as follows:

- There would be no demolition of a significant resource because all project components would be constructed within the street right-of-way, on non-historic sidewalks, in vacant lots or in non-historic parking garages. No historic streetlights or "Broadway Rose" streetlight bases would be removed for the Project. Temporary effects from construction laydown areas would be minimized (**MM-AES-1**).
- There would be no relocation of a significant resource to accommodate construction activities.

- There would be no conversion, rehabilitation, or alteration of a significant resource that does not conform to the Secretary's Standards. Historic sidewalk features that contribute to the Broadway Theater and Commercial District or individually significant historical resources, would be avoided, protected, and preserved in place, or if any alterations are necessary, would be altered to conform to the Secretary's Standards (**MM-CUL-C1**).
- There would be no construction that reduces the integrity or significance of important resources on the site or in the vicinity, including groundborne vibration.

Mitigation Measures **MM-AES-C1** and **MM-CUL-C1** would reduce the construction impact associated with the Project to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this alternative would be identical to those for the 7th Street Alternative with Grand Avenue Extension. To summarize, surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

The 9th Street Alternative with Grand Avenue Extension would have a less-than-significant impact on historical resources because:

- There would be no demolition of a significant resource.
- There would be no relocation of a significant resource.
- There would be no conversion, rehabilitation, or alteration of a significant resource.

Furthermore, there would be no construction or operational activities that reduce the integrity or significance of important resources on the site or in the vicinity. Streetcars operated along the streets in the study area historically, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and -eligible properties previously identified or identified during the intensive survey. Overhead cables were part of the historic setting, and their reintroduction would not be incongruous. The integrity of the setting or the character of the properties would not be altered in such a manner as to diminish the relationship of those properties to their historic setting. The visual impacts analysis did not identify the OCS as a potentially adverse visual impact on the settings of any historic property.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines, Above Ground Facility Ordinance*, and the *Broadway Streetscape Master Plan*. Design effects would be mitigated by Mitigation Measures **MM-AES-O3** for OCS poles and **MM-CUL-O1** for all other project-related elements. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

Alternative 5: 9th Street Alternative without Grand Avenue Extension

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources for this alternative would be slightly less than those for the 7th Street Alternative with Grand Avenue Extension, due to a slightly smaller overall footprint.

To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the alternative has a very low potential to disturb, damage, or degrade an archaeological resource or its setting; therefore, no impacts would occur, and no mitigation measures are required. (Possible archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* [2009].)

Historical Resources

A less-than-significant impact.

The potential impacts on historical resources for this alternative would be identical to the discussion of the 7th Street Alternative with Grand Avenue Extension, and are summarized as follows:

- There would be no demolition of a significant resource because all project components would be constructed within the street right-of-way, on non-historic sidewalks, in vacant lots, or in non-historic parking garages. No historic streetlights or "Broadway Rose" streetlight bases would be removed for the Project. Temporary effects from construction laydown areas would be minimized (MM-AES-1).
- There would be no relocation of a significant resource to accommodate construction activities.
- There would be no conversion, rehabilitation, or alteration of a significant resource that does not conform to the Secretary's Standards. Historic sidewalk features that contribute to the Broadway Theater and Commercial District or individually significant historical resources, would be avoided, protected, and preserved in place, or if any alterations are necessary, would be altered to conform to the Secretary's Standards (MM-CUL-C1).
- There would be no construction that reduces the integrity or significance of important resources on the site or in the vicinity, including groundborne vibration.

Mitigation Measures **MM-AES-C1** and **MM-CUL-C1** would reduce the construction impact associated with the Project to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this alternative would be identical to those for the 7th Street Alternative with Grand Avenue Extension. To summarize, surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

The 7th Street Alternative without Grand Avenue Extension would have a less-than-significant impact on historical resources because:

- There would be no demolition of a significant resource.
- There would be no relocation of a significant resource.
- There would be no conversion, rehabilitation, or alteration of a significant resource.

Furthermore, there would be no construction or operational activities that reduce the integrity or significance of important resources on the site or in the vicinity. Streetcars operated along the streets in the study area historically, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and -eligible properties previously identified or identified during the intensive survey. Overhead cables were part of the historic setting, and their reintroduction would not be incongruous. The integrity of the setting or the character of the properties would not be altered in such a manner as to diminish the relationship of those properties to their historic setting. Overhead cables would be installed to enhance and replicate the character of the historic district. The visual impacts analysis did not identify the OCS as a potentially adverse visual impact on the settings of any historic property.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines, Above Ground Facility Ordinance*, and the *Broadway Streetscape Master Plan*. Design effects would be mitigated by Mitigation Measures **MM-AES-O3** for OCS poles **and MM-CUL-O1** for all other project-related elements. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of the Project would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

Traction Power Substations

Construction Impacts

The proposed streetcar system would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. Each would be placed at a parking lot or on private property outside the public right-of-way (except for the proposed TPSS location at 2nd Street and Grand Avenue, which may need to occupy space in the public right-of-way). Construction impacts would be essentially the same as discussed above for Alternatives 2 through 5, except that most of the construction activity would occur outside the street right-of-way.

Archaeological Resources

A less-than-significant impact.

TPSS facilities would require only modest amounts of earth moving during construction. No surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, the potential for impacts on archaeological resources is low. Construction of the TPSS facilities has a very low potential to disturb, damage, or degrade an archaeological resource or its setting. Discoveries of human remains would be treated as required by State law. Archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009), which requires that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

Historical Resources

A less-than-significant impact.

TPSS facilities would be designed in a manner that is appropriate to the design context in which they are proposed. Each TPSS facility would be given an architectural treatment that would be compatible with adjoining buildings; those proposed within the Broadway Theatre and Commercial Historic District would be located in parking lots or behind buildings that are not architectural/historical resources, and, thus, their visibility would be greatly diminished. No adverse impacts on historic buildings would occur during construction of the TPSS. Temporary changes that would occur during the construction period would not substantially degrade the visual character or quality of the area within the project viewshed. A less-than-significant impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of TPSS units.
- There would be no relocation of a significant resource to accommodate construction of TPSS units.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of a TPSS unit.
- There would be no construction of a TPSS unit that reduces the integrity or significance of important resources on the site or in the vicinity due to the small size of the TPSS unit.

Therefore, construction of TPSS facilities would have a less-than-significant impact on historical resources.

Paleontological Resources

A less-than-significant impact.

TPSS facilities would require only modest amounts of earth moving during construction, and surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the TPSS facilities would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

TPSS facilities would be designed in a manner that is appropriate to the design context in which they are proposed. TPSS facilities would be given an architectural treatment that would be compatible with adjoining buildings. TPSS facilities are proposed to be adjacent to the Friday Morning Club at 940 S. Figueroa Street, Bullock's Downtown Department Store at 632 S. Hill Street, and the Subway Terminal Building at 417 S. Hill. Two TPSS facilities are proposed within the Broadway Theatre and Commercial Historic District, but they would be located in parking lots or behind buildings that are not architectural/historical resources, and, thus, their visibility would be greatly diminished.

There would be no construction of a TPSS unit that reduces the integrity or significance of important resources on the site or in the vicinity. TPSS units would not be located on the site of the Friday Morning Club, Bullock's Downtown Department Store, or the Subway Terminal Building. The TPSS facilities proposed adjacent to these three buildings would be designed with a compatible architectural treatment, and would not reduce the integrity or significance of the historical resources. The two TPSS facilities proposed within the historic district would be located in parking lots or behind buildings that are not historical resources and, therefore, would not reduce the integrity or significance of the district. With mitigation, there would be a less-than significant impact on the three individual historical resources and the historic district.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines, the Above Ground Facility Ordinance*, and the *Broadway Streetscape Master Plan*. Design effects would be mitigated by Mitigation Measures **MM-AES-O1** for TPSS facilities, **MM-AES-O3** for OCS poles, and **MM-CUL-O1** for all other project-related elements. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of the TPSS facilities would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of the Project under this alternative would not result in the permanent loss of, or loss of access to, a paleontological resource, and no impacts on paleontological resources would occur.

MSF Site at Broadway and 2nd Street

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources during construction at this MSF Site would be similar to those for TPSS site construction, except that it would include excavation to more than six feet deep for construction of inspection pits under the streetcars. To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the MSF has a very low potential to disturb, damage, or degrade an archaeological resource or its setting. Discoveries of human remains would be treated as required by State law. Archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009), which requires that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

Historical Resources

No impact.

The MSF site located at Broadway and 2nd Street would be constructed on a parking lot that currently has two commercial buildings that would be demolished for the proposed MSF. These two buildings are not historical resources; in addition, no historical resources are located adjacent to the MSF site. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction of the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, construction of the MSF at Broadway and 2nd Street would have no impact on historical resources.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this MSF Site would be similar to those for the TPSS facilities, except that it would include excavation to more than six feet depth for construction of inspection pits under the streetcars. Surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

No impact.

The MSF site located at Broadway and 2nd Street would be constructed on a parking lot that currently has two commercial buildings that would be demolished for the proposed MSF. These two buildings are not historical resources; in addition, no historical resources are located adjacent to the MSF site. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction related to the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, operation of the MSF at Broadway and 2nd Street would have no impact on historical resources.

Paleontological Resources

No impact.

Operations of this MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not result in the permanent loss of, or loss of access to, a paleontological resource, and no impacts on paleontological resources would occur.

MSF Site at Hill and 5th Streets

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources during construction at this MSF Site would be similar to those for TPSS construction, except that it would include excavation to more than six feet depth for construction of inspection pits of the Project as a whole. To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the MSF has a very low potential to disturb, damage, or degrade an archaeological resource or its setting. Discoveries of human remains would be treated as required by State law. Archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009), which requires that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

Historical Resources

A less-than-significant impact.

The Hill and 5th Streets MSF site includes seven parcels used for surface parking that surround two sides of the Title Guarantee and Trust Building, located at 401–411 W. 5th Street (425–457 S. Hill Street), which is listed in the NRHP. The period of significance for this building is 1930–1931, and the setting of the building has been altered since that time; historically, W. 5th Street to the west of the building contained numerous buildings. Currently, this building is surrounded on the west and north by surface parking lots. The east and south façade, the primary elevations that convey its significance under Criterion C as one of the two best examples of a commercial building designed in the Art Deco style in Los Angeles, face Hill and 5th Streets, respectively. The Title Guarantee and Trust Building was declared HCM #278.

On the north side of the Hill and 5th Streets MSF site is the Subway Terminal Building (417 Metro) at 415–425 S. Hill Street/416–424 S. Olive Street. This Italian Renaissance building is eligible for the NRHP under Criterion A for its association with the Pacific Electric interurban railway system and under Criterion C at the local level as an excellent example of the work of the architectural firm Schultze & Weaver. The period of significance is 1925–1955. The primary elevation faces east toward S. Hill Street. The south elevation, a secondary façade, faces the proposed MSF site. Previously, the old Hill Street Terminal, which was a Pacific Electric facility, was located at this location, and it was later occupied by a grocery store when the Subway Terminal opened. Although the setting of this building has been altered over time, it still conveys its significance under both Criterion A and Criterion C. The Subway Terminal Building was declared HCM #177.

The current setting for both buildings is urban and vehicle-related, and the parking lots abut secondary, and less significant, elevations. Although the proposed MSF site is now occupied by surface parking lots, historically there were streetcar-related structures and tracks, as well as other commercial buildings, on these parcels. The placement of an MSF on these parcels would not change the character of the Title Guarantee and Trust Building or Subway Terminal Building's use and would not alter the setting such that they could no longer convey their historic significance. The current setting of the Title Guarantee and Trust Building is not its historic setting because of its previous alteration by the demolition of surrounding buildings and their replacement with parking lots. The current setting of the Subway Terminal Building is not its historic setting because of its previous alteration by the removal of historic streetcar tracks and facilities and their replacement with a parking deck and surface parking lots. The Hill and 5th Streets MSF site would not demolish or materially alter in an adverse manner those physical characteristics of the Title Guarantee and Trust Building and the Subway Terminal Building that convey their historical significance and justify their inclusion, or eligibility for inclusion, in the CRHR; therefore, construction of a maintenance and storage facility would not cause substantial adverse change in the significance of a historical resource.

A less-than-significant impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction of the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, construction of the MSF at Hill and 5th Streets would have a less-than-significant impact on historical resources.

Paleontological Resources

***A less-than-significant impact**.*

The potential impacts on paleontological resources for this MSF Site would be similar to those for the TPSS facilities, except that excavations to depths greater than six feet are required for construction of inspection pits under the streetcars. Surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation

Operational Impacts

Archaeological Resources

No impact.

Operations of the MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

A less-than-significant impact.

The Hill and 5th Streets MSF site includes seven parcels used for surface parking that surround two sides of the Title Guarantee and Trust Building, located at 401–411 W. 5th Street (425–457 S. Hill Street), which is listed in the NRHP. The period of significance for this building is 1930–1931, and the setting of the building has been altered since that time; historically, W. 5th Street to the west of the building contained numerous buildings. Currently, this building is surrounded on the west and north by surface parking lots. The east and south façade, the primary elevations that convey its significance under Criterion C as one of the two best examples of a commercial building designed in the Art Deco style in Los Angeles, face Hill and 5th Streets, respectively. The Title Guarantee and Trust Building was declared HCM #278.

On the north side of the Hill and 5th Streets MSF site is the Subway Terminal Building (417 Metro) at 415-425 S. Hill Street/416-424 S. Olive Street. This Italian Renaissance building is eligible for the NRHP under Criterion A for its association with the Pacific Electric interurban railway system and under Criterion C at the local level as an excellent example of the work of the architectural firm Schultze & Weaver. The period of significance is 1925–1955. The primary elevation faces east toward S. Hill Street. The south elevation, a secondary façade, faces the proposed MSF site. Previously, the old Hill Street Terminal, which was a Pacific Electric facility, was located here, and it was later occupied by a grocery store when the Subway Terminal opened. Although the setting of this building has been altered over time, it still conveys its significance under both Criteria A and C. The Subway Terminal Building was declared HCM #177.

A less-than-significant impact would occur during operations because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.

Furthermore, after mitigation, there would be no operations of the MSF that reduce the integrity or significance of important resources on the site or in the vicinity. The current setting for both buildings is urban and vehicle-related, and the parking lots abut secondary, and less significant, elevations because the primary entrance and elevation is on Hill Street. Although the proposed MSF site is now occupied by surface parking lots, historically there were streetcar-related structures and tracks, as well as other commercial buildings, on these parcels. Furthermore, the setting during the historic era included streetcar tracks, streetcar sheds, and other facilities on the current parking lot between these two historical resources. After mitigation, the design and placement of an MSF on these parcels would not change the character of the properties' use and would not alter the setting such that they could no longer convey their historic significance. The Hill and 5th Streets MSF would not demolish or materially alter in an adverse manner those physical characteristics of the Title Guarantee and Trust Building and the Subway Terminal Building that convey their historical significance and justify their inclusion, or eligibility for inclusion, in the CRHR; therefore, operation of a maintenance and storage facility would not cause substantial adverse change in the significance of a historical resource.

As applicable, design and installation of any project-related facilities would have to conform to the *Historic Downtown Los Angeles Design Guidelines*. Design effects would be mitigated by Mitigation Measures **MM-AES-O2** for MSFs, **MM-AES-O3** for OCS poles, and **MM-CUL-O1** for all other project-related elements. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Paleontological Resources

No impact.

Operations of this MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

MSF Site at 11th and Olive Streets (East)

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources during construction at this MSF Site would be similar to those for the TPSS facilities except that excavations to depths greater than six feet are required for construction of inspection pits under the streetcars. To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the MSF has a very low potential to disturb, damage, or degrade an archaeological resource or its setting; therefore, less-than-significant impacts would occur, and no mitigation measures are required, as possible archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009).

Historical Resources

No impact.

The MSF located at 11th and Olive Street (East) would be constructed on a parking lot that currently does not have structures; in addition, no historical resources are located adjacent to the MSF. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.

- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction of the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, construction of the MSF at 11th and Olive Street (East) would have no impact on historical resources.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this MSF Site would be similar to those for the TPSS facilities, except that excavations to depths greater than six feet are required for construction of inspection pits under the streetcars. Surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Archaeological Resources

No impact.

Operations of the MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

No impact.

The MSF located at 11th and Olive Streets (East) would be constructed on a parking lot that currently does not have structures; in addition, no historical resources are located adjacent to the MSF. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction related to the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, operation of the MSF at 11th and Olive Streets (East) would have no impact on historical resources.

Paleontological Resources

No impact.

Operations of this MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

MSF Site at 11th and Olive Streets (West)

Construction Impacts

Archaeological Resources

A less-than-significant impact.

The potential impacts on archaeological resources during construction at this MSF Site would be identical to those for MSF site at 11th and Olive streets (East) construction, except that deeper excavations are required for construction of inspection pits under the streetcars. To summarize, no surficial archaeological resources were observed during the project survey. Subsurface historical archaeological material that may be found during construction activities likely is not intact and therefore not significant, while the likelihood of encountering intact, subsurface prehistoric archaeological material is low. For these reasons, construction of the MSF has a very low potential to disturb, damage, or degrade an archaeological resource or its setting; therefore, less-than-significant impacts would occur, and no mitigation measures are required, as any archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009).

Historical Resources

No impact.

The MSF located at 11th and Olive Street (West) would be constructed on a parking lot that currently does not have structures; in addition, no historical resources are located adjacent to the MSF. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction of the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, construction of the MSF at 11th and Olive Street (West) would have no impact on historical resources.

Paleontological Resources

A less-than-significant impact.

The potential impacts on paleontological resources for this MSF Site would be identical to those for the MSF Site at 11th and Olive Streets (East) construction, except that deeper excavations are required for construction of inspection pits under the streetcars. Surface grading or shallow excavations in surficial younger Quaternary Alluvium or disturbed fill to depths of five feet is unlikely to encounter significant vertebrate fossils. However, excavations that may extend to a depth of five feet or more may encounter older Quaternary deposits or the Fernando Formation, and may result in the permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce the impact associated with construction to a less-than-significant level. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation

Operational Impacts

Archaeological Resources

No impact.

Operations of the MSF Site would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not disturb, damage, or degrade an archaeological resource or its setting, and no impacts on archaeological resources would occur.

Historical Resources

No impact.

The MSF located at 11th and Olive Streets (West) would be constructed on a parking lot that currently does not have structures; in addition, no historical resources are located adjacent to the MSF. No impact would occur during construction because:

- There would be no demolition of a significant resource to accommodate construction of the MSF.
- There would be no relocation of a significant resource to accommodate construction of the MSF.
- There would be no conversion, rehabilitation, or alteration of a significant resource that would result from construction of the MSF.
- There would be no construction related to the MSF that reduces the integrity or significance of important resources on the site or in the vicinity.

Therefore, operation of the MSF at 11th and Olive Streets (West) would have no impact on historical resources.

Paleontological Resources

No impact.

Operations of this MSF would require no earth moving activities except disturbance of already disturbed areas for maintenance and replacement activities. Therefore, operations of an MSF at this site would not result in the permanent loss of, or loss of access to, a paleontological resource; therefore, no impacts on paleontological resources would occur.

3.3.4 Mitigation Measures

3.3.4.1 Archaeological Resources

The ICF survey and research did not result in the identification of any surficial prehistoric or historic archaeological sites or features. Unintended discoveries of archaeological resources during construction have the potential to result in impacts. Discoveries of human remains would be treated as required by State law. Archaeological discoveries during the Project would be addressed as specified in the LABOE's *Greenbook* (2009), which requires that if archaeological resources are discovered, the contractor will immediately cease excavation in the area of discovery and not proceed until ordered by the project engineer. This allows for the legally required evaluation and, if necessary, treatment of archaeological resources. This can include as-needed development of avoidance strategies, capping with fill material, evaluation excavations, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. A report of findings is prepared, and recovered materials curated, if needed, in an approved facility. Therefore, less-than-significant impacts would occur, and no mitigation measures are required.

3.3.4.2 Historical Resources

Construction Period

Construction of streetcar stops, sidewalk ramps. OCS poles, and curb bump-outs have the potential to cause physical damage to historic sidewalk features, although it is not known definitively if construction activities would cause any damage. Historic sidewalk features, including terrazzo installations, vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers are considered character-defining features of the Broadway Theater and Commercial District. Individually significant historical resources may include these historic sidewalk features, along with brass or ceramic inserts that are unique to that resource. There is also a possibility that historic sidewalk features may be discovered during construction because they have been obscured over time by a layer of asphalt or concrete. Implementation of Mitigation Measure MM-CUL-C1 would reduce the impact associated with the Project to a less-than-significant level.

MM-CUL-C1: As part of final design, a detailed field survey shall be conducted to identify historic sidewalk features that need to be avoided, protected during construction, or altered in conformance with the Secretary's Standards. Conditions to protect the historic sidewalk features and preserve the material in place during construction will be required. Historic sidewalk features should be covered with a protective material to avoid scratches and staining from adjacent construction work. OCS poles will not be installed in terrazzo installations or vault lights. Sidewalk ramps will be designed or located to avoid physical damage or alteration of historic sidewalk features. The existing concrete curb will not be removed at bump out areas in order to protect the historic sidewalk feature from being saw cut or from cracking. These measures will reduce the potential to alter or cause physical damage to the historic sidewalk features, and therefore ensure no substantial adverse change to the historic district or individually significant resources. Should incidental damage occur during construction occur, the historic sidewalk feature will be repaired or replaced in kind by a qualified contractor in a manner consistent with the Secretary's Standards. In the unlikely event that the sidewalk feature cannot be treated in accordance with the Secretary's Standards, there would still be a less-than-significant impact on the historic building that fronts the sidewalk, and there would be no substantial adverse change in the overall significance of the historical resource because enough contributing features would remain that the historical resource would retain its designation.

Operational Period

MM-CUL-O1: The City of Los Angeles shall ensure that design and installation of all project facilities and elements that are adjacent to or abutting historical resources or within a historic district will be consistent with the surrounding design context. The appropriateness of the design will be achieved through consultation with and approval by the City of Los Angeles Office of Historic Resources, applying the Secretary's Standards. Project facilities and elements shall be designed for consistency and installed to the satisfaction of the City Engineer/City Architect and will be in compliance with the *Historic Downtown Los Angeles Design Guidelines* and the *Broadway Streetscape Master Plan*, as applicable. LABOE shall be the responsible party. LABOE shall consult on the design with the City of Los Angeles Office of Historic Resources. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.3.4.3 Paleontological Resources

Deeper excavations for the Project may encounter significant paleontological resources. Implementation of Mitigation Measure MM-CUL-C2 would reduce the impact associated with the Project to a less-than-significant level.

MM-CUL-C2: If excavations for the Project take place at depths greater than five feet, these excavations shall be monitored on a fulltime basis by a qualified paleontological monitor. Monitoring may be reduced if excavations below a depth of five feet are determined to be in artificial fill materials, or if some of the potentially fossiliferous units described herein are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.

The paleontologic monitors shall be equipped to salvage fossils if they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor shall have authority to temporarily divert excavation or grading away from exposed fossils in order to professionally and efficiently recover the fossil specimens and collect associated data. All efforts to avoid delays in project schedules shall be made. At each fossil locality, field data forms shall be used to record pertinent geologic data, stratigraphic sections shall be measured, and appropriate sediment samples shall be collected and submitted for analysis.

Fossils collected, if any, shall be transported to a paleontological laboratory for processing where they shall be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility (such as the Natural History Museum of Los Angeles County).

Following analysis, a Report of Findings with an appended itemized inventory of specimens shall be prepared. The report and inventory, when submitted to the appropriate lead agency along with confirmation of the curation of recovered specimens into an established, accredited museum repository, shall signify completion of the program to mitigate impacts on paleontological resources.

3.3.5 Significant Unavoidable Impacts

No significant and unavoidable impacts would occur under any of the build alternatives.

3.3.6 Cumulative Impacts

3.3.6.1 Archaeological Resources

There are an estimated 74 projects currently underway or planned in the vicinity of the Project, which could contribute to a cumulative archaeological resources impact. The majority of these projects are building rehabilitations and development of vacant land (e.g., typically land that is presently improved as surface parking lots), with associated ground disturbance. Cumulative growth and development could have impacts if it disturbed, damaged, or degraded an archaeological resource or the setting of a significant prehistoric or historical archaeological resource. However, it is unknown if significant resources exist in these areas. The potential for an individual project to affect significant cultural resources is unknown, but given the number of projects, it is possible that cumulative growth and development in downtown Los Angeles could have impacts on significant prehistoric or historical archaeological resources.

The proposed Project's build alternatives would not contribute to a cumulative impact related to cultural resources. Treatment of any discovered archaeological resources as specified in the LABOE's *Greenbook* (2009) would reduce project-related impacts to a less-than-significant level; therefore, the build alternatives' contribution to significant cumulative impacts would be rendered less than cumulatively considerable.

For the reasons stated above, the Project would not have a considerable contribution to significant cumulative impacts on archaeological resources

3.3.6.2 Historical Resources

There are an estimated 74 projects currently underway or planned in the vicinity of the Project; however, projects that could contribute to a cumulative historical resources impact are limited to those within the sightlines of the project alignment under the build alternatives. By that definition, approximately 50 of the 74 related projects are within the area for cumulative impacts related to historical resources.

Within the densely developed context of downtown, the area for cumulative impacts would consist of a viewshed along the streets that comprise the 3.8-mile project alignments for the 7th Street and 9th Street alternatives with the Grand Avenue extension. The area for consideration of cumulative historical resources impacts would also extend out laterally from the alignment to the limits of sightlines, typically a maximum distance of 0.5 mile, often much shorter, where topographic features, freeway configurations, or building placements do not further reduce sightline distances. Within this definition, those 50 projects with potentially cumulative effects define portions of the northern, southern, and eastern segments of the cumulative viewshed.

Development proposed as part of the related projects calls for the rehabilitation of existing buildings and development of vacant land (e.g., typically land that is presently improved as surface parking lots). Such development would be subject to design regulations and policies intended to protect historical resources and promote high-quality, aesthetically attractive new development.

Several related projects call for the rehabilitation of existing buildings (e.g., the Hall of Justice, *Herald Examiner* offices, and the related printing plant property at 1115 S. Hill Street, the Embassy Towers, etc.) would refurbish buildings by preserving key architectural design elements and replacing obsolete, non-operational building infrastructure. As such, the rehabilitation projects are expected to have positive effects on historical resources within the project viewshed.

Of the remaining related projects, two are streetscape improvement projects that have been referenced previously in this section (the *Broadway Streetscape Master Plan* and the Figueroa Corridor Streetscape Project); the other is the Regional Connector Project—a public transit improvement project that calls for the construction of a 1.9-mile underground light rail system, featuring at least three new stations that would connect the Blue, Gold, and Exposition Lines. The Regional Connector Project is a tunneling project with a very small number of above-ground associated train station facilities. Because the majority of the construction work would take place within the street right-of-way, similar to other public works projects that have occurred on a routine basis within the public right-of-way downtown, and because nearly all project features, with the exception of train station entrances, would be underground, views of historical resources would not be adversely affected.

The two streetscape projects call for improved pedestrian, bicycle, and public transit circulation; enhanced sidewalk and crosswalk treatments; design-coordinated and setting-appropriate wayfinding signage; and the installation of trees and ground-level plantings as well as the preservation of existing character-identifying design features. The primary effect of these projects would be to create more unified streetscapes along Figueroa Street, 11th Street, and Broadway. The effect is expected to be positive.

None of the build alternatives would result in effects that would be cumulatively significant when combined with other related projects in downtown Los Angeles. Similarly, visual changes associated with the build alternatives would not result in a cumulatively considerable contribution to a significant cumulative impact. Views of architecturally or historically significant individual buildings would be preserved. In addition, outside the Historic Core—where there is a significant concentration of architecturally and historically significant buildings and other objects (e.g., certain special sidewalk treatments along Broadway, historic streetlight bases)—the diversity in architectural treatments within most portions of downtown makes it a fairly forgiving and flexible urban design context in which to incorporate new public transit infrastructure and streetscape design elements.

Within the Historic Core, specific design guidelines, including the *Broadway Streetscape Master Plan* and *Historic Downtown Los Angeles Design Guidelines*, would ensure that all improvements are designed in a manner that would be consistent with the design setting. The majority of the design features proposed would occur slightly above, at, or below street level and incorporate features (benches, poles, and limited signage) that would not block views of historical resources or cast significant shadows that would have the potential to affect shade-sensitive viewers.

Power for the streetcar system would be provided by a traction power system featuring TPSS and an OCS. As discussed in Chapter 2, *Project Description*, there are two potential configurations for the OCS wires. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Poles would be approximately 25 to 30 feet tall and are typically installed at intervals of about 80 to 120 feet. Wire heights typically range between approximately 18 and 19 feet. Catenary poles could be designed to incorporate elements of decorative streetlights or to meet design standards for designated streetscapes. Historically, streetcars operated along many of the streets within the viewshed, utilizing a system of poles and overhead wires that was far more extensive than what is proposed. Also, because the proposed features would be consistent with all design policies governing downtown design districts and with new streetscape elements (e.g., landscaping, street furniture proposed as part of other related projects, as along both Figueroa Street and Broadway), the Project is not expected to result in cumulatively significant incremental impacts on historical resources.

Project features proposed consist of elements at or near street level and, accordingly, do not have the potential to substantially alter views of historical resources. Therefore, when considered along with other related projects, the Project is not expected to contribute to a cumulatively significant incremental effect on shade/shadow-sensitive receptors. Because the setting during the historic era included streetcar tracks, streetcar sheds and other facilities on the current parking lot between the Title Guarantee and Trust Building and the Subway Terminal Building, the design and placement of an MSF on these parcels would not change the character of the properties' use and would not alter the setting such that they could no longer convey their historic significance. The Hill and 5th Streets MSF would not demolish or materially alter in an adverse manner those physical characteristics of the Title Guarantee and Trust Building and the Subway Terminal Building that convey their historical significance and justify their inclusion, or eligibility for inclusion, in the CRHR; therefore, operation of a maintenance and storage facility would not cause substantial adverse change in the significance of a historical resource. The current setting of the Title Guarantee and Trust Building is not its historic setting because of its previous alteration by the demolition of surrounding buildings and their replacement with parking lots. The current setting of the Subway Terminal Building is not its historic setting because of its previous alteration by the removal of historic streetcar tracks and facilities and their replacement with a parking deck and surface parking lots. The Hill and 5th Streets MSF site would not demolish or materially alter in an adverse manner those physical characteristics of the Title Guarantee and Trust Building and the Subway Terminal Building that convey their historical significance and justify their inclusion, or eligibility for inclusion, in the CRHR. Furthermore, TPSS units would not be located on the site of the Friday Morning Club, Bullock's Downtown Department Store, or the Subway Terminal Building. The two TPSS facilities proposed within the historic district would be located in parking lots or behind buildings that are not historical resources, and therefore would not reduce the integrity or significance of the district. The TPSS facilities proposed adjacent to these resources would be designed with a compatible architectural treatment, following the *Broadway Streetscape Master Plan* and *Historic Downtown Los Angeles Design Guidelines* as applicable, and would not reduce the integrity or significance of the historical resources.

As described above, proposed buildings features, such as the MSF and TPSS facilities, would be designed to be compatible with their design settings, following the *Broadway Streetscape Master Plan* and *Historic Downtown Los Angeles Design Guidelines* as applicable, and would not possess either the massing or height required to cast shade/shadow on shade-sensitive viewing groups.

For the reasons stated above, the Project would not have a considerable contribution to significant cumulative impacts on historical resources.

3.3.1.1 Paleontological Resources

There are an estimated 74 projects currently underway or planned in the vicinity of the Project, which could contribute to a cumulative paleontological resources impact. The majority of these projects are building rehabilitations and development of vacant land, with associated ground disturbance. Cumulative growth and development could have impacts resulting in the permanent loss of, or loss of access to, a paleontological resource.

However, the proposed project alternatives would not contribute to a cumulative impact related to permanent loss of, or loss of access to, a paleontological resource. Mitigation Measure **MM-CUL-C2** would reduce potential project-related impacts. This mitigation measure includes monitoring, recovery, treatment, and deposit of fossil remains in a recognized repository. The incremental effects of the proposed Project, after mitigation, would not contribute to a significant adverse cumulative impact on paleontological resources. With mitigation, all project-related impacts would be reduced to a less-than-significant level, and the build alternatives would not contribute to significant cumulative impacts.

This page was intentionally left blank.

3.4 Energy

This section describes the regulatory setting and affected environment related to energy consumption in the project area, and identifies the potential for impacts related to energy pursuant to CEQA.

3.4.1 Regulatory Setting

3.4.1.1 Federal

Moving Ahead for Progress in the 21st Century Act

Signed by President Obama in July 2012, the *Moving Ahead for Progress in the 21st Century Act* (MAP-21) represents the first multi-year transportation authorization act since 2005, funding surface transportation programs with more than $105 billion for fiscal years 2013 and 2014. The funding was extended through September 30, 2015 (FHWA 2015). Among the provisions within MAP-21 that relate to energy is the scope of state and metropolitan planning processes, which aim to “protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.” MAP-21 also authorized $70 million for a public transportation research program that focuses on energy efficiency and system capacity, among other items. With the exception of these provisions of MAP-21, there is no federal legislation related specifically to energy efficiency in public transportation project development and operation.

3.4.1.2 State

California Energy Commission

The California Energy Commission (CEC) is responsible for, among other things, forecasting future energy needs for the state and developing renewable energy resources and alternative renewable energy technologies for buildings, industry, and transportation. Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) requires the commission to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state’s electricity, natural gas, and transportation fuel sectors. The report provides policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The *2015 Integrated Energy Policy Report*, required under SB 1389, was released to the public in February 2016 (California Energy Commission 2016).

Executive Order S-3-05

Executive Order (EO) S-3-05, issued in June 2005, sets specific greenhouse gas (GHG) emission reduction targets for the state and gives the California Transportation and Housing Agency responsibility to help meet the targets. EO S-3-05 sets 2050 GHG reduction targets at 80 percent below 1990 levels and envisions reduced vehicle miles traveled (VMT) and increased vehicle fuel efficiency as major factors in achieving GHG reductions.

Executive Order B-30-15

EO B-30-15, issued in April 2015, sets specific GHG emission reduction targets for the state and requires all state agencies with jurisdiction over sources of GHG emissions to implement measures to help meet the targets. EO S-3-05 sets 2030 GHG reduction targets at 40 percent below 1990 levels and is envisioned to help make it possible to reach the ultimate goal of reaching the emission reduction targets established in S-03-05 stated above (Office of the Governor 2015).

Assembly Bill 32: *Global Warming Solutions Act*

Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32 (the *Global Warming Solutions Act*) into law on September 27, 2006, requiring the California Air Resources Board (ARB) to reduce GHG emissions to 1990 levels by 2020 and maintain and continue reductions beyond 2020. ARB prepared the AB 32 scoping plan, which has been approved and contains a range of GHG reduction actions, such as direct regulations; alternative compliance mechanisms; monetary and non-monetary incentives; voluntary actions; market-based mechanisms, such as a cap-and-trade system; and an AB 32 program implementation regulation to fund the program. A reduction in energy use, whether achieved through energy-efficient products, reduced VMT, or other means, is one of the primary ways that California expects to meet its AB 32 goals.

Assembly Bill 2076, Reducing Dependence on Petroleum

AB 2076 (passed in 2000 [Shelley, Chapter 936, Statutes of 2000]) directed CEC and ARB to develop and adopt recommendations for reducing the state's dependence on petroleum. The bill sets a performance-based goal to reduce petroleum demand to 15 percent below 2003 demand by 2020.

3.4.1.3 Local

Southern California Association of Governments

With more than 18 million people as of 2010, the Southern California Association of Governments (SCAG) region is the second-most populated metropolitan area in the United States. Growth in population is expected to result in greater demands on the region's transportation system. State and federal mandates require SCAG to prepare a regional transportation plan (RTP) every 3 years. The current 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) provides a long-range vision for regional transportation goals and policies and predicts transportation challenges and the region's future transportation strategy. The RTP/SCS establishes the following goals relevant to the Project:

- Preserve and ensure a sustainable transportation system.
- Actively encourage and create incentives for energy efficiency, where possible.

The Draft 2016–2040 RTP/SCS was released in December 2015. The revised RTP/SCS includes $556.5 billion in transportation investments, and the strategies outlined in the 2016 RTP/SCS will help reduce GHG emissions to meet California's targets (SCAG 2015).

South Coast Air Quality Management District

As described in the *Air Quality and Climate Change Assessment Report* (see Appendix E), the South Coast Air Quality Management District (SCAQMD) has primary responsibility for developing plans and regulations to improve air quality in the South Coast Air Basin. The most recently approved air quality management plan (AQMP) is the 2012 update, which was adopted by the SCAQMD Governing Board on December 7, 2012 (SCAQMD 2012). The Final 2012 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. Among other strategies, the AQMP promotes reductions in VMT through the development of alternative transportation options.

The most recent AQMP is the 2016 update, which is under development. The upcoming 2016 AQMP is anticipated to include strategies to meet the following National Ambient Air Quality Standards: 8-hour ozone (70 parts per billion [ppb]) by 2032; annual particulate matter 2.5 microns or less in diameter ($PM_{2.5}$) (12 micrograms per cubic meter [$\mu g/m^3$]) by 2025; and 24-hour $PM_{2.5}$ (35 $\mu g/m^3$) by 2019. The SCAQMD governing board is expected during summer/fall of 2016 to consider adoption of the 2016 AQMP and would submit the plan to the U.S. Environmental Protection Agency (EPA) by July 2016 (SCAQMD 2016).

City of Los Angeles General Plan

Elements of the *City of Los Angeles General Plan* include *Air Quality, Conservation, Housing, Noise, Open Space, Service Systems/Public Recreation, Framework, Safety*, and *Mobility*. The following elements are relevant to energy use.

Mobility Plan 2035

Mobility Plan 2035, which serves as the City's transportation element, updates and replaces the original *Transportation Element*, was adopted by the City in January 2016 and is a guide for future development of a citywide transportation system. *Mobility Plan 2035's* goals include: safety first; world class infrastructure; access for all Angelenos; collaboration, communication, and informed choices; and clean environments and healthy communities. Each goal is composed of objectives that have measurable targets to monitor progress and policies that guide the City's achievement of these goals (City of Los Angeles 2016a).

Air Quality Element

An optional element of the General Plan, the *Air Quality Element*, was adopted by the City Council in November 1992. The following provisions of the *Air Quality Element* are related to transportation energy use:

- Goal 2: Less reliance on single-occupant vehicles with fewer commute and non-work trips.
    - Objective 2.2: It is the objective of the City of Los Angeles to increase vehicle occupancy for non-work trips by creating disincentives for single-passenger vehicles and incentives for high-occupancy vehicles.

Conservation Element

Adopted in 2001, the *Conservation Element* surveys the various laws, requirements, and procedures that have been established for the protection of natural resources. Primarily an informational document, the *Conservation Element* is designed to help users understand the context, history, and opportunities for the protection and improvement of the City's natural resources. The *Conservation*

Element incorporates the energy provisions of the *Infrastructure Systems Element* by reference (see *Framework Element* below).

Framework Element

When the *City of Los Angeles General Plan Framework Element* was adopted in 1996, the City identified a revised plan structure that proposed to condense the five plans into a new element called *Infrastructure Systems*. The most recent version of the *Framework Element* includes Infrastructure and Public Services in Chapter 9. This chapter includes goals, objectives, and policies to address 13 infrastructure and public service systems (e.g., wastewater, telecommunications) that were identified to help support the City's growing population and economy into the 21st century (City of Los Angeles 2016b).

Power Integrated Resource Plan: Los Angeles Department of Water and Power

Released to the public in December 2015, the most recent iteration of the *Power Integrated Resource Plan* identified a portfolio of power generation resources and power system assets that would meet the City's future energy needs, with the lowest cost and risk possible, consistent with the Los Angeles Department of Water and Power's (LADWP's) environmental priorities and reliability standards. Previous versions of the *Power Integrated Resource Plan* are also cited in this section, where applicable.

Building Construction Standards

Title 24 of the *California Code of Regulations* establishes energy conservation standards for new construction. These standards are related to insulation requirements, glazing, lighting, shading, and water and space heating systems. The *Los Angeles Municipal Code* incorporates these state requirements (Section 91.1300).

The *Los Angeles Green Building Code* is based on the 2013 *California Green Building Standards Code*, commonly known as "CALGreen," which was developed and mandated by the state to attain consistency among the various jurisdictions within the state and reduce energy and water use, waste, and the overall carbon footprint in buildings. As of January 2013, all state-owned buildings; residential buildings constructed throughout the state; public elementary and secondary schools and community colleges; qualified historical buildings, structures, and associated sites; general acute care hospitals, clinics, psychiatric hospitals, and skilled nursing facilities; and graywater systems are subject to the *Green Building Code* (Title 24, *California Code of Regulations* part 11).

3.4.2 Environmental Setting/Affected Environment

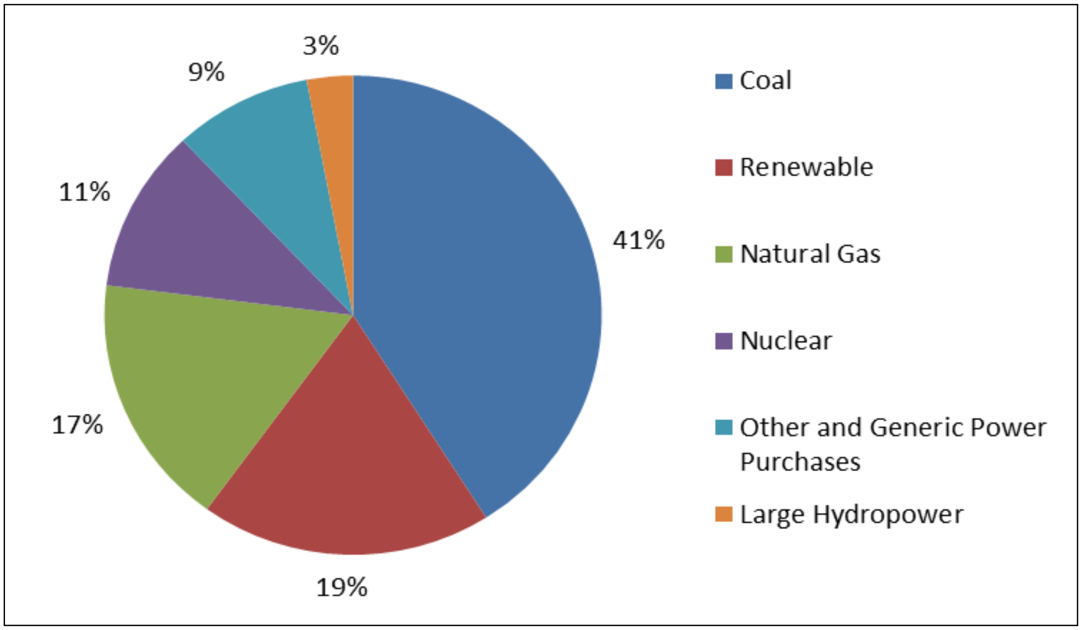
3.4.2.1 Electricity

LADWP provides electricity to residential and business customers in its service area, including areas along the alignments for the build alternatives. With a net dependable generation capacity of 7,628 megawatts, LADWP maintains a distribution system of more than 6,800 miles of overhead distribution lines and 3,600 miles of underground distribution lines (LADWP 2015). It is estimated that business and industry consume approximately 70 percent of the electricity in the City (LADWP 2012).

Figure 3.4-1 shows the sources of LADWP's electricity, with coal representing 41 percent of the energy mix as of 2011. By 2027, LADWP will no longer accept electricity from coal-fired generation sources, which it will replace with a combination of natural gas, renewable energy, and increased energy efficiency (LADWP 2015).

At present, the only electricity consumed along the public right-of-way of the alignments for the build alternatives is for street lighting and traffic signals. Commercial, residential, and other off-street land uses adjacent to the alignments for the build alternatives are tied to LADWP's electrical grid.

Figure 3.4-1. LADWP Energy Mix, 2011



Source: LADWP 2012 *Power Integrated Resource Plan*.

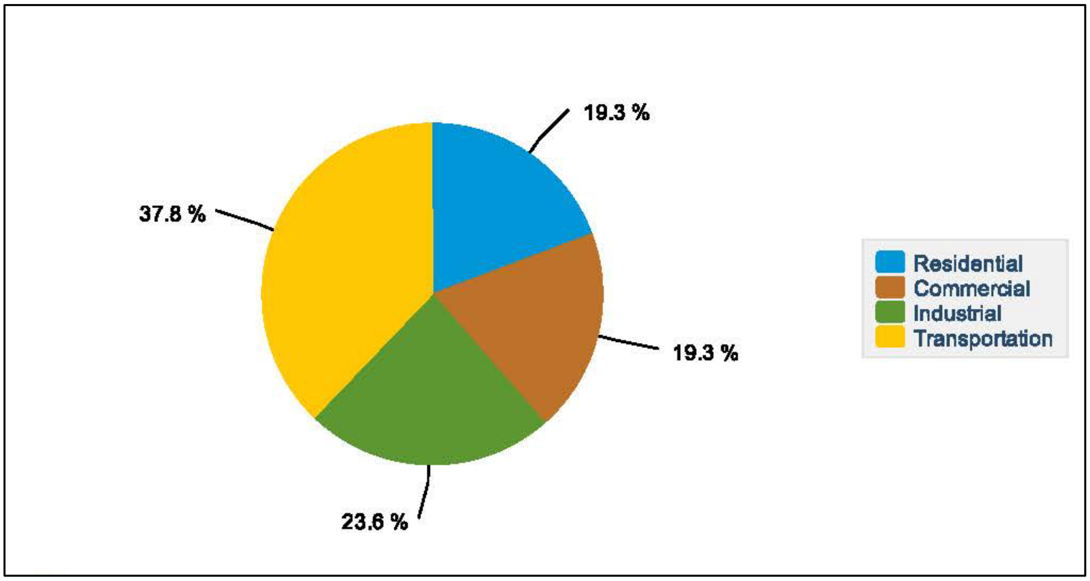
3.4.2.2 Transportation Energy

As shown in Figure 3.4-2, nearly 38 percent of the energy consumed in California is for transportation purposes. The vast majority of this energy is from nonrenewable sources, with 96 percent of the state's transportation needs being met by petroleum-based fuels (Cal/EPA 2007).

During the day, 115,000 internal trips occur in the study area[1] (all modes of transportation). This represents approximately 80 percent of study area trips. With respect to travel modes, automobile travel accounts for 60 percent of the trips (approximately 70,000 daily trips), while alternative modes (walk, transit, and bike) account for the remaining 40 percent. The average length of an internal trip is 0.7 mile (Fehr and Peers 2013).

[1] The study area, for the purposes of the VMT analysis conducted by Fehr and Peers, is the area bounded by Interstate 110 on the west, US-101 on the north, Los Angeles Street on the east, and Pico Boulevard on the south.

Figure 3.4-2. California Energy Consumption by End-Use Sector (2013)



Source: U.S. Energy Information Administration 2013.

External trips, which begin or end outside of the study area, account for 20 percent of daily trips in the study area. Currently, much of this external travel is by automobile, with an average length for an external trip of 8.8 miles (Fehr and Peers 2013)

In addition to study area automobile trips, downtown Los Angeles has the highest concentration of public transit services in the region, with 10 regional and local transit operators providing services. With the exception of services offered by regional bus lines, transit operators in the study area provide service mainly during peak commute hours and in the peak direction. Los Angeles County Metropolitan Transportation Authority (Metro), the study area's largest transit provider, operates 50 bus lines in the area, with each line providing anywhere from five to more than 100 daily trips in each direction. Metro also operates the Red, Purple, Blue, and Expo rail lines within the study area.

3.4.3 Environmental Impact Analysis

3.4.3.1 Methodology

This energy analysis considers energy consumption from construction and operation of the Project, including the following elements:

- Construction-related energy (expressed in British thermal units [BTUs], converted from the number of gallons of gasoline or diesel consumed).
- Direct energy consumption from electricity consumption during streetcar operations and operations at the maintenance and storage facility (MSF) (expressed in BTUs).
- Indirect energy consumption resulting from changes in overall traffic operations.
- Net change in Project-related energy consumption.

Table 3.4-1 provides the energy intensity of the modes of transportation used in the study area. Although rail modes require a large amount of energy to move rail vehicles relative to cars, the high number of passengers they are capable of transporting makes their per-person energy requirements the lowest of the major modes of transportation.

Table 3.4-1. Transportation Energy Intensity

Transport Mode	Typical Energy Intensity (BTUs per vehicle-mile)	Typical Energy Intensity (BTUs per passenger-mile)
Passenger Vehicles (Cars)	4,873	3,144
Light Trucks	6,446	3,503
Buses (Transit – Natural Gas or Diesel)	37,442	4,071
Transit Rail (Light and Heavy)	63,265	2,404
Source: Oak Ridge National Laboratory 2015		

Anecdotal evidence suggests that streetcars may be more energy efficient per passenger mile than other transit modes. For example, Tucson's Sun Link streetcar vehicle was designed to have an energy intensity of 37,192 BTUs per vehicle-mile and 1,283 BTUs per passenger-mile with all seats occupied. Assuming higher ridership, with all seats occupied and passengers standing in aisles, Sun Link was designed to have an energy intensity of 40,945 BTUs per vehicle mile and 358 BTUs per passenger mile (Hecht pers. comm.).

The estimate of construction-related energy use (i.e., fuel consumption) was calculated by applying the EPA-derived data regarding carbon dioxide (CO_2) emissions per gallon of gasoline (19.4 pounds/gallon) and diesel (22.2 pounds/gallon) to total CO_2 emissions (separated by fuel source) predicted by the California Emissions Estimator Model™ (CalEEMod) in the air quality emissions analysis. The *Air Quality and Climate Change Assessment Report* (Appendix E) includes details regarding the construction equipment and activity assumptions that were used to estimate CO_2 emissions.

The operational energy impact analysis uses VMT data for existing conditions and Project-specific VMT data to compare energy consumption under Existing-Year (2016), Opening-Year (2020), and Horizon-Year (2040) conditions. In addition, issues related to construction-related fuel consumption are addressed.

To quantify the reduction in VMT, average vehicle trip lengths were calculated using the City's travel model. Two different types of passenger vehicle (car) trips would be diverted to the streetcar. The first type is the internal trip, and the second type is the external trip. In addition, the City's travel model is used to stratify changes in VMT by speed and calculate the average vehicle occupancy in the study area.

3.4.3.2 Thresholds of Significance

California Environmental Quality Act

The State CEQA Guidelines require an EIR to consider the potentially significant energy implications of a project, if relevant. Appendix F to the State CEQA Guidelines identifies the potential environmental impacts related to energy that may be included in an EIR.

L.A. CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide* (2006) provides further guidance for determining the significance of impacts on utilities and service systems. With respect to energy, a determination of impacts would be made on a case-by-case basis.

Based on Appendix F of the State CEQA Guidelines and the *L.A. CEQA Thresholds Guide*, the analysis of potential energy resource impacts included consideration of the following elements:

- Energy consumption and conservation standards
  - The degree to which the project complies with existing energy standards.
  - Whether and when the needed infrastructure was anticipated by adopted plans.
  - The degree to which the project design and/or operations incorporate energy conservation measures, particularly those that go beyond City requirements.
- Energy distribution
  - The effects of the project on local and regional energy supplies and on requirements for additional capacity.
  - The effects of the project on peak- and base-period demands for electricity and other forms of energy.
- Total energy consumption
  - The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
  - The extent to which the project would require new (offsite) energy supply facilities and distribution infrastructure or capacity-enhancing alterations to existing facilities.
- Energy demand
  - The effects of the project on energy resources.
  - The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

In addition, according to the State CEQA Guidelines,[2] a significant adverse impact would occur if a project results in the "inefficient and unnecessary consumption of energy."

3.4.3.3 Alternative 1: No Project Alternative

Under the No Project Alternative, the improvements and facilities associated with the Project would not be constructed. The No Project Alternative represents conditions in the project study area that would remain if the proposed Project did not occur. It includes those improvements projected to be funded under the current RTP. The No Project Alternative also serves as the baseline for comparison and assessment of the project alternatives. The No Project Alternative would result in increased diesel fuel and electric power consumption when compared to the current conditions because of

[2] *California Public Resources Code*, Title 14, Division 6, Chapter 3, *California Environmental Quality Act* Guidelines, Section 15126.4(a)(1).

growth in travel demand. Without the proposed Project, more automobile trips would occur, which would result in increased energy consumption under the No Project Alternative.

3.4.3.4 Alternative 2: 7th Street With Grand Avenue Extension

Construction Impacts

Project construction includes construction of the streetcar line itself and associated infrastructure, traction power substation (TPSS), and MSF.

Energy Consumption and Conservation Standards

Less-than-significant impact. As detailed in the *Construction Methods Technical Memorandum* (Appendix C), construction, startup, and testing of the build alternatives would occur over a 24-month period (18 months of active construction and 6 months of testing). The energy consumption for each major construction activity described in the *Construction Methods Technical Memorandum*. The results of the calculations are discussed below.

Energy Distribution and Roadway Infrastructure and Traction Power Substations

Data derived from the *Air Quality and Climate Change Assessment Report* (Appendix E) indicate that activities related to construction of energy distribution infrastructure, roadway infrastructure, and the TPSS would result in 1,440 tons of CO_2 being emitted during construction of the build alternatives. Assuming that the fuel source for construction vehicles and equipment would be primarily diesel, infrastructure and TPSS construction activities would consume, on average, approximately 48 million BTUs per day and nearly 240 million BTUs over a 5-day workweek.

Maintenance and Storage Facility

Construction activities associated with the MSF would result in the emission of just under 100 tons of CO_2 over the 12-month MSF construction period. Assuming that the fuel source for construction vehicles and equipment would be primarily diesel, MSF construction activities would consume, on average, approximately 5 million BTUs per day and nearly 25 million BTUs over a 5-day workweek.

Total Energy Consumption

Together, construction of the MSF, TPSS, and energy distribution infrastructure would require the consumption of approximately 265 million BTUs per 5-day workweek. However, energy use during construction would be temporary and would be controlled and managed so as to not be wasteful, inefficient, or unnecessary. Construction contractors would comply with Section 11000, Part 1, of the Bureau of Engineering Master Specifications, which requires all equipment and products to be operated in accordance with manufacturer's published recommendations as well as commercial standards established by professional organizations including, but not limited to, the American Society for Testing and Materials, the American National Standards Institute, and the American Society of Mechanical Engineers. No applicable energy standards would be violated. Additionally, construction debris and waste would be recycled, resulting in life-cycle energy savings. Although no additional energy conservation measures have been identified to further reduce energy consumption during construction, impacts related to construction-period energy consumption, conservation, and standards would be less than significant.

Demand for New Energy Supplies and Infrastructure

Less-than-significant impact. Diesel fuel would be the source of the vast majority of energy that would be consumed during the construction period. Given the extensive network of fueling stations and the fact that, on average, less than 400 gallons of diesel fuel would be required per day, construction of the build alternatives would result in a negligible reduction in regional diesel fuel supplies and no new or expanded sources of energy or infrastructure would be required to meet construction energy demands. Therefore, impacts related to regional energy supplies and demand would be less than significant.

Operational Impacts

The following discussion identifies energy impacts related to operation of Alternative 2.

Energy Consumption and Conservation Standards

Direct

Less-than-significant impact. Under Alternative 2, there would be several streetcar vehicles in service concurrently at any given time during operating hours. Six streetcar vehicles would be in service only during commuting periods on weekdays (6 a.m.–9 a.m. and 3 p.m.–6 p.m.), with headways of approximately 7 minutes. Three or four vehicles would be in service during all other operating hours, with headways of 15 minutes and 10 minutes, respectively. Weekday operation would result in the consumption of nearly 31 million BTUs, and weekend operation would consume in excess of 25 million BTUs. Overall weekly energy consumption would be 205 million BTUs.

Energy consumption associated with operation of the MSF would involve the use of electricity as well as fuel used by employee vehicles when traveling to and from the site. As specified in the *Air Quality and Climate Change Assessment Report*, electricity consumption would result in approximately 110 pounds of CO_2, the equivalent of 2.15 million BTUs, being emitted over the course of a 7-day week (see Appendix E).

Total direct energy associated with operation of the build alternatives would be just over 207 million BTUs per week. Although energy would be consumed during operation of the build alternatives, energy use would not be wasteful, inefficient, or unnecessary because facility operations would be conducted in adherence to applicable regulations (e.g., *Los Angeles Green Building Code*). It would be consumed to provide a new transportation service and meet the project objectives identified in Chapter 2, *Project Description*. Furthermore, it is anticipated that the MSF sites would be illuminated with low-level lighting used for 24-hour operations, and transportation fuel use associated with the employees would result in a negligible difference in energy consumption.

Aside from complying with the general policies identified in Section 3.4.1, *Regulatory Setting*, above, such as the *Los Angeles Green Building Code* and Title 24, *California Code of Regulations*, there are no applicable quantitative operations-related energy conservation measures with which the Project would be required to comply. Moreover, as noted in the discussion of indirect impacts below, the VMT reduction due to the Project would result in energy savings, which would partially offset the increase in energy use associated with operation of the streetcar vehicles and the MSF. Therefore, impacts related to direct operational energy consumption would be less than significant.

Indirect

No impact. In addition to direct energy consumption associated with streetcar vehicle and MSF operation, Alternative 2 is anticipated to displace trips that otherwise would have occurred with different modes of transportation. Although changes in energy consumption as a result of pedestrians, cyclists, and transit users taking the streetcar would be negligible, the alternative is projected to reduce the number of miles traveled by automobiles within and outside of the study area. Table 3.4-2 shows the reduction in daily VMT related to the streetcar operation, which is anticipated to be 6,807 vehicle-miles per day in the Opening Year (2020) and 8,597 in the Horizon Year (2040) (Metro 2016).

Table 3.4-2. Reduction in Daily Vehicle Miles Traveled by Speed under the Build Alternatives

Speed Bin (mph)[a]	Alternative 2		Alternative 3		Alternative 4		Alternative 5	
	Opening Year (2020)	Horizon Year (2040)	Opening Year (2020)	Horizon Year (2040)	Opening Year (2020)	Horizon Year (2040)	Opening Year (2020)	Horizon Year (2040)
0–5	1,410	1,782	1,131	1,401	1,386	1,759	1,009	1,267
5–10	695	878	557	690	683	867	497	625
10–15	736	929	590	731	723	918	526	661
15–20	1,206	1,523	967	1,198	1,185	1,504	862	1,084
20–25	988	1,248	792	981	971	1,232	707	888
25–30	477	602	382	474	469	595	341	429
30–35	313	396	251	311	308	391	224	282
35–40	218	275	175	217	214	272	156	196
40–45	259	327	208	257	254	323	185	233
45–50	225	284	180	223	221	280	161	202
50–55	143	181	115	142	141	178	102	129
55–60	89	112	71	88	87	110	63	80
60–65	34	43	27	34	33	42	24	31
65–70	14	17	11	14	13	17	10	12
TOTAL	**6,807**	**8,597**	**5,457**	**6,761**	**6,688**	**8,488**	**4,867**	**6,119**

[a] *Speed Bin* is a travel speed interval. For example, VMT occurring at 6 mph would fall within the 5–10 Speed Bin; VMT occurring at 50 mph would fall within the 50–55 Speed Bin.
Source: Metro 2016.

The VMT reduction represents an energy savings from the build alternatives, which would partially offset the increase in energy use associated with operation of the streetcar vehicles and the MSF. The streetcar is a non-polluting, electric-powered vehicle that lessens reliance on fossil fuels. If the proposed Project were in operation, an additional amount of annual energy usage would be required. However, this is not considered a substantial increase in energy consumption and represents a very small percentage of generated electric power. In addition, trips made on buses and cars in downtown Los Angeles that may be diverted to the streetcar would balance the additional electrical power required for streetcar operation. Therefore, the reduction in indirect operational energy consumption would be a benefit of the build alternatives.

Table 3.4-3 summarizes the operational energy usage under each Alternative.

Table 3.4-3. Operational Energy Usage under each Alternative

Component	Fuel Quantity Used	Energy Usage (MMBtu/yr)	
Maintenance and Storage Facility			
Electricity	LADWP generation mix	740	
Natural Gas	342,220 scf/yr natural gas	339	
Worker Commuting	19,737 gal/yr gasoline	2,379	
Subtotal		3,458	
Streetcar Operation			
Electricity	LADWP generation mix	10,666[a]	
Subtotal MSF +Streetcar Operations		14,124	
Energy Savings from VMT Reduction (MMBtu/yr)[b]			
	2015	**2020**	**2040**
Alternative 2	-14,101	-12,961	-10,634
Alternative 3	-11,309	-10,344	-8,362
Alternative 4	-13,855	-12,749	-10,502
Alternative 5	-10,086	-9,258	-7,566
Net Energy Usage During Operation (sum of all components) MMBtu/yr			
	2015	**2020**	**2040**
Alternative 2	23	1,163	3,490
Alternative 3	2,207	3,172	5,154
Alternative 4	269	1,375	3,622
Alternative 5	3,430	4,258	5,950

[a] Streetcar energy consumption estimate under Build Alternatives 2 and 4. Estimate is 5.7% lower (10,058) under Build Alternatives 3 and 5 due to shorter facility length.
[b] Negative number indicates energy use reduction due to VMT reduction.
gal/yr = gallons per year
MMBtu = million British thermal units
scf/yr = standard cubic feet per year
Source: Calculations by ICF International 2016 (Appendix M)

Energy Distribution and Roadway Infrastructure and Traction Power Substations

Roadway infrastructure and the TPSS support streetcar operation and would use negligible energy themselves. Their energy usage is included in the estimates above for streetcar operation.

Maintenance and Storage Facility

Energy usage associated with operation of the MSF was estimated using CalEEMod as described in Section 3.4.3.1. The energy usage of the MSF is included in Table 3.4-3 above.

Demand for New Energy Supplies and Infrastructure

Less-than-significant impact. Operation of the build alternatives would result in a new user (i.e., the streetcar system) drawing energy from the power grid and a net increase in electricity consumption within the study area. The LADWP 2015 *Power Integrated Resource Plan* projected future demand increases for electricity in its service area of less than 1 percent per year from 2015 until 2032 (after energy efficiency and distributed generation efforts are accounted for, the load growth is expected to amount to 0.8 percent per year) (LADWP 2015:15). The *Power Integrated Resource Plan*, which accounts for future development in its forecasts, would not require new or expanded sources of energy or infrastructure to meet the energy demands of operation of the build alternatives. Furthermore, LADWP has confirmed that the "project is part of the total load growth forecast for the City of Los Angeles and has been taken into account in the planned growth of the City's power system" (Garrity pers. comm.). Operation would result in a negligible increase in overall demand for electricity within the LADWP service area.

Energy distribution infrastructure (e.g., TPSS, poles, overhead wires) would be required to operate the streetcars, but would be constructed as a part of the Project and would be located along the project alignment. No new offsite energy supply facilities or infrastructure would be required and project operation would not affect the reliability of the existing electrical grid. Impacts related to demand for new regional energy supplies and infrastructure would be less than significant.

3.4.3.5 Alternative 3: 7th Street Without Grand Avenue Extension

Construction Impacts

Less-than-significant impact. There would be a negligible difference in construction techniques, duration, and intensity under the 7th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. Because Alternative 3 does not include construction of the Grand Avenue Extension, the construction energy impacts of Alternative 3 would be slightly less than under Alternative 2, by approximately 5.7 percent.

Operational Impacts

Less-than-significant impact. There would be a negligible difference in operations under the 7th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. Based on the information provided in Table 3.4-2, there would be less of a reduction in VMT resulting from operation of Alternative 3, as compared to Alternative 2 and Alternative 4. While lower ridership projections would result in a reduced VMT reduction benefit, because Alternative 3 does not include the Grand Avenue Extension, which would occur over a two-block area, the operational energy impacts of Alternative 3 could be slightly less (approximately 5.7 percent) than under Alternative 2 or 4, thus resulting in some offsetting reduction in energy consumption. In general, operational energy impacts of Alternative 3 would be similar to those of Alternative 2.

3.4.3.6 Alternative 4: 9th Street With Grand Avenue Extension

Construction Impacts

Less-than-significant impact. There would be no material difference in construction techniques, duration, or intensity under the 9th Street Alternative with Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. As such, construction energy impacts of Alternative 4 would be similar to those of Alternative 2.

Operational Impacts

Less-than-significant impact. There would be a negligible difference in operations under the 9th Street Alternative with Grand Avenue Extension when compared to the 7th Street Alternative with Grand Avenue Extension. Based on the information provided in Table 3.4-2, there would be less of a reduction in VMT resulting from operation of Alternative 4, as compared to Alternative 2. However, operational energy impacts of Alternative 4 would be similar to those of Alternative 2 because the Grand Avenue extension is included as part of this Alternative, thus providing increased ridership and indirect VMT reductions when compared to either Alternative 3 or Alternative 5.

3.4.3.7 Alternative 5: 9th Street Without Grand Avenue Extension

Construction Impacts

Less-than-significant impact. There would be no material difference in construction techniques, duration, or intensity under the 9th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative without Grand Avenue Extension, which would occur over a two-block area. As such, construction energy impacts of Alternative 5 would be similar to those of Alternative 3.

Operational Impacts

Less-than-significant impact. There would be a negligible difference in operations under the 9th Street Alternative without Grand Avenue Extension when compared to the 7th Street Alternative without Grand Avenue Extension. Based on the information provided in Table 3.4-2, there would be less of a reduction in VMT resulting from operation of Alternative 5, as compared to Alternative 2 and Alternative 4. While lower ridership projections would result in a reduced VMT reduction benefit, because Alternative 5 does not include the Grand Avenue Extension, the operational energy impacts of Alternative 5 could be slightly less (approximately 5.7 percent) than under Alternative 2 or 4, thus resulting in some offsetting reduction in energy consumption. Accordingly, operational energy impacts of Alternative 5 would be similar to those of Alternative 3.

3.4.4 Mitigation Measures

No mitigation measures would be required.

There would be no significant unavoidable impacts related to energy consumption.

3.4.5 Cumulative Impacts

Section 15130 of the State CEQA Guidelines states that the requirements of a cumulative impact analysis may be adequately met by providing "a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect."

The LADWP 2015 *Power Integrated Resource Plan* was used for this cumulative impact analysis related to energy. The resource study area is the LADWP service area covered by the plan, which includes the City of Los Angeles and surrounding areas.[3] The LADWP 2015 *Power Integrated Resource Plan* projects future energy demand in the LADWP service area. LADWP sales, net energy for load forecasting, peak demand forecast, and hourly allocation are based on:

- An economic forecast of Los Angeles County from the Los Angeles Modeling Group of the University of California, Los Angeles (Anderson Forecast Project).
- Demographic information from the California Department of Finance, Demographic Research Unit.
- A construction forecast from McGraw-Hill construction services.

The proposed Project, in conjunction with other reasonably foreseeable new construction and transportation projects in the vicinity of the proposed Project, would comply with federal, state, and local regulations to conserve and reduce energy usage. This Project, and other potential projects in the area, would comply with applicable energy efficiency guidance set by LADWP. Potential cumulative impacts related to construction would be less than significant.

LADWP predicts increases in electricity demand over the next decade. LADWP has increased its ability to serve the area by adding new facilities and increasing and diversifying its energy supplies. LADWP is committed to increasing electricity generation from renewable energy sources and ensuring a reliable flow of electricity to users in its service area. LADWP has confirmed that the "project is part of the total load growth forecast for the City of Los Angeles and has been taken into account in the planned growth of the City's power system" (Garrity pers. comm.). Because the model considers new development and demographic changes in the service area, it is reasonable to assume that the related projects have been accounted for in the 2015 *Power Integrated Resource Plan*. Nonetheless, LADWP will be required to construct new electrical infrastructure to accommodate future cumulative growth and meet the state-mandated 33 percent Renewables Portfolio Standard by 2020 and the state's emissions reduction requirement by replacing coal power with sustainable energy resources. The construction of that infrastructure could result in impacts on the environment; however, it is speculative to assume the potential new future infrastructure changes to achieve the IRP's goals, as well as the impacts of future unknown infrastructure changes, would result in significant and unavoidable impacts. Assuming there were a future cumulative energy impact, the proposed Project would not have a cumulatively considerable effect on overall energy supplies, conservation, and the demand for new energy infrastructure because the Project would be within the total load forecast for the City. Potential cumulative impacts related to operation would be less than significant.

[3] LADWP's overall service area includes parts of the Owens Valley, but because of the limited developable land and slow rates of growth, energy forecasts are not considered in the 2015 Power Integrated Resource Plan (LADWP 2015:A-3).

This page intentionally left blank.

3.5 Geology, Soils, and Seismicity

This section describes the regulatory setting and affected environment related to geologic, soil, and seismic conditions in the Project's study area. It also identifies the potential project impacts related to geology, soils, and seismicity pursuant to CEQA.

3.5.1 Regulatory Setting

3.5.1.1 Alquist-Priolo Earthquake Fault Zoning Act

The *Alquist-Priolo Earthquake Fault Zoning Act* (Alquist-Priolo) was passed into law in California to reduce hazards associated with surface faulting for structures meant for human occupancy. The law was a direct result of the 1971 San Fernando earthquake, which was caused by extensive surface fault ruptures. The earthquake damaged numerous homes, commercial buildings, and other structures. Surface rupture is the most easily avoided seismic hazard, and Alquist-Priolo provides a mechanism for reducing surface fault rupture losses statewide. The intent of the act is to ensure public safety by prohibiting the siting of most structures meant for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep (California Department of Conservation, California Geological Survey 2007).

3.5.1.2 Seismic Hazards Mapping Act

The *Seismic Hazards Mapping Act* (1990), addresses issues related to earthquake hazards from nonsurface fault rupture, including hazards related to liquefaction and seismically induced landslides. The purpose of the *Seismic Hazards Mapping Act*, which went into effect in 1991, is to identify and map seismic hazard zones. Such information can be used by cities and counties when preparing the safety elements of their general plans and encourages land use management policies and regulations that reduce seismic hazards. The act has resulted in the preparation of maps that delineate Liquefaction Zones and Earthquake-Induced Landslide Zones of Required Investigation (California Department of Conservation, California Geological Survey 2007).

3.5.1.3 California Building Standards Code

The California Building Standards Commission (Commission) is responsible for coordinating, managing, adopting, and approving building codes in California. The 2013 version of the *California Building Standards Code* (CBSC), which was reviewed and approved by the Commission at meetings in December 2012 and January 2013, went into effect on January 1, 2014.

The State of California provides minimum standards for building design through the 2013 *California Building Code* (CBC), a component of the 2013 CBSC (codified under California Code of Regulations Title 24). Chapters 16 through 18 of the 2013 CBC regulate structural design, structural tests and inspections, and soils and foundations. The CBC applies to building design and construction in the state and is based on the federal *Uniform Building Code* (UBC), which is used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions and contains numerous provisions that are more stringent than those in the UBC because of California's seismic and environmental conditions. According to Section 1613 of the CBC, "[e]very structure, and portion thereof, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with ASCE 7."[1]

A jurisdiction may establish more restrictive building standards because of local climatic, geological, or topographical conditions. The City of Los Angeles has chosen to adopt the CBC by reference, with minor amendments to address local characteristics.

3.5.2 Environmental Setting/Affected Environment

3.5.2.1 Regional Geology

The study area for geology is the region south of the Santa Monica Mountains and west of the Los Angeles River in the northeastern portion of the Los Angeles Basin. The Los Angeles Basin is a roughly north/south-trending depositional trough located in the northwestern portion of the Peninsular Ranges geomorphic province. Geologic structures in this region reflect the resolution of tectonic forces as the northwest/southeast-trending structures of the northern Peninsular Range Province, exemplified by the Whittier-Elsinore fault, meeting the Santa Monica-Hollywood-Raymond fault of the Transverse Range Province. A segment of the boundary between the Peninsular Range and the Transverse Range provinces is characterized by the Elysian Park anticline—a large fold associated with the uplift of the Elysian and Repetto Hills, which are located north and east of downtown Los Angeles. The Elysian and Repetto Hills are underlain by sedimentary bedrock of both marine and nonmarine origin, which has become folded into a series of low-relief, east/west-trending hills (City of Los Angeles, Department of Public Works, Bureau of Engineering 2004). Figure 3.5-1 shows the locations of known faults and Alquist-Priolo zones in the region.

3.5.2.2 Local Topography

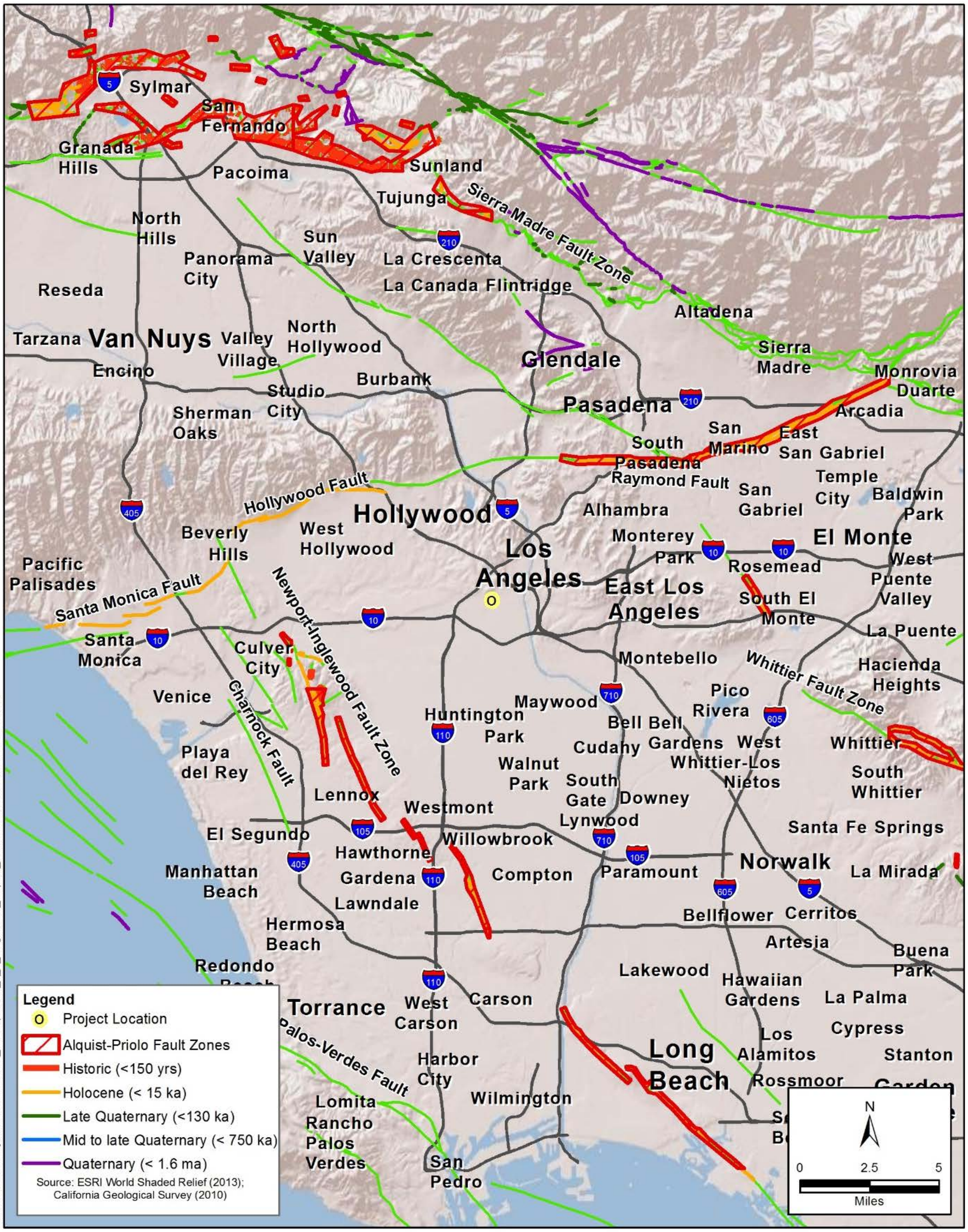
Ground surface elevations generally vary from approximately 243 feet along the southern portion of the project alignments to 387 feet along the northwestern portion. Slopes along the project alignments are generally gradual, with the exception of the 9 percent grade along 1st Street between Grand Avenue and Broadway (Los Angeles Streetcar, Inc. 2013).

3.5.2.3 Stratigraphy and Subsurface Materials

The downtown Los Angeles area has diverse stratigraphy, which includes many informal geologic units and geologic formations. According to maps prepared by the U.S. Geological Survey, the northern portion of the project alignment between 1st and 4th Streets is underlain by Quaternary alluvium and marine deposits, which are composed primarily of sedimentary rock types but may also include terrace rock types and lake or marine deposits. The southern portion of the project alignment is underlain by Holocene and late Pleistocene-era unconsolidated gravel, sand, and silt. Although these geologic deposit types are present beneath the project alignments, the downtown Los Angeles area has undergone extensive development and urbanization. As a result, engineered aggregate base materials and fill have been added to the area's subsurface, especially beneath those areas that serve as roadways (Metro 2010a).

[1] ASCE 7 is a document published by the American Society of Civil Engineers (ASCE) that specifies minimum design loads for buildings and other structures.

Figure 3.5-1. Regional Faults and Alquist-Priolo Fault Zones



This page was intentionally left blank.

3.5.2.4 Faulting and Seismicity

No portion of the project alignments lie within an area identified as an Alquist-Priolo Special Study Zone Area or Fault Rupture Study Area (City of Los Angeles, Department of City Planning 1996), but the Project would be located in a seismically active area, as discussed below.

Potentially Active Faults

The California Department of Conservation's Division of Mines and Geology delineates earthquake fault zones for the purposes of Alquist-Priolo. An active fault (or fault zone) is defined as a fault that has moved within Holocene time (about the last 11,000 years). Faults with no known displacement within Holocene time that show evidence of movement during Quaternary time (the last 1.6 million years) have been defined as potentially active. The project alignments are not within an Alquist-Priolo Special Study Zone, nor are they located within a Fault Rupture Study Area (City of Los Angeles, Department of City Planning 1996). Thus, the potential for ground surface rupture at the site is considered to be low.

Known regional faults that could produce ground shaking in the project study area include the Hollywood, Raymond, Newport-Inglewood, Verdugo, Santa Monica, Sierra Madre, and East Montebello faults (see Table 3.5-1).

Table 3.5-1. Proximity of the Alignments to Potentially Active Faults

Fault	Fault Type	Distance from Alignments (miles)	Direction from Alignments	Probable Maximum Magnitude
Elysian Park Thrust	Blind Thrust	2.5	North	Not provided
Elysian Park Fault	Blind Thrust	2.5	North	Not provided
Hollywood Fault	Left-Reverse	4.2	Northwest	5.8–6.5
Raymond Fault	Left-Lateral	4.4	North	6.0–7.0
Newport-Inglewood-Rose Canyon Fault Zone, north Los Angeles Basin section	Right-Lateral	5.3	Southwest	6.0–7.4
Verdugo Fault	Reverse	6.6	North	6.0–6.8
Eagle Rock Fault	Thrust	7.0	Northeast	Not provided
Overland Avenue Fault	Right-Lateral/ Strike-Slip	8.5	West	Not provided
Santa Monica Fault	Left-Reverse	9.0	West	6.0–7.0
Charnock Fault	Right-Lateral/ Strike-Slip	9.2	Southwest	Not provided
East Montebello Fault	Right-Lateral	9.6	East	Not provided
Whittier-Elsinore Fault	Right-Lateral/ Strike-Slip	11.7	East	6.5-7.5
Sierra Madre Fault	Reverse	12.0	Northeast	6.0–7.0
Palos Verdes Hills Fault	Right-Reverse	17.9	South	6.0–7.0
Cabrillo Fault	Right-Normal	20.2	South	6.0–6.8
Sources: Southern California Earthquake Data Center 2013; Metro 2010a.				

Elysian Park Thrust and Fault

In addition to known potentially active surficial (surface) faults in the region, there are several buried thrust faults, commonly referred to as blind thrusts. These underlie the Los Angeles Basin at depths of 3 kilometers (1.9 miles) or more. Thrust faults do not present a potential surface fault rupture hazard; however, they are considered to be active and potential sources of future earthquakes. The nearest thrust is the Elysian Park thrust. Previously defined as the Elysian Park Fold and Thrust Belt, the Elysian Park thrust was thought to extend northwesterly from the Santa Ana Mountains to the Santa Monica Mountains and westerly to parallel the Santa Monica-Hollywood and Malibu Coast faults. The Elysian Park thrust is now believed to be smaller, only underlying the central Los Angeles Basin (Metro 2010a).

The Elysian Park thrust, located approximately 2.5 miles north of the project alignments, is 6 to 9 miles below the ground surface. Like other blind thrust faults in the Los Angeles area, the Elysian Park thrust is not exposed at the surface and does not present a potential surface rupture hazard. However, the Elysian Park thrust should be considered an active feature and capable of generating future earthquakes, with associated significant ground shaking and possible deformation of near-surface materials (Metro 2010a).

In addition to the Elysian Park thrust, the Elysian Park fault, a blind thrust fault, is located northeast of the Elysian Park thrust at a shallower depth. The up-dip edge of the blind thrust fault tip is about 0.6 mile north of downtown Los Angeles. The estimated average recurrence interval for events on the Elysian Park fault ranges from 500 to 1,300 years, with an estimated moment magnitude of up to 6.7. There is little historical evidence of activity associated with the Elysian Park fault; however, given the history of seismic events on blind thrust faults in the greater Los Angeles area (i.e., the Whittier Narrows and Northridge earthquakes) and its proximity to the project area, the Elysian Park fault is considered to be active for the purpose of planning and designing the Project (Metro 2010a).

Coyote Pass Escarpment

The Coyote Pass escarpment is a gentle south-facing, east/west-trending topographic lineament that forms the southern flank of the Repetto Hills, from the Los Angeles River channel eastward to the Monterey Park area. The escarpment is an area of young, near-surface monoclinal folding,[2] which is believed to be a result of fault rupture on the Elysian Park thrust and/or the shallower Elysian Park fault. Although the trend of the escarpment beneath the floodplain west of the Los Angeles River has not been well defined, it has been inferred that the escarpment may align in the subsurface with the MacArthur Park escarpment, located west of Interstate 110. Recent investigations of the Coyote Pass escarpment indicate that the Elysian Park fault is active. Future fault rupture at depth along the Elysian Park fault and/or the Elysian Park thrust could result in near-surface folding of the alluvial sediments and underlying bedrock in the area of the escarpment. Thus, no ground rupture is anticipated along the Coyote Pass escarpment; however, the potential exists for ground deformation (active folding) of the bedrock and the overlying alluvial sediments along the mapped location of the escarpment (Metro 2010a).

[2] Monoclinal folding refers to an S-shaped bending of multiple strata of rock.

3.5.2.5 Liquefaction

The northern portion of the project alignments is in an area identified by the California Department of Conservation's Division of Mines and Geology (1999) as being susceptible to liquefaction. The liquefaction area overlaps the project limits from north of 4th Street to north of 1st Street between Hill Street and Broadway. With this exception, no other areas along the project alignment have been identified as being susceptible to seismic hazards related to liquefaction.

3.5.2.6 Other Seismic Hazards

Landslides

Los Angeles was one of the first municipalities in the nation to adopt hillside grading ordinances—largely because of landslides and slope failures. The rapid uplift of Los Angeles' mountainous areas from past and ongoing tectonic movements has created a geologic setting that is conducive to mass wasting. Also, the variable nature of steep slopes, exposed sediments and loose rocks, combined with poor slope conditions resulting from uncontrolled grading, have led to frequent landslides. The hillside areas of Los Angeles, especially in the central and eastern Santa Monica Mountains, have geologic and topographic conditions that are conducive to surficial and gross landslides.

Although parcels adjacent to the project alignments on the west side of Hill Street, north of 5th Street, are located in areas designated as Hillside Area per the City's Zone Information and Map Access System (ZIMAS), the Project would not be subject to the *Baseline Hillside Ordinance* because the Project would have no residential component. In addition, an area north and south of the 3rd Street tunnel, between Olive and Hill streets, has been identified as an area "where previous occurrences of landslide movement, or local topographic, geological, geotechnical, and subsurface water conditions, indicate a potential for permanent ground displacements" by the Division of Mines and Geology (1999). Previous occurrences of landslide movements have not been specified, and the identified area has been developed with a high-rise senior housing complex (Angelus Plaza) since the late 1970s without any landslide events.

The southern portion of the project alignments would be located on gradual grades within an existing transportation right-of-way. In the absence of substantial ground slopes, the potential for seismically induced landslides to affect the southern portion of the project area would be negligible.

Lateral Spreading

Lateral spreading occurs in conjunction with liquefaction and loss of soil strength in near-level topography. It differs from slope failure because complete ground failure involving large movement does not occur given the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks, with predominantly horizontal movement of the soil mass involved. Lateral spreading in conjunction with liquefaction was observed in the Northridge area during the Northridge earthquake and in the Sylmar area during the San Fernando earthquake. Such phenomena can occur throughout the Los Angeles area.

Earthquake-Induced Flooding

Earthquake-induced flooding is caused by the failure of dams or other water-retaining structures as a result of earthquakes. The potential for earthquake-induced flooding along the project alignments is low because the project area is not identified as an inundation area in Exhibit G of the *Safety*

Element of the *City of Los Angeles General Plan* (City of Los Angeles, Department of City Planning 1996). Although the southern portion of the project alignments is adjacent to an inundation area, the chances of inundation are remote given that no area within downtown Los Angeles is within a 100- or 500-year floodplain, as shown in Exhibit F of the General Plan's *Safety Element* (City of Los Angeles, Department of City Planning 1996). Echo Park Lake and the Elysian Park Reservoir are located 1.2 miles northwest and 1.9 miles north of the project alignments, respectively. However, both of these bodies of water pose minimal risk of inundating the project area because their flood courses would proceed in a southwesterly direction and away from the project area.

Seiches/Tsunamis

Seiches are standing waves that occur in enclosed bodies of water as a result of seismic activities, sometimes resulting in large quantities of water spilling out of the water's enclosure. As noted above, Echo Park Lake and the Elysian Park Reservoir are both located within 2 miles of the Project; however, the risk of seiches in the project area is minimal because the basins' flood courses would proceed in a southwesterly direction and away from the project area.

The project alignments are located in downtown Los Angeles, approximately 16 miles from the Pacific Ocean and at an elevation of about 285 feet above Mean Sea Level. The area has not been identified as a tsunami inundation area (California Geological Survey 2007). Tsunami inundation risks would be negligible.

3.5.3 Environmental Impact Analysis

3.5.3.1 Methodology

Potential significant impacts were identified from a review of project plans and geotechnical data from the *Safety Element* of the *City of Los Angeles General Plan* and other sources. The following discussion identifies impacts and the measures required to mitigate impacts found to be significant.

3.5.3.2 Thresholds of Significance

California Environmental Quality Act

For the purposes of the analysis in this EIR, the *L.A. CEQA Thresholds Guide* (2006) established the criteria for impact significance as follows.

- A project would normally have a significant geologic hazard impact if it would cause or accelerate geologic hazards that would result in substantial damage to structures or infrastructure or expose people to substantial risk of injury;
- A project would normally have significant sedimentation or erosion impacts if it would:
  - Constitute a geologic hazard to other properties by causing or accelerating instability from erosion; or
  - Accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition that would not be contained or controlled on-site; or
- A project would normally have a significant impact on landform alteration if one or more distinct and prominent geologic or topographic features would be destroyed, permanently covered, or materially and adversely modified. Such features may include, but are not

limited to, hilltops, ridges, hillslopes, canyons, ravines, rock outcrops, water bodies, streambeds, and wetlands.

3.5.3.3 Impacts

Alternative 1: No Project Alternative

Construction Impacts

No impact. No construction activities would occur under Alternative 1. Therefore, no construction impacts on geology, soils, and seismicity would occur.

Operational Impacts

No impact. The proposed Project would not be implemented under Alternative 1. Therefore, no operational impacts on geology, soils, and seismicity would occur.

Alternative 2: 7th Street Alternative with Grand Avenue Extension

Construction Impacts

Geologic Hazards

As discussed in the *Construction Methods Technical Memorandum* (see Appendix C), the estimated 24-month construction period would include, but not be limited to, the following activities that would temporarily affect subsurface conditions:

- Relocation, modification, or protection-in-place of utilities in conflict with streetcar facilities;
- Construction of the vehicle MSF;
- Construction of surface and subsurface drainage systems, including track drains, and the modifications to existing systems;
- Excavation of the roadway along the alignment to prepare it for track work installation;
- Installation of track work, complete with preparation of the track bed, track slab, rails, fasteners, and concrete; and
- Installation of TPSS units.

Seismicity

Less-than-significant impact. Construction activities associated with Alternative 2 would not occur within or adjacent to an Alquist-Priolo Special Study Zone Area or Fault Rupture Study Area. Although its precise location is unknown because of its position deep below the surface, the closest fault to the Alternative 2 alignment is the Elysian Park thrust, which is approximately 2.5 miles to the north. Numerous additional faults are located within 10 miles and in the region at large (see Table 3.5-1). All modifications of roadways would be consistent with the *Bureau of Engineering Street Design Manual*. Compliance with building seismic codes and occupational safety and health laws and regulations would also reduce risks to project structures, workers, and the public. Removing all risk associated with building in an earthquake-prone region is not possible, but with adherence to applicable codes and standards, risks would be substantially reduced. Impacts would be less than significant.

Given the distance of Alternative 2 from identified faults, there is a negligible risk of disturbing faults or changing regional or local seismic and geologic conditions in a way that would result in property damage or risk of injury or death. Construction of Alternative 2 would not exacerbate existing seismic hazards or create new hazards.

Liquefaction and Lateral Spreading

Less-than-significant impact. As discussed in Section 3.5.2, *Environmental Setting/Affected Environment*, the northern portion of the Alternative 2 alignment would be susceptible to liquefaction and lateral spreading, a potentially significant hazard. However, the risks to the Project that could be posed by these hazards would be mitigated with the implementation of regulatory compliance measure **RCM-GEO-C1**. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Although portions of the Alternative 2 alignment would be constructed in potential liquefaction zones, construction activities would not substantially increase the amount of water runoff into subsurface liquefiable soils or introduce new liquefiable soils. Therefore, it is not expected that construction activities would result in new significant liquefaction/lateral spreading hazards or substantially exacerbate existing hazards in the project area.

Landslides

Less-than-significant impact. Although the area adjacent to the 3rd Street tunnel between Olive and Hill Streets is identified as an earthquake-induced landslide zone by the Division of Mines and Geology, soil stabilization incorporated as part of hillside development on the adjacent slopes has reduced the risk of landslides in the area. Therefore, the impacts of landslide hazards on project construction activities would be less than significant.

Although components of Alternative 2 may involve construction activities on or adjacent to hillside areas, construction is not anticipated to increase the risk of landslides, as these areas are currently developed and have been stabilized with structures or plantings such that the risk of landslides is remote. Furthermore, construction activities would occur primarily within existing roadway rights-of-way, which have been previously graded and are underlain by engineered fill. Additionally, construction activities would generally occur close to the surface (a depth of up to approximately 10 feet below the ground surface is expected) and, therefore, would not substantially change the geological conditions in the area. Where depths of excavation would exceed 5 feet, pursuant to Section 306 of the City of Los Angeles Department of Public Works *Brown Book*, shoring and bracing would be required. As a consequence, construction activities would not substantially exacerbate existing hazards and impacts would be less than significant.

Expansive Soils

Less-than-significant impact. The project area is underlain by soil types that are not known to have expansive properties, and, therefore, the construction of Alternative 2 is not anticipated to result in significant impacts.

Construction activities would not introduce new expansive soils or otherwise adversely modify soil types underlying the project footprint that could increase the expansive soil impacts in the project area. Therefore, construction activities would not exacerbate this potential hazard.

Erosion

Less-than-significant impact. During the construction period, utility relocation activities and roadway modifications to allow for the installation of tracks would temporarily denude areas that are currently paved. Workers would remove the roadway surface and underlying soil (to a depth of approximately 10 feet for utility relocation). As a result, some erosion and a temporary reduction in soil stability may occur, particularly on the steeper grades along 1st Street; a potentially significant impact could result. However, any project involving grading of an area greater than one acre is required to apply for a National Pollutant Discharge Elimination System (NPDES) permit from the Los Angeles Regional Water Quality Control Board. This permit requires preparation and implementation of a *Stormwater Pollution Prevention Plan* (SWPPP) that incorporates best management practices (BMPs) for erosion control. Specifically, construction activity resulting in a land disturbance of one acre or more, or less than one acre but part of a larger common plan of development or sale must obtain the Construction Activities Stormwater General Permit. Construction activity includes clearing, grading, excavation, stockpiling, and reconstruction of existing facilities involving removal and replacement. Implementation of BMPs would ensure that sediment would be confined to the construction area and not transported off site. Additionally, per Section 306 of the City of Los Angeles Department of Public Works *Brown Book*, shoring and bracing would be required, as the depth of open trenches would be greater than 5 feet (2011). As a result, soil erosion impacts during construction would be less than significant.

Landform Alteration

No impact. Alternative 2 would be constructed within street rights-of-way or on graded off-street land parcels, and would not alter a distinct or prominent geologic or topographic feature and would therefore have no impact.

Operational Impacts

Geologic Hazards

Seismicity

Less-than-significant impact. Because the Alternative 2 alignment would be within a seismically active region, there is the potential for both seismic ground shaking and seismically related ground failure to occur within the project area. Removing all risk associated with operating in an earthquake-prone region is not possible, but with adherence to applicable building seismic codes and standards, risks can be reduced.

Because the Project would operate at-grade within the transportation right-of-way or on adjacent parcels in a developed urban area and would not involve any modifications to geologic/seismic features or landforms, operation of Alternative 2 would not exacerbate seismic hazards.

Liquefaction and Lateral Spreading

Less-than-significant impact. The northeastern portion of the Alternative 2 alignment is in an area that is susceptible to liquefaction and lateral spreading. These potentially significant hazards on project facilities, however, would be mitigated to a less-than-significant level with implementation of the regulatory compliance measure (see **RCM-GEO-C1**). As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operation of the Project would involve streetcars operating within existing street rights-of-way. For that reason and because operation of the Project would not generate additional water runoff that could percolate into subsurface soils, the proposed Project would not exacerbate liquefaction and lateral spreading hazards in the project area.

Landslides

Less-than-significant impact. Although the State Division of Mines and Geology identifies the area north and south of the 3rd Street tunnel as an area with previous landslide occurrences or the potential for future landslide movement, the area has been developed since the 1970s as a high-rise senior housing complex. There are no records of landslide occurrences since that time. Because the hillside was graded in compliance with local regulations during construction of Angelus Plaza, the risk of landslides resulting in loss, injury, or death would be minimal. In addition, the location of the slope setback from Hill Street would further reduce the risk to the Project. Based on the previous grading of hillside areas within the project vicinity, landslides would not pose a significant hazard on project facilities.

Operation of Alternative 2 would not result in additional excavation, increase surface runoff, or result in other activities that could destabilize existing hillsides. Therefore, operation of the Project would not create new, or exacerbate existing, landslide hazards.

Expansive Soils

Less-than-significant impact. The project area is underlain by soil types that are not known to have expansive properties. Therefore, operation of Alternative 2 would not increase hazards related to expansive soils. Drainage from the Project would be managed in existing and modified stormwater facilities so as not to increase the amount of water that could percolate into soils within the project area. Operational impacts related to expansive soils would be less than significant.

Erosion

No impact. Following the construction period, streetcar vehicles would operate on properly reconstructed street roadways. All areas that would be temporarily denuded during the construction period for track installation would be resurfaced or landscaped. Because existing paved areas would be repaved prior to operation, soil erosion would not occur, and no operational impacts related to soil loss would occur.

Landform Alteration

No impact. Operation of Alternative 2 would not involve any further construction or modifications that could have an effect on landforms. No impact would occur.

Alternative 3: 7th Street Alternative without Grand Avenue Extension

Construction Impacts

Geologic Hazards

Less-than-significant impact. Construction impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts related to liquefaction and lateral spreading would be considered less than significant before and after mitigation. Impacts related to expansive soils and landslides would be less than significant.

Erosion

Less-than-significant. Construction impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Alternative 3 would be constructed within street rights-of-way or on graded off-street land parcels, and would not alter a distinct or prominent geologic or topographic feature and would therefore have no impact.

Operational Impacts

Geologic Hazards

Less-than-significant impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts associated with liquefaction and lateral spreading would be less than significant before and after mitigation. Impacts related to landslides would be less than significant.

Erosion

No impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Operation of Alternative 3 would not involve any further construction or modifications that could have an effect on landforms. No impact would occur.

Alternative 4: 9th Street Alternative with Grand Avenue Extension

Construction Impacts

Geologic Hazards

Less-than-significant impact. Construction impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts related to liquefaction and lateral spreading would be considered less than significant before and after mitigation. Impacts related to landslides would be less than significant.

Erosion

Less-than-significant impact. Construction impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Alternative 4 would be constructed within street rights-of-way or on graded off-street land parcels, and would not alter a distinct or prominent geologic or topographic feature and would therefore have no impact.

Operational Impacts

Geologic Hazards

Less-than-significant impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts associated with liquefaction and lateral spreading would be less than significant before and after mitigation. Impacts related to expansive soils and landslides would be less than significant.

Erosion

No impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Operation of Alternative 4 would not involve any further construction or modifications that could have an effect on landforms. No impact would occur.

Alternative 5: 9th Street Alternative without Grand Avenue Extension

Construction Impacts

Geologic Hazards

Less-than-significant impact with mitigation. Construction impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts related to liquefaction and lateral spreading would be considered less than significant before and after mitigation. Impacts related to expansive soils and landslides would be less than significant.

Erosion

Less-than-significant impact. Construction impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Alternative 4 would be constructed within street rights-of-way or on graded off-street land parcels, and would not alter a distinct or prominent geologic or topographic feature and would therefore have no impact.

Operational Impacts

Geologic Hazards

Less-than-significant impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2. Specifically, impacts associated with liquefaction and lateral spreading would be less than significant before and after mitigation. Impacts related to expansive soils and landslides would be less than significant.

Erosion

No impact. Operational impacts associated with this alternative would be similar to those described for Alternative 2**.**

Landform Alteration

No impact. Operation of Alternative 5 would not involve any further construction or modifications that could have an effect on landforms. No impact would occur.

Traction Power Substations and Laydown and Storage Areas

Construction Impacts

Less-than-significant impact. Laydown and storage areas would all be located at grade within existing roadways or on off-street parcels. The traction power substation (TPSS) units would be relatively small in size (approximately 17 feet long by 11 feet wide by 11 feet high) and minimal excavation would be required for the foundation of the TPSS structures. Construction of the TPSS units would follow all applicable City of Los Angeles regulations and guidelines pertaining to construction, which would minimize the potential for adverse impacts to occur as a result of construction activities. Therefore, the construction impacts associated with the laydown and storage areas and the TPSS units would be similar to or less than those described for Alternative 2. Specifically, impacts related to liquefaction and lateral spreading would be considered less than significant before and after mitigation. Impacts related to expansive soils and landslides would be less than significant.

Operational Impacts

Less-than-significant impact. The TPSS units would be designed and constructed in accordance with building seismic codes and would be capable of withstanding seismic events. Impacts would be similar or less than those described above for Alternative 2. Specifically, impacts associated with liquefaction and lateral spreading would be less than significant with mitigation. Impacts related to expansive soils and landslides would be less than significant. No operational erosion impacts would occur.

Maintenance and Storage Facility Sites

Construction Impacts

Broadway and 2nd Street

Less-than-significant impact. As discussed above, the northern portion of the project alignments would be susceptible to liquefaction and lateral spreading. The Broadway and 2nd Street maintenance and storage facility (MSF) site would comply with UBC Chapter 18, Division 1, Section 1804.5, Liquefaction Potential and Soil Strength Loss*,* which requires the preparation of a geotechnical report. The geotechnical report would assess the potential consequences of any liquefaction and soil strength loss and estimate the level of settlement, lateral movement, or reduction in soil-bearing capacity. It would also identify mitigation measures, which could include design requirements, including, but not limited to, requirements related to ground stabilization, the selection of appropriate foundation types and depths, the selection of appropriate structural systems to accommodate anticipated displacements, in situ ground modification, removal of liquefiable layers and replacement with compacted fill, or any combination of these measures. In addition, the MSF would be built in conformity with the seismic provisions and all applicable provisions of the CBSC. Therefore, impacts would be less than significant with the implementation of **RCM-GEO-C1**. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The Broadway and 2nd Street MSF would comply with existing requirements and would not exacerbate risks related to seismic hazards and erosion, as it would be located on relatively flat site and would not involve excavation to a depth that would affect the underlying geology of the site. Any landscaping that would be installed would be small in size and is not expected to result in substantial impacts related to erosion or subsurface conditions. In addition, no alteration of landforms would occur.

Hill Street and 5th Street

Less-than-significant impact. Construction impacts would be similar to impacts described for the Broadway and 2nd Street MSF, with the exception that the Hill Street and 5th Street MSF site would not be located close to an area identified as being susceptible to liquefaction and lateral spreading. The Hill Street and 5th Street MSF would comply with existing requirements and would not exacerbate risks related to seismic hazards and erosion due to its location on relatively flat site and that it would not involve excavation to a depth that would affect the underlying geology of the site. In addition, no alteration of landforms would occur. With the preparation of a geotechnical report and the implementation of its recommendations for MSF construction, impacts would be less than significant with the implementation of **RCM-GEO-C1**. Recommendations would include considerations related to the proximity of this MSF site to the Title Guarantee Building and the Subway Terminal Building. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The Hill Street and 5th Street MSF would comply with existing requirements and would not exacerbate risks related to seismic hazards and erosion, as it would be located on relatively flat site and would not involve excavation to a depth that would affect the underlying geology of the site. Any landscaping that would be installed would be small in size and is not expected to result in substantial impacts related to erosion or subsurface conditions. In addition, no alteration of landforms would occur.

11th Street and Olive Street (East)

Less-than-significant impact. With the exception that the 11th Street and Olive Street (East) MSF site would not be located close to an area identified as being susceptible to liquefaction and lateral spreading, construction impacts would be similar to impacts described for the Broadway and 2nd Street MSF site. With the preparation of a geotechnical report and the implementation of its recommendations for MSF construction, impacts would be less than significant with the implementation of **RCM-GEO-C1**. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The 11th Street and Olive Street (East) MSF would comply with existing requirements and would not exacerbate risks related to seismic hazards and erosion, as it would be located on relatively flat site and would not involve excavation to a depth that would affect the underlying geology of the site. Any landscaping that would be installed would be small in size and is not expected to result in substantial impacts related to erosion or subsurface conditions. In addition, no alteration of landforms would occur.

11th Street and Olive Street (West)

Less-than-significant impact. With the exception that the 11th Street and Olive Street (West) MSF site would not be located close to an area identified as being susceptible to liquefaction and lateral spreading, construction impacts would be similar to impacts described for the Broadway and 2nd Street MSF site. With the preparation of a geotechnical report and the implementation of its recommendations for MSF construction, impacts would be less than significant with the implementation of **RCM-GEO-C1**. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

The 11th Street and Olive Street (West) MSF would comply with existing requirements and would not exacerbate risks related to seismic hazards and erosion, as it would be located on relatively flat site and would not involve excavation to a depth that would affect the underlying geology of the site. Any landscaping that would be installed would be small in size and is not expected to result in substantial impacts related to erosion or subsurface conditions. In addition, no alteration of landforms would occur.

Operational Impacts

Broadway and 2nd Street

Less-than-significant impact. With respect to the potential for geologic hazards to result in effects on the Project, despite the construction of the MSF within a seismically active region, the MSF would be stabilized on its own foundations and would be capable of withstanding seismic events, per the seismic provisions of the CBSC. A regulatory compliance measure (**RCM-GEO-C1**) would be implemented to reduce the potentially significant risks posed by liquefaction and lateral spreading hazards. The potential risks posed by expansive soil and landslide hazards in this area are considered low. Consequently, the effects of the geologic environment on project operation would be less than significant with mitigation. As a result, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

With respect to the Project's potential to contribute to geologic hazards, operation of the Broadway and 2nd Street MSF would follow all applicable CBSC regulations as well as guidelines pertaining to operation. Furthermore, the MSF would be stabilized on its own foundations so that they would not result in an elevated risk of geologic hazards. Operation of the MSF would not result in erosion impacts or landform alteration. Therefore, no impacts would result.

Hill Street and 5th Street

Less-than-significant impact. With the exception that the Hill Street and 5th Street MSF would not be located within an area identified as being susceptible to liquefaction, operational impacts would be similar to impacts described for the Broadway and 2nd Street MSF site.

11th Street and Olive Street (East)

Less-than-significant impact. With the exception that the 11th Street and Olive Street (East) MSF would not be located within an area identified as being susceptible to liquefaction, operational impacts would be similar to impacts described for the Broadway and 2nd Street MSF site.

11th Street and Olive Street (West)

Less-than-significant impact. With the exception that the 11th Street and Olive Street (West) MSF would not be located within an area identified as being susceptible to liquefaction, operational impacts would be similar to impacts described for the Broadway and 2nd Street MSF site.

3.5.4 Mitigation Measures

Implementation of the following regulatory compliance measure would ensure soil stability and liquefaction impacts are minimized and would be less than significant:

RCM-GEO-C1: In order to ensure that utility relocation, track-laying activities, and MSF construction do not result in a substantially increased risk of soil instability, temporary shoring shall be used for lateral support, and properly compacted fill soils or cement slurry shall be used for excavation backfill. A geotechnical report shall be prepared during the design phase, subject to approval by the City, that will address the following topics, and will also recommend specific design specifications, which may include, but are not limited to:

- *Liquefaction and Lateral Spreading:* Methods for construction in areas with a potential liquefaction hazard may include in situ ground modification, removal of liquefiable layers and replacement with compacted fill, or support of project improvements on piles at depths designed specifically for liquefaction. Pile foundations can be designed for a liquefaction hazard by supporting the piles on dense soil or bedrock located below the liquefiable zone or employing other appropriate methods, as evaluated during the site-specific evaluation. Additional recommendations for mitigation pertaining to liquefaction may include densification by installation of stone columns, vibration, deep dynamic compaction, and/or compaction grouting.
- *Structural Support:* Recommendations will be made related to the methods of construction of the MSF in proximity to existing buildings, such as buffer distances to maintain from existing buildings or structural supports for these buildings during the construction period.

The construction contractor shall implement all recommendations from this report into the work plan. The City of Los Angeles Department of Public Works, Bureau of Engineering, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the Department of Public Works Contracts Administration Bureau Construction Inspector.

No significant unavoidable impacts would occur as a result of implementation of the Project.

3.5.5 Cumulative Impacts

3.5.5.1 Construction Impacts

The only major projects expected to be implemented in or below the transportation right-of-way within the physical limits and general timeframe of the Project are the Regional Connector, the *Broadway Streetscape Master Plan*, and the Figueroa Corridor Streetscape Project. In addition, one or more of the following buildings, which are adjacent to the project alignments, would be under construction while the Project is under construction:

- Federal Courthouse at 1st Street and Broadway.

- Park Fifth Project at 450 S. Olive Street.
- Mixed-use Project at 928 S. Broadway.
- Mixed-use Project at 1115 S. Hill Street.
- Glass Tower Project at 1050 S. Grand Avenue.
- Mixed-use project at 1150 S. Grand Avenue.
- Department of Water and Power Elysian Park-Downtown Water Recycling Projects.
- Wilshire Grand Redevelopment Project at Figueroa Avenue and 7th Street (Alternatives 2 and 3 only).
- Embassy Tower at 848 S. Grand (Alternatives 4 and 5 only).
- Onni Group Tower at 825 S. Hill Street (Alternatives 4 and 5 only).
- Alexan South Broadway Residential Project at 850 Hill Street (Alternatives 4 and 5 only).

Construction of any of the above transportation or building projects, or others that have not yet been proposed, would be required to adhere to all applicable design and construction standards and requirements. Additionally, because the proposed Project would not exacerbate existing geologic or seismic hazards during construction, it would not contribute to any cumulative geologic or seismic hazards. During construction of the proposed and related projects, the potential does exist for grading and excavation to expose soils in the area to wind or water erosion and result in a cumulative loss of soil. However, as noted in the impacts discussion above, any project involving grading of an area greater than one acre is required to apply for a NPDES permit, which necessitates implementation of BMPs for erosion control. Additionally, the *City of Los Angeles Stormwater Low Impact Development (LID) Ordinance*, which applies to all development and redevelopment projects that create, add, or replace 500 square feet or more of impervious surface, requires the use of LID standards and practices for the purposes of reducing offsite runoff and erosion. Compliance with NPDES permit requirements and the City's *Stormwater LID Ordinance* would minimize potential soil erosion impacts, and, therefore, it is not expected that the proposed and related projects would result in significant cumulative soil erosion impacts.

3.5.5.2 Operational Impacts

With respect to the cumulative effects of the geologic and seismic hazards, implementation of the proposed Project in combination with the projects above would result in additional facilities and buildings in a seismically active area such that additional people and property would be exposed to hazards posed by seismic events. However, the risks to life and property posed by operation of the Project would be minimized through compliance with the *City of Los Angeles Building Code*, applicable provisions City of Los Angeles Department of Public Works *Brown Book*, and the implementation of project-specific measures outlined in **RCM-GEO-C1**. Thus, the Project would not make a cumulatively considerable contribution to a significant cumulative impact related to the geologic hazards posed on the project area.

Following the completion of construction and implementation of mitigation measures, project operation would have no effect on the geologic properties of the area, as discussed above. Consequently, the Project would make no contribution to cumulative impacts on geologic hazards, erosion, and landforms.

This page was intentionally left blank.

3.6 Greenhouse Gas Emissions

This section addresses the potential for the Project to result in impacts on climate change. The information presented in this section is based on the Project's *Air Quality and Climate Change Assessment Report*, which is included as Appendix E to this Draft EIR.

3.6.1 Regulatory Setting

The U.S. Environmental Protection Agency (EPA) has the primary responsibility at the federal level for regulation of greenhouse gases (GHGs) that contribute to climate change. In California, primary responsibility rests with the California Air Resources Board (ARB) at the state level and with air quality management districts at regional and local levels.

3.6.1.1 Federal

Federal Greenhouse Gas and Climate Change Policy

Although there is currently no federal overarching law specifically related to climate change or the reduction of GHGs, the EPA is developing regulations that may be adopted pursuant to the EPA's authority under the *Clean Air Act* (CAA). In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld the EPA's authority to regulate GHG emissions under the CAA. Foremost among recent developments have been the settlement agreements between the EPA, several states, and Non-Governmental Organizations (NGOs) to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in *Massachusetts v. EPA*; and the EPA's "Endangerment Finding," "Cause or Contribute Finding," Mandatory Reporting Rule, and EPA's *Clean Power Plan* Final Rule. Under the *Clean Power Plan*, the EPA in 2015 issued regulations to control carbon dioxide (CO_2) emissions from new and existing coal-fired power plants. On February 9, 2016, the Supreme Court issued a stay of these regulations pending litigation.

Massachusetts, et al. vs. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations sued to force the EPA to regulate GHGs as a pollutant emitted by motor vehicles pursuant to the CAA in *Massachusetts, et al. v. Environmental Protection Agency* 549 US 497 (2007). The court ruled that the plaintiffs had standing to sue, GHGs fit within the CAA's definition of a pollutant, and the EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.

U.S. Environmental Protection Agency Mandatory Reporting Rule for GHGs (2009)

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule was a response to the fiscal year (FY) 2008 *Consolidated Appropriations Act* (H.R. 2764; *Public Law* 110-161), which required EPA to develop "mandatory reporting of greenhouse gasses above appropriate thresholds in all sectors of the economy…" The Reporting Rule applies to most entities that emit 25,000 metric tons of CO_2 equivalent (CO_2e) or more per year. Starting in 2010, facility owners from 41 industrial categories were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. An additional 12 categories began reporting for calendar year 2011 emissions. The Reporting Rule mandates recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

U.S. Environmental Protection Agency Endangerment Finding and Cause or Contribute Finding (2009)

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the CAA.

1. Endangerment Finding: that that the current and projected concentrations of the greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations.
2. Cause or Contribute Finding: that the combined emissions of greenhouse gases from new motor vehicles and new motor vehicle engines contribute to greenhouse gas pollution, which threatens public health and welfare.

These findings did not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to EPA's GHG emission standards for motor vehicles, which EPA subsequently proposed in joint rulemakings with the National Highway Traffic Safety Administration (NHTSA) to revise the Corporate Average Fuel Economy (CAFE) standards for light-duty vehicles and establish medium- and heavy-duty vehicle fuel economy standards.

Update to Corporate Average Fuel Economy Standards (2009)

The revised CAFE standards of 2009 for autos and light-duty trucks incorporated stricter fuel economy standards promulgated by the state of California into one uniform standard covering model years 2011–2016. Automakers were required by 2016 to cut GHG emissions from new vehicles by roughly 25 percent compared with the previously existing standard.

EPA, NHTSA, and ARB worked together on a joint EPA-NHTSA rulemaking to establish fuel economy and GHG emissions standards for 2017 to 2025 model year passenger vehicles, which required an industry-wide average of 54.5 miles per gallon. On August 28, 2012, NHTSA issued the Final Rule for CAFE Standards for Model Years 2017 and Beyond (EPA and NHTSA 2012).

Update to Medium- and Heavy-Duty Vehicle Fuel Economy Standards (2015)

In a process similar to the revision of the CAFE standards, on September 15, 2011, EPA and NHTSA issued the first-ever national fuel economy standards for medium- and heavy-duty vehicle (MDHD) standards. These Phase 1 standards applied to model year 2014–2018 MDHD vehicles. NHTSA currently is proposing fuel efficiency standards for heavy duty (HD) engines, vehicles, and trailers as part of a joint rulemaking with EPA to establish the Phase 2 HD National Program for model years 2018–2027. The proposed rule was released by both EPA and NHTSA on June 19, 2015. The final rule and EIS for the Phase 2 MDHD standards are expected to be published in the summer of 2016 (EPA and NHTSA 2015).

Council on Environmental Quality Draft NEPA Guidance (2010, 2014)

On February 18, 2010, the Council on Environmental Quality (CEQ) issued draft *National Environmental Policy Act* (NEPA) guidance on the consideration of the effects of climate change and GHG emissions. This guidance advises federal agencies that they should consider opportunities to reduce GHG emissions caused by federal actions, adapt their actions to climate change effects throughout the NEPA process, and address these issues in their agency NEPA procedures. Where applicable, the scope of the NEPA analysis should cover the GHG emissions effects of a proposed action and alternative actions, as well as the relationship of climate change effects on a proposed action or alternatives. The guidance identified a reference point of 25,000 metric tons per year (MTY) for direct CO_2e GHG emissions as an indicator that further NEPA review may be warranted. This reference point, however, is not intended to be used as a threshold for determining a significant impact or effect on the environment due to GHG emissions. The guidance also does not propose a reference point for indirect GHG emissions. (CEQ 2010).

In December 2014, the CEQ issued revised draft guidance to provide federal agencies with direction on when and how to consider the potential impacts of GHG emissions and climate change in accordance with NEPA. The draft guidance states that agencies should consider the potential impacts of a proposed action on climate change by evaluating potential GHG emissions and considering the implications of climate change for the environmental effects of the proposed action. The 2014 guidance retained the reference point of 25,000 MTY CO_2e (CEQ 2014).

3.6.1.2 State

California Greenhouse Gas and Climate Change Policy

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The Governor of California has also issued several executive orders (EOs) related to the state's evolving climate change policy. Of particular importance to local governments is the direction provided by the Assembly Bill (AB) 32 *Scoping Plan*, which recommends local governments reduce their GHG emissions by a level consistent with state goals.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key statewide GHG regulations, policies, legal cases, and legislation at the state level that are relevant to the Project are provided below.

Assembly Bill 32, the *Global Warming Solutions Act of 2006/2011 Update*

AB 32 codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since being adopted, ARB, the California Energy Commission, the California Public Utilities Commission (CPUC), and the Building Standards Commission have been developing regulations that would help meet the goals of AB 32 and EO S-03-05. The *Scoping Plan* for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires ARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the *Scoping Plan* articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state.

In March 2011, a San Francisco Superior Court enjoined the implementation of ARB's *Scoping Plan*, finding the alternatives analysis and public review process violated both CEQA and ARB's certified regulatory program (*Association of Irritated Residents, et al. v. California Air Resources Board*, Case No. CPF-09-509562, March 18, 2011). In response to this litigation, ARB adopted the new CEQA document (*Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*) on August 24, 2011. ARB staff re-evaluated the baseline in light of the economic downturn and updated the projected 2020 emissions to 545 million metric tons (MMT) of CO_2e. Two reduction measures (Pavley I and the Renewables Portfolio Standard [12–20 percent]) not previously included in the 2008 *Scoping Plan* baseline were incorporated into the updated baseline, further reducing the 2020 statewide emissions projection to 507 $MMTCO_2e$. The updated forecast of 507 $MMTCO_2e$ is referred to as the AB 32 2020 baseline. Reduction of an estimated 80 $MMTCO_2e$ are necessary to reduce statewide emissions to the AB 32 Target of 427 $MMTCO_2e$ by 2020 (ARB 2011).

California Executive Order S-3-05

Executive Order S-3-05 is designed to reduce California's GHG emissions to 2000 levels by 2010, 1990 levels by the 2020, and 80 percent below the 1990 levels by the year 2050.[1]

Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local government or private actions. The Secretary of the California Environmental Protection Agency (Cal/EPA) is required to report to the Governor and state legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this executive order.

Assembly Bill 1493—Pavley Rules (2002, amendments 2009)/Advanced Clean Cars (2011)

Known as "Pavley I," AB 1493 standards were the nation's first GHG standards for automobiles. AB 1493 required ARB to adopt vehicle standards that will lower GHG emissions from new light duty vehicles to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as "Pavley II," now referred to as the "Advanced Clean Cars" measure) has been proposed for vehicle model years 2017–2020. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14 percent. In June 2009, the EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the then-current model year.

Also, as noted above, EPA and ARB worked together on a joint rulemaking to establish national GHG emissions standards for 2017–2025 model year passenger vehicles.

Executive Order S-01-07, Low Carbon Fuel Standard (2007)

Executive Order S-01-07 mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and (2) that a low carbon fuel standard (LCFS) for transportation fuels be established in California. The executive order initiated a research and regulatory process at ARB. Based on an implementation plan developed by CEC, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012). On April 23, 2012, the U.S. Court of Appeals for the Ninth Circuit granted ARB's motion to stay the injunction that had prevented ARB from enforcing California's LCFS. Thus, ARB was permitted to continue its implementation and enforcement of the

[1] Statewide GHG emissions were estimated to be 449.59 $MMTCO_2e$ for year 2010 compared to 462.9 $MMTCO_2e$ for year 2000 (ARB 2013).

LCFS pending the outcome of the appeal. On November 16, 2015, the Office of Administrative Law in the State of California approved the re-adoption of the Low Carbon Fuel Regulation.

Executive Order B-30-15, Greenhouse Gas Reduction Target (2015)

Executive Order B-30-15 was announced by Governor Brown on April 29, 2015, and establishes a greenhouse gas reduction target of 40 percent below 1990 levels by 2030 in the State of California. California is currently on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, which was previously established in the *California Global Warming Solutions Act of 2006* (AB 32, discussed above). The state's new emission reduction target will make it possible to reach the state's overall goal of reducing emissions 80 percent under 1990 levels by 2050 (Office of Governor 2015).

Senate Bill 375 (Steinberg), Statutes of 2008

California State Senate Bill (SB) 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs), to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans that will achieve GHG emission reduction targets set by ARB, which finalized the regional targets in February 2011. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. However, those provisions will not become effective until an SCS is adopted. The final targets require the Southern California Association of Governments (SCAG) to identify strategies that will reduce per capita GHG emissions from passenger vehicles by approximately 8 percent by 2020 and 13 percent by 2035 over base year 2005. SCAG adopted the *Final 2012 Regional Transportation Plan* (RTP), which incorporates the SCS, on April 4, 2012 (SCAG 2012a). The Draft 2016–2040 RTP/SCS was released in December 2015. The revised RTP/SCS includes $556.5 billion in transportation investments and the strategies outlined in the 2016 RTP/SCS will help reduce GHG emissions to meet California's targets, as mentioned above (SCAG 2015).

Other Vehicle Efficiency Measures from ARB

ARB has adopted or is pursuing additional measures to promote vehicle efficiency in order to reduce GHG emissions. In 2008, ARB adopted a measure concerning heavy-duty vehicle aerodynamics. In 2009, ARB adopted regulations for tire pressure. ARB also evaluated hybridization of medium-heavy vehicles and cool car design (i.e., a clear, reflective glaze on car windows designed to cut emissions by virtue of blocking excessive sunlight and heat). In November 2015, ARB released the Draft Technology Assessment for Heavy-Duty Hybrid Vehicles, which analyzed the current and future development of heavy-duty hybrid vehicle technologies. The use of these technologies would help to reduce fuel consumption and GHG emissions within the vehicle fleet; however, these technologies are currently cost prohibitive and would increase vehicle weights (ARB 2015).

ARB GHG Mandatory Reporting Rule Title 17 (2009)

In December of 2007, ARB approved a rule requiring mandatory reporting of GHG emissions from certain sources, pursuant to AB 32. Facilities subject to the mandatory reporting rule must have reported their emissions from the calendar year 2009 and have had those emissions verified by a third party in 2010. In general the rule applies to facilities emitting more than 25,000 metric tons (MT) CO_2e in any given calendar year or electricity generating facilities with a nameplate generating capacity greater than 1 megawatt (MW) or emitting more than 2,500

$MTCO_2e$ per year. Additional requirements also apply to cement plants and entities that buy and sell electricity in the state.

Western Climate Initiative/California Cap and Trade (2010/2011)

The Western Climate Initiative (WCI) is a collaboration of seven western states (Washington, Oregon, California, Arizona, New Mexico, Utah, and Montana) and four Canadian provinces (British Columbia, Manitoba, Ontario, and Quebec) that are working together to identify, evaluate, and implement policies to tackle climate change at a regional level. On July 27, 2010, the Partner jurisdictions of the WCI released a comprehensive strategy designed to reduce climate-warming GHG emissions, stimulate development of clean-energy technologies, create green jobs, increase energy security and independence, and protect public health. The objective of the WCI Partner jurisdictions' plan is to reduce regional GHG emissions to 15 percent below 2005 levels by 2020 (similar to AB 32). The regional goal will be reached by creating a market-based system that caps GHG emissions and uses tradable permits to incentivize development of renewable and lower-polluting energy sources; encouraging GHG emissions reductions in industries not covered by the emissions cap, thus reducing energy costs region wide; and advancing policies that expand energy efficiency programs, reduce vehicle emissions, encourage energy innovation in high-emitting industries, and help individuals transition to new jobs in the clean-energy economy. The central component of the WCI Partner jurisdictions' comprehensive strategy is a flexible, market-based, regional cap-and-trade program that encourages the most cost-effective, reliable alternatives to reduce GHG emissions (WCI 2010).[2] ARB is working closely with the other members of the WCI to design a regional cap-and-trade program that can deliver GHG emission reductions within the region at costs lower than could be realized through a California-only program.

To that end, pursuant to the directives of AB 32, ARB approved measures on December 16, 2010, to enact a GHG cap-and-trade program for the state of California. The California cap-and-trade program created a CO_2 market system with a GHG emissions cap that will be decreased over time. Building on the data required by the 2007 California Mandatory GHG Reporting rule, only stationary sources that emit more than 25,000 $MTCO_2e$ per year are affected by the cap-and-trade program. These sources include mostly large operations, such as power plants, refineries, cement plants, hydrogen production facilities, and other large, stationary sources. Official rulemaking associated with achieving this emissions cap was adopted by January 1, 2011, and adopted the final cap-and-trade regulation and adaptive management plan on October 20, 2011. The program commenced in January 2012, and compliance began in January 2013.

State CEQA Guidelines

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of a project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

[2] In February 2010, per EO 2010-06, Arizona withdrew from the cap-and-trade proposal, citing potential economic impacts. However, Arizona remains a member of the WCI.

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others:

- Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision.
- Implementation of project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions.
- Offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions.
- Measures that sequester carbon or carbon-equivalent emissions.

3.6.1.3 Local

South Coast Air Quality Management District

SCAQMD develops the rules and regulations to regulate sources of air pollution and GHGs in the Basin. With respect to GHGs, ARB's *Climate Change Scoping Plan* states that local governments and air quality management districts such as SCAQMD are "essential partners" in the effort to reduce GHG emissions. The *Climate Change Scoping Plan* also acknowledges that local governments have "broad influence and, in some cases, exclusive jurisdiction" over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce GHG emissions rely on local government actions. The *Climate Change Scoping Plan* encourages local governments to reduce GHG emissions by approximately 30 percent from business-as-usual emissions levels projected for 2020.

SCAQMD has published the *CEQA Air Quality Handbook* (SCAQMD 1993) to help local governments analyze and mitigate project-specific air quality impacts. The handbook provides standards, methodologies, and procedures for conducting air quality analyses and was used extensively in the preparation of this report.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD staff established an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. To date, SCAQMD has formally adopted 10,000 $MTCO_2e$ as a threshold only for industrial facilities (i.e., industrial facilities that require issuance of a SCAQMD Title V or RECLAIM permit). Because the Project would not require such a permit, the 10,000 $MTCO_2e$ threshold is not applicable. SCAQMD also has drafted a 3,000 $MTCO_2e$ screening significance threshold level for commercial/residential projects. This draft threshold also is not applicable because it is only a draft proposed screening threshold, and the Project is a transportation project that does not fit into the industrial, commercial, or residential project categories. SCAQMD has not proposed or adopted a threshold level for transportation projects.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, economy, community development, and environment. SCAG is the federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality and GHG planning, SCAG has prepared the *Regional Comprehensive Plan* (RCP) for the SCAG region, which includes Growth Management and Regional Mobility chapters. SCAG also prepares the RTP for the SCAG region every 3 years, which, along with the RCP, forms the basis for the land use and transportation components of the SCAQMD *Air Quality Management Plan* (AQMP). These chapters are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

City of Los Angeles

The City of Los Angeles has published a climate action plan titled *GreenLA* (City of Los Angeles 2007). In order to provide detailed information on action items discussed in *GreenLA*, the City in 2008 published an implementation document titled *ClimateLA,* which presents the existing GHG inventory for the City, includes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate progress, and includes mechanisms that allow the plan to be revised in order to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels, which were estimated to be approximately 54.1 million metric tons.

Therefore, the City would need to lower annual GHG emissions to approximately 35.1 MMT per year by 2030. To achieve these reductions, the City has developed strategies that focus on energy, water use, transportation, land use, waste, open space and greening, and economic factors. To reduce emissions from energy usage, *ClimateLA* proposes the following goals: increase the amount of renewable energy provided by the Los Angeles Department of Water and Power (LADWP), present a comprehensive set of green building policies to guide and support private sector development, reduce energy consumed by City facilities and utilize solar heating where applicable, and help citizens to use less energy. With regard to waste, *ClimateLA* set the goal of reducing or recycling 70 percent of refuse. With regard to open space and greening, *ClimateLA* includes the following goals: create 35 new parks, revitalize the Los Angeles River to create open space opportunities, plant one million trees throughout the City, identify opportunities to "daylight" streams, identify promising locations for stormwater infiltration to recharge groundwater aquifers, and collaborate with schools to create more parks in neighborhoods. The 2007 *GreenLA*/2008 *ClimateLA* documents remain current as of February 2016.

3.6.2 Environmental Setting/Affected Environment

A description of each GHG is provided below, followed by a discussion of the environmental setting/affected environment.

Description of Greenhouse Gases

The principal anthropogenic GHGs contributing to global warming are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, including sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), as codified in state law and the State CEQA Guidelines (*Health and Safety Code* 38505(g), 14 *California Code of Regulations* [CCR] 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh the contribution from anthropogenic (human-made) sources.[3]

Carbon Dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle, or dissolved into the oceans, or incorporated into the shells of animals.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the organismic digestion process, from livestock and from other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases.

- **Chlorofluorocarbons (CFCs)** are greenhouse gases covered under the *1987 Montreal Protocol* and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are greenhouse gases covered under the *1997 Kyoto Protocol*.
- **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong greenhouse gases.
- **Sulfur Hexafluoride (SF_6)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong greenhouse gas used primarily in electrical transmission and distribution systems as a dielectric agent.[4]
- **Hydrochlorofluorocarbons (HCFCs)** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also greenhouse gases.
- **Hydrofluorocarbons (HFCs)** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes

[3] Although water vapor plays a substantive role in the natural greenhouse effect, the change in GHGs in the atmosphere due to anthropogenic emissions of GHGs other than water is enough to upset the radiative balance of the atmosphere and result in global warming.

[4] A dielectric agent is an electrical insulator that is highly resistant to the flow of an electric current.

and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong greenhouse gases.

State Greenhouse Gas Emissions

More than 97 percent of U.S. GHG emissions are the result of burning fossil fuels. Of these GHGs, 83 percent are in the form of CO_2, 10 percent are CH_4, and 4.5 percent are N_2O. Fossil fuels are burned to power vehicles, create electricity, and generate heat. Vehicle emissions are the largest source of CO_2 emissions in California, representing 38 percent of statewide emissions in 2011. Electrical generation is the second-largest source of GHG emissions in California, at 19 percent; commercial and residential land uses are the third-largest, at 10 percent (ARB 2013). On a national level, electrical generation is the largest GHG emissions sector, and transportation is the second largest. Other sources of GHG emissions generated within the U.S. and California include agriculture, land clearing, the landfilling of waste, refrigerants, and certain industrial processes.

Greenhouse Gas Inventories

A GHG inventory is a quantification of all GHG emissions and carbon sinks within a selected physical and/or economic boundary.[5] GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

U.S. Greenhouse Gas Emissions Inventory

EPA estimates that total U.S. GHG emissions for 2014 amounted to 6,870 $MMTCO_2e$, which is 7.4 percent greater than 1990 levels, and a 1.0 increase over 2013 levels (EPA 2016). U.S. GHG emissions were responsible for approximately 16 percent of global GHG emissions in 2011 (Boden et al. 2015). The largest contributors to U.S. GHG emissions in 2014 were electricity generation (30 percent), transportation (26 percent), and the industrial sector (21 percent). Emissions in the electricity generation, transportation, residential, commercial, and industrial sectors consisted primarily of CO_2. GHG emissions related to agriculture consisted predominantly of CH_4 and N_2O. Since 1990, industrial emissions in the U.S. have generally declined, while emissions in other sectors, such as transportation, have generally grown (EPA 2016).

California Greenhouse Gas Emissions Inventory

In 2013, total California GHG emissions were 459.3 $MMTCO_2e$. Annual GHG emissions for 2013 were 6.2 percent above 1990 levels, and emissions have decreased by 0.3 percent from 2012 to 2013 (460.8 to 459.3 $MMTCO_2e$). The transportation sector accounted for approximately 37 percent of the total emissions, the industrial sector accounted for approximately 23 percent, and electricity generation accounted for approximately 11 percent, with a roughly 55 percent/45 percent contributions from in-state and imported electricity.

[5] A carbon sink is a natural or artificial reservoir that accumulates and stores some carbon-containing chemical compounds, such as carbonates, for an indefinite period. The process by which carbon sinks remove carbon dioxide (CO_2) from the atmosphere is known as *carbon sequestration*.

City of Los Angeles Greenhouse Gas Emissions Inventory

In 2004, total citywide GHG emissions were greater than 50 $MMTCO_2e$, roughly the same amount as the country of Sweden. The transportation sector accounted for approximately 47 percent of the total emissions, electricity generation accounted for approximately 32 percent, natural gas use generated 9 percent of emissions, and the balance of 12 percent was from burning other industrial fuels. The City's *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming* includes more than 50 actions to reduce citywide GHG emissions, as well as measures to adapt to the effects of climate change. The City's goal is to reduce GHG emissions to 35 percent below 1990 levels by 2030 (City of Los Angeles 2007).

3.6.3 Environmental Impact Analysis

3.6.3.1 Methodology

Construction Impacts

Construction of the Project would result in the short-term generation of GHG emissions from combustion exhaust. Mass daily GHG emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, version 7.4.1 and the California Emissions Estimator Model (CalEEMod), version 2013.2.1. Construction equipment and scheduling assumptions are detailed in the Project's Air Quality and Climate Change Assessment Report, which is included as Appendix E to this Draft EIR.

Operational Impacts

The CalEEMod emissions estimation model was also used to quantify GHG emissions related to ongoing operation of the Project's Vehicle Maintenance and Storage Facility, based on a facility size estimate of 18,000 square feet. CalEEMod estimates project direct and indirect GHG emissions related to employee and vendor trips, facility energy demands (lighting, temperature control, etc.), refuse disposal, water use, and wastewater generation.

Project GHG emissions related to streetcar operations were calculated based on the project engineer estimate of system energy demand in kilowatt hours and Los Angeles Department of Water and Power default CO_2, CH_4 and N_2O pounds/megawatt-hour intensity factors provided by CalEEMod.

VMT Estimation and Emissions Calculation

Some streetcar riders will use the streetcar to replace trips that were formerly made by car. The tool provided by the Federal Transit Administration (FTA) for estimating transit ridership is the Simplified Trips-On-Project Software (STOPS) model. The STOPS model also produces an estimate of person miles traveled (PMT) by automobile that would be reduced as a result of a project. For existing and future years of the Project, Metro used the STOPS model to estimate streetcar ridership and reduced PMT by auto.

To convert reduced auto PMT to reduced vehicle miles traveled (VMT), an average vehicle occupancy (AVO) factor was applied. This factor was derived from the City of Los Angeles Travel Demand Model, and it accounts for cars that carry more than one person (Fehr & Peers, 2013). Table 3.6-1 shows the STOPS model estimates of daily riders and associated auto person miles reduced, as well as the calculated estimates of vehicle miles reduced, for each of the four project alternatives.

To assess the effect of reduced VMT on GHG emissions, the speeds of vehicles traveling these miles was estimated using results from the City of Los Angeles Travel Demand Model (Fehr & Peers, 2013). The aggregated estimate of total reduced VMT, as derived from the STOPS model, was divided into speed bins (0–5 mph, 6–10 mph, 11–15 mph, etc.), as required by CT-EMFAC2014, the emissions model provided by ARB and the California Department of Transportation (Caltrans). Tables 3.6-2, 3.6-3, and 3.6-4 provide estimates of VMT by speed bin for each of the four build alternatives, for existing and future years.

As discussed above, the Project is anticipated to have an effect on local VMT and travel speeds. As such, the Project would have an effect on mobile-source criteria pollutant, MSAT, and GHG emissions. Changes in mobile-source emissions associated with regional traffic were estimated using the Caltrans' CT-EMFAC2014 emissions model (Version 6.0) and VMT data discussed above.

3.6.3.2 Thresholds of Significance

City of Los Angeles CEQA Thresholds Guide

The City of Los Angeles has not adopted specific citywide significance thresholds for GHG emissions. The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) does not address climate change or greenhouse gases. However, the State CEQA Guidelines (Appendix G) do address this topic and therefore these thresholds are used. The Project would be considered to have a significant impact if it would result in either of the following.

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.6.3.3 Construction and Operational Impacts

Alternative 1: No Project Alternative

No Impact. Under the No Project Alternative, the improvements and facilities associated with the Project would not be constructed or operated. The No Project Alternative represents conditions in the project study area that would remain if the proposed Project did not occur. It includes those improvements projected to be funded under the current RTP. The No Project Alternative also serves as the baseline for comparison and assessment of the project alternatives.

Table 3.6-1. LA Streetcar Daily Ridership and Auto Travel Reduction Estimates

Alternative	2015			2020			2040		
	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced[a]
2: 7th Street with Grand Avenue Extension	5,134	8,448	6,813	5,583	8,893	7,172	7,379	10,672	8,606
3: 7th Street without Grand Avenue Extension	3,795	6,775	5,464	4,123	7,098	5,724	5,434	8,391	6,767
4: 9th Street with Grand Avenue Extension	5,301	8,301	6,694	5,773	8,748	7,055	7,660	10,539	8,499
5: 9th Street without Grand Avenue Extension	3,522	6,042	4,873	3,851	6,352	5,123	5,170	7,592	6,123

Source: Metro 2016.

[a] Auto occupancy conversion factor (1.24 persons/vehicle) taken from City of Los Angeles Travel Demand Model.

Table 3.6-2. Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,410	1,131	1,386	1,009
10.2%	6–10	695	557	683	497
10.8%	11–15	736	590	723	526
17.7%	16–20	1,206	967	1,185	862
14.5%	21–25	988	792	971	707
7.0%	26–30	477	382	469	341
4.6%	31–35	313	251	308	224
3.2%	36–40	218	175	214	156
3.8%	41–45	259	208	254	185
3.3%	46–50	225	180	221	161
2.1%	51–55	143	115	141	102
1.3%	56–60	89	71	87	63
0.5%	61–65	34	27	33	24
0.2%	66–70	14	11	13	10
Sources: ICF International 2016; Fehr & Peers 2013.					

Table 3.6-3. Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,485	1,185	1,460	1,060
10.2%	6–10	732	584	720	523
10.8%	11–15	775	618	762	553
17.7%	16–20	1,269	1,013	1,249	907
14.5%	21–25	1,040	830	1,023	743
7.0%	26–30	502	401	494	359
4.6%	31–35	330	263	325	236
3.2%	36–40	229	183	226	164
3.8%	41–45	273	218	268	195
3.3%	46–50	237	189	233	169
2.1%	51–55	151	120	148	108
1.3%	56–60	93	74	92	67
0.5%	61–65	36	29	35	26
0.2%	66–70	14	11	14	10
Sources: ICF International 2016; Fehr & Peers 2013.					

Table 3.6-4. Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

Percent Allocation Proportions	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,782	1,401	1,759	1,267
10.2%	6–10	878	690	867	625
10.8%	11–15	929	731	918	661
17.7%	16–20	1,523	1,198	1,504	1,084
14.5%	21–25	1,248	981	1,232	888
7.0%	26–30	602	474	595	429
4.6%	31–35	396	311	391	282
3.2%	36–40	275	217	272	196
3.8%	41–45	327	257	323	233
3.3%	46–50	284	223	280	202
2.1%	51–55	181	142	178	129
1.3%	56–60	112	88	110	80
0.5%	61–65	43	34	42	31
0.2%	66–70	17	14	17	12
Sources: ICF International 2016; Fehr & Peers 2013.					

Alternatives 2 through 5: 7th Street Alternative and 9th Street Alternative, with and without Grand Avenue Extension

For each of the four build alternatives, GHG emissions during construction would result from activities related to the following: (1) construction worker, vendor, and haul truck trips; (2) MSF, TPSS sites, and station platform sites construction; and (3) track and catenary installation. GHG emissions related to each of these activities have been quantified for each of the four build alternatives. It is SCAQMD suggested guidance to amortize construction-period GHG emissions over the "typical project" useful life span of 30 years, then assess project construction-period GHG emissions together with project operations-period GHG emissions. As such, project emissions presented below in Table 3.6-5 account for project construction- and operations-period GHG emissions.

Once the Project becomes operational it is anticipated that a daily reduction in VMT would occur, due primarily to diversion of private automobile trips that would occur under the project alternatives when compared to the No Project Alternative. Net GHG emissions associated with project operations would result from the following: (1) net changes in passenger VMT that would occur within the study area under the project build alternatives, as compared to the No Project Alternative; (2) MSF operations; and (3) electricity generation needed to power streetcar operations. Project GHG emissions associated with each of these activities, along with project construction GHG emissions, are presented below in Table 3.6-5.

Greenhouse Gas Emissions

Less-than-significant impact. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as O_3 precursors) and toxic air contaminants (TACs), which are pollutants of regional and local concern. One of the main strategies to reduce California GHG emissions is to make California's transportation system more efficient. Projects that reduce VMT or relieve congestion would lead to an overall reduction in GHG emissions. Also, during construction, existing ARB regulations (Title 13 of the *California Code of Regulations* [CCR], Sections 2480 and 2485), which limit idling of diesel-fueled commercial motor vehicles, would help to limit GHG emissions associated with project-related construction vehicles.

Table 3.6-5 presents an estimate of project-related GHG emissions. The net change in GHG emissions due to the Project depends on the level of ridership (and consequent reduction in VMT) that the Project attracts. Under the lowest ridership forecast of Alternative 5, the Project is estimated to result in a net decrease in GHG emissions of 335 MTY. Net GHG emissions reductions under all other build alternatives would be greater than 335 MTY. As such, project GHG emissions under all build alternatives would remain below the significance threshold of 10,000 MTY CO_2e that SCAQMD applies to industrial emissions sources (SCAQMD 2008b). In addition, project GHG emissions under all build alternatives would remain below the SCAQMD draft screening significance threshold of 3,000 MTY for commercial/residential projects. Thus, project impacts related to GHG emissions would be less than significant under all build alternatives, and no mitigation measures necessary.

Table 3.6-5. Project-related Greenhouse Gas Emissions under the 2015 plus Project Condition (metric tons CO_2e per year)

Source Description	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Net Passenger Vehicle Emissions	(1,865)	(1,496)	(1,833)	(1,334)
Maintenance Facility Emissions[a]	375	375	375	375
Streetcar Operations Emissions[b]	573	540	573	540
Amortized Construction Emissions[a]	51	48	51	48
Total Project Emissions	(866)	(533)	(834)	(371)

Source: ICF International 2016.
[a] Road Construction Emissions Model and CalEEMod output sheets are provided in Appendix E.
[b] Alternatives 2 and 4 predicted to have electricity demand of 60,115 kilowatts (kWh) per week (see calculations in Appendix E); Alternatives 3 and 5 cover 5.7% less distance than Alternatives 2 and 4, and are therefore assumed to consume 5.7% less energy.

Consistency with GHG Reduction Plans

Less than significant impact. Senate Bill 375 (SB 375) was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under the law, SCAG is tasked with developing an SCS, a newly required element of the 2012 RTP that provides a plan for meeting emissions reduction targets set forth by the ARB.

On September 23, 2010, ARB issued a regional 8 percent per capita reduction target for the planning year 2020, and a conditional target of 13 percent for 2035 for the SCAG region. The currently conforming SCAG 2012–2035 RTP/SCS successfully achieves and exceeds these GHG emission-reduction targets set by ARB by achieving a 9 percent reduction by 2020 and 16 percent reduction by 2035 compared to the 2005 level on a per capita basis. The project is also identified in the recently adopted (April 2016), but not yet approved by EPA, SCAG 2016-2040 RTP/SCS, which also meets SB 375 GHG per capita reduction targets.

Because the proposed Project is identified in the currently conforming SCAG 2012 RTP/SCS (project number LA0G901) and recently adopted SCAG 2016–2040 RTP/SCS, project emissions would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Additionally, as shown in Table 3.6-5, the Project is estimated to result in a net decrease in GHG emissions under all build alternatives. Project GHG emissions would be less than significant. No mitigation measures are necessary.

3.6.4 Cumulative Impacts

The net change in GHG emissions due to the Project depends on the level of ridership (and consequent reduction in VMT) that the Project attracts, as discussed above. Under the lowest ridership forecast of Alternative 5, the Project is estimated to result in a net decrease in GHG emissions of 335 MTY. Net GHG emissions reductions under all other build alternatives would be greater than 335 MTY. As such, project GHG emissions under all build alternatives would remain below the SCAQMD significance threshold of 10,000 MTY CO_2e and the SCAQMD draft screening significance threshold of 3,000 MTY. The City does not have stated thresholds, and those of the SCAQMD are therefore being used to provide guidance until such time as other guidance becomes available. Finally, as the proposed Project is identified in the SCAG 2012 RTP/SCS (project number LA0G901), project GHG emissions would not conflict with any plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. For these reasons, the Project's contribution to global GHG emissions and climate change would be less than significant.

While cumulative GHG emissions would continue to be significant on a global basis, the Project contribution under any of the build alternatives would not be considered cumulatively considerable.

This page intentionally left blank.

3.7 Hazards and Hazardous Materials

This section addresses the potential for the Project to expose people and the environment to hazards and hazardous materials. Hazardous materials information in this section is based primarily on the Phase I Environmental Site Assessment (ESA) (July 2013) and the Phase I ESA for the South Park East MSF Site (May 2015), both conducted by HDR Engineering, Inc. (HDR). Both of the Phase I ESAs are included in Appendix F to this Draft Environmental Impact Report (EIR) and incorporated by reference herein.

3.7.1 Regulatory Setting

Hazardous substances are typically toxic, corrosive, ignitable, explosive, or chemically reactive. They may occur at a given location naturally, as a result of recent industrial or construction activities, or as a result of historical uses. Hazardous substances are defined in the federal *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), Section 101(14), and Title 22 of the *California Code of Regulations* (CCR), Chapter 11, Article 2, Section 66261. Federal, state, and local laws regulate the use and management of hazardous or potentially hazardous or explosive substances.

For this analysis, soil that is excavated from a site that contains hazardous materials would be considered a hazardous waste if specific CCR Title 22 criteria are exceeded. Remediation (i.e., cleanup and safe removal/disposal) of hazardous wastes found at a site is required if such materials are excavated; it may also be required if certain other activities are proposed. Even if the soil or groundwater at a contaminated site lacks the characteristics that require it to be defined as hazardous waste, remediation of the site may still be required by regulatory agencies, subject to jurisdictional authority.

3.7.1.1 Federal

Federal Toxic Substances Control Act (1976) and *Resource Conservation and Recovery Act of 1976*

The *Federal Toxic Substances Control Act* (1976) and the *Resource Conservation and Recovery Act of 1976* (RCRA) established a program, administered by the U.S. Environmental Protection Agency (EPA), to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. Hazardous waste in California is regulated primarily under the authority of RCRA (*United States Code* [USC] Title 42, Section 6901 et seq.). RCRA was established in 1976 to protect human health and the environment, reduce waste, conserve energy and natural resources, and eliminate the generation of hazardous waste. Under the authority of RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, or dispose of hazardous waste, is found in *Code of Federal Regulations* (CFR) Title 40, Sections 260–299. Other applicable federal laws and regulations include the following:

- 49 CFR Sections 172 and 173: These regulations establish standards for the transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping hazardous materials and hazardous wastes as well as training requirements for personnel who complete shipping papers and manifests.

- 40 CFR Subchapter I—Solid Wastes: These regulations implement the provisions of the *Solid Waste Act* and RCRA. They also establish criteria for the classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, and hazardous waste generator requirements as well as requirements for the management of used oil and universal wastes.

3.7.1.2 State

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA), created in 1991, unified California's environmental authority in a single cabinet-level agency and placed the California Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), CalRecycle, Department of Toxic Substances Control (DTSC), the Office of Environmental Health Hazard Assessment (OEHHA), and the Department of Pesticide Regulation (DPR) under one agency.

California Hazardous Waste Control Law (*California Health and Safety Code* Section 25100, et seq.) (1972)

The *California Hazardous Waste Control Law* (HWCL) is administered by CAL/EPA to regulate hazardous wastes. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous. The HWCL establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; and establishes permit requirements for treatment, storage, disposal, and transportation. It also identifies some wastes that cannot be disposed of in landfills. According to CCR Title 22, Chapter 11, Article 3, substances with toxicity, ignitability, corrosivity, or reactivity are considered to be hazardous.

Hazardous Waste Control Act (Section 25100 et seq.)

DTSC is responsible for enforcement of the *Hazardous Waste Control Act* (*California Health and Safety Code* Section 25100 et seq.), which creates the framework for managing hazardous wastes in California. The law provides for the development of a hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and the development of standards that are equal to or, in some cases, more stringent than federal requirements.

California Code of Regulations, Title 8—Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The federal Occupational Safety and Health Administration (OSHA) and the California Division of Occupational Safety and Health (known as Cal/OSHA) are the agencies with responsibility for ensuring employee safety in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. These standards would apply to the Project's construction activities.

California Labor Code (Division 5, Parts 1, 6, 7, and 7.5)

The *California Labor Code* is a collection of regulations that include workplace regulations to ensure appropriate training regarding the use and handling of hazardous materials and the operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who handle hazardous materials are appropriately trained and informed about the materials. Division 5, Part 6, governs operation and care of hazardous material storage tanks and boilers. Division 5, Part 7, ensures that employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing. Division 5, Part 7.5, otherwise referred to as the *California Refinery and Chemical Plant Worker Safety Act of 1990*, was enacted to prevent or minimize the consequences of catastrophic releases of toxic, flammable, or explosive chemicals.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (*California Health and Safety Code*, Chapter 6.11, Sections 25404–25404.9)

This program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the environmental and emergency response programs and provides authority to the Certified Unified Program Agency (CUPA). The CUPA for the City of Los Angeles and unincorporated areas of the county is the City of Los Angeles Fire Department's Bureau of Fire Prevention and Public Safety, which has the authority to implement and enforce CUPA program requirements, including the following:

- **California Accidental Release Prevention (Cal ARP) Program.** This program requires any business that handles more than threshold quantities of an extremely hazardous substance to develop a Risk Management Plan (RMP).
- **Hazardous Materials Management Plan (HMMP)/Hazardous Materials Inventory Statements.** HMMPs contain basic information regarding the location, type, quantity, and health risks of hazardous materials and/or waste. Each business must prepare an HMMP if that business uses, handles, or stores a hazardous material and/or waste or an extremely hazardous material in quantities greater than or equal to the following:
    - 55 gallons for a liquid,
    - 500 pounds for a solid,
    - 200 cubic feet for any compressed gas, and
    - Threshold planning quantities of an extremely hazardous substance.
- **Hazardous Waste Generator Program**. This program regulates businesses that generate any amount of a hazardous waste. Proper handling, recycling, treating, storing, and disposing of hazardous waste are key elements of this program.
- **Tiered Permitting Program**. This program regulates the on-site treatment of hazardous waste.
- **Underground Storage Tank (UST) Program.** This program regulates the construction, operation, repair, and removal of USTs that store hazardous materials and/or waste.

3.7.1.3 Regional and Local

South Coast Air Quality Management District Rule 1403

Rule 1403, as amended, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACMs). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and cleanup procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (ACWMs). All operators are required to maintain records, including waste shipment records, and use appropriate warning labels, signs, and markings.

Los Angeles County

The Los Angeles County Department of Public Works (DPW), Environmental Programs Division (EPD), prepares and administers the *Los Angeles County Integrated Waste Management Plan* and *Hazardous Waste Management Plan*, which provide direction for proper management of all waste generated within the county. As the county's lead agency, it advises the Los Angeles County Board of Supervisors regarding all waste management issues. EPD implements numerous programs to meet state-mandated solid waste reduction goals, including recycling, composting, source-reduction, household hazardous waste management, and public education programs. These programs regulate USTs in the county's unincorporated areas and more than 76 cities to protect groundwater resources.

City of Los Angeles

The City of Los Angeles Bureau of Sanitation is charged with collecting, cleaning, and recycling solid and liquid waste (including hazardous waste) generated by residential, commercial, and industrial users in the City of Los Angeles and surrounding communities.

City of Los Angeles Fire Code

The *City of Los Angeles Fire Code* prescribes laws pertaining to storing and handling hazardous material as well as safeguarding life and property from fire, explosion, panic, or other hazardous conditions that may arise in the use of buildings, structures, or other premises (*City of Los Angeles Municipal Code* Chapter 5, Article 7).

City of Los Angeles Fire Department Hazardous Materials Section

The City of Los Angeles Fire Department Hazardous Materials Section is the administrative agent for the *California Health and Safety Code*, CCR sections related to emergency planning and community right-to-know laws, and the federal *Superfund Amendments and Reauthorization Act*, Title III. Three units within this department process information related to hazardous materials. The Disclosure Unit is responsible for enforcing the disclosure law, which requires all establishments that store, produce, or use hazardous substances to inventory the materials on site; this includes new and existing businesses. The Business Plan Unit ensures that businesses take the right measures to mitigate any dangers. The Risk Management and Prevention Unit is responsible for evaluating Risk Management Prevention Plans that businesses must submit according to state law.

City of Los Angeles Fire Department Bureau of Fire Prevention and Public Safety (Underground Storage Tanks)

The Bureau of Fire Prevention and Public Safety maintains an Underground Storage Tank Unit, which implements and enforces the Underground Storage Tank Program. All USTs that are used to store fuel, solvents, or other liquids must be monitored for leakage. The law requires UST installations, removals, or alterations to be regulated under permit from the City of Los Angeles Fire Department.

City of Los Angeles Building Code

Division 71 of the *City of Los Angeles Building Code* sets forth regulations for the control of methane intrusion emanating from geologic formations. The methane seepage regulations specify site testing requirements and methane mitigation standards for all new buildings and paved areas (i.e., 5,000 square feet of paved area within 15 feet of an exterior wall of a commercial, industrial, institutional, or residential building) within designated methane zones or within methane buffer zones.

3.7.2 Environmental Setting/Affected Environment

The alignments for each of the project alternatives, as well as potential maintenance and storage facility (MSF) and traction power substation (TPSS) locations, make up the study area for this analysis. All land in the study area was included for analysis, including public rights-of-way and private properties. In addition, a one-eighth-mile buffer surrounding the alignments was evaluated for potential hazards and hazardous materials.

Existing buildings within the study area consist largely of multi-story office, commercial, residential, and retail buildings. Commercial warehouses are also present. Building construction dates back to the late 1920s. Given the mixed land uses in the area, the configurations, construction types, and sizes of the buildings vary, depending on the type of development (e.g., residential, commercial, retail) and the date of construction. In addition to the buildings, numerous paved parking lots are located within the study area. Subsurface utilities that are typical of urban development are also located within the study area as well as subsurface petroleum exploration, production, and distribution facilities.

A site reconnaissance survey of the study area was conducted on August 15 and 16, 2012; the survey did not identify other sites of concern. No indications of large-scale spills or hazardous material usage or disposal were identified within the study area. No pits, ponds, lagoons, or other indications of buried or large-scale hazardous material deposits were identified during the reconnaissance.

3.7.2.1 Records Review

Environmental Records Review

An environmental records search of federal, state, local, and proprietary databases was conducted as part of the July 2013 Phase I ESA. The database report contains a map and information regarding pertinent environmental records for the study area. The database search report identified 494 environmental listings within the study area or the one-eighth-mile surrounding vicinity. According to the evaluation, 68 records correspond to 37 sites that are considered to be of concern to the Project.

A one-quarter-mile buffer zone surrounding the project area was evaluated for purposes of the Environmental Data Resources (EDR) search radius for the South Park East MSF Site Phase I ESA (May 2015). The EDR database search identified 507 regulatory listings within the one-quarter-mile buffer zone of the project area. A total of 120 regulatory listings were located within one-eighth of a mile of the project area boundary. A total of 40 regulatory listings associated with 27 sites were identified adjacent to, previously adjacent to, or in the general vicinity (i.e., one-tenth of a mile) of the MSF site.

The data obtained from the listings are summarized in Appendix F. Table 3.7-1 contains information related to sites listed in various hazardous materials databases. Table 3.7-2 contains information specific to leaking underground storage tank (LUST) sites. The locations of recognized environmental conditions (RECs) with a risk rating of moderate or high are shown in Figure 3.7-1.

Table 3.7-1. Hazardous Materials Release Cases

Map ID	Site Name	Address	Associated Database(s)[a]	Risk Ranking/REC or HREC[b]
-	Jewelry Design Center/ Kirk-Rick Dials	404 W. 7th Street	CERCLIS, EnviroStor, ICIS	Low/HREC
AE	Staples Center	1111 S. Figueroa Street	CERCLIS, SLIC, UST	High/REC
O	Unique Premium Metals	640 S. Hill Street	RCRA Large-Quantity Generator (with violations)	Moderate/No REC
-	West Sixth and Broadway Partnership	314 W. 6th Street	EnviroStor	Indeterminate/REC
-	Los Angeles United Investment Co.	650 S. Hill Street	EnviroStor	Indeterminate/REC
-	M&M Holding, LLC	629 S. Hill Street	EnviroStor	Indeterminate/REC
-	United Building Associates	707 S. Broadway	EnviroStor	Indeterminate/REC
-	Park Central Building	412 W. 6th Street	EnviroStor	Indeterminate/REC
-	Arco-Lyondell Petrochemical	911 Wilshire Boulevard	TSCA	Indeterminate/REC
AP	Biltmore Cleaners	342 W. 9th Street	Drycleaners	Moderate/REC
-	Los Angeles Job Core	221 W. 11th Street	HAZNET	Low/No REC
-	AT&T Center	1150 S. Olive Street	HAZNET	Low/No REC
-	LBA Realty	1149 S. Olive Street	FINDS	Low/No REC
X	Wilson, L.C.	208 W. 11th Street	US Hist Cleaners	Moderate/REC
-	Associated Press	1111. S Hill Street	FINDS, RCRA-SQG	Low/No REC
-	Brickley Environmental	1049 S. Hill Street	HAZNET	Low/No REC
W	F. C. Broadway and Hill	1108 S. Hill Street	EnviroStor, VCP	Moderate/REC
-	C. I. Printing	1035 S. Olive Street	HAZNET	Low/No REC
-	YWCA, Greater LA	1020 S. Olive Street	NPDES	Low/No REC

Source: HDR Engineering, Inc. 2013, 2015.

[a] CERCLIS = Comprehensive Environmental Response, Compensation and Liability Information System; ICIS = Integrated Compliance Information System; SLIC = spills, leaks, investigation and cleanup;
TSCA = *Toxic Substance Control Act*; SQG = Small-Quantity Generator; VCP = Voluntary Cleanup Program; NPDES = National Pollutant Discharge Elimination System

[b] HREC = Historical Recognized Environmental Conditions; REC = Recognized Environmental Conditions

Shaded rows indicate high-risk cases. Cases with a high or moderate risk rating have been mapped in Figure 3.7-1.

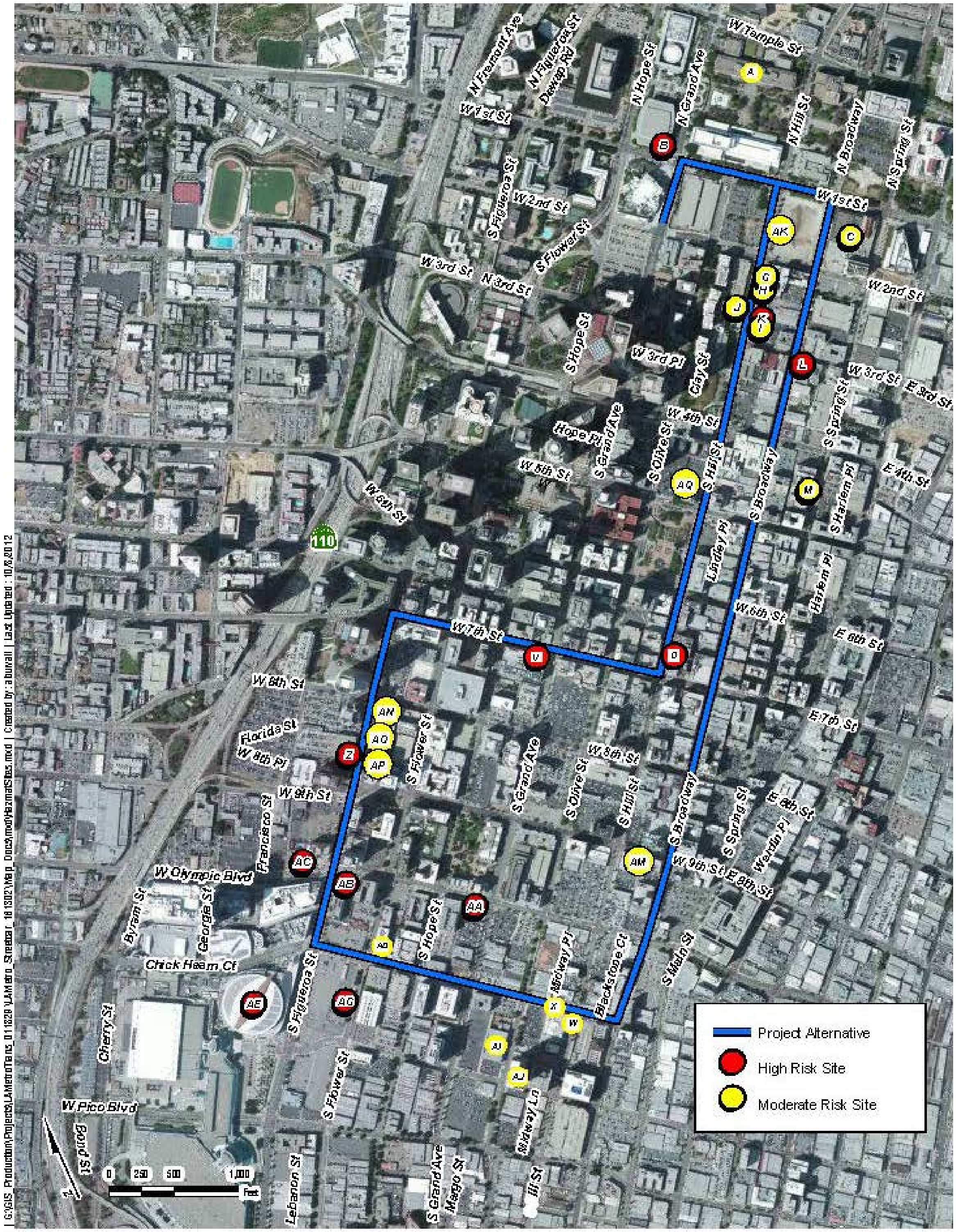
Table 3.7-2. Leaking Underground Storage Tank Cases

Map ID	Site Name	Address	LUST Listing	Hist Cortese Listing	LUST Case Open	LUST Case Closed	Soil Contamination	Groundwater Contamination	Contaminants of Concern[a]	Other Details and/or File Review Notes (when available)[b]	Risk Ranking/ REC or HREC[c]
K	Times Mirror	240 S. Hill Street	X	X	12/91	08/97	X	X	Solvents, non-petroleum hydrocarbon	Site located adjacent to Alternatives 2–5.	High (based on location and groundwater impact)/HREC
L	Bradbury Building	304 S. Broadway	X		06/05	03/08	X		Gasoline	Site located adjacent to Alternatives 2–5.	High (based on location)/HREC
V	Carrier Center LA	600 W. 7th Street	X		07/94	06/95	X		Diesel	Site located adjacent to Alternatives 2 and 3.	High (based on location)/HREC
M	Twin Springs	433 S. Spring Street	X	X	02/02	09/11	X		Gasoline	Release located approximately 400 feet east of Alternatives 2–5 Case closed with residual contamination present on-site.	Moderate/HREC
B	**County of LA**	**145 N. Grand Avenue**	**X**		**05/95**	**Open**	**X**		**Gasoline**	**LUST case remains open. Site is located approximately 200 feet north of Alternatives 2 and 4.**	**High (based on open LUST case)/REC**
C	Times Mirror Corp	145 S. Spring Street	X	X	04/88	03/89	X		Gasoline	No additional information available. Site located adjacent to Alternatives 2–5.	Moderate/HREC
A	LA Co Hall of Admin	500 W. Temple Street	X	X	10/86	09/90	X		Diesel	No additional information available. Site located approximately 600 feet north of Alternatives 2–5.	Moderate/HREC
AD	No site name listed	1050–1070 S. Flower Street	X		12/03	03/07	X		Heating/fuel oil	Affected soil excavated from site in 2003. Site located adjacent to Alternatives 2–5.	Moderate/HREC
AB	Unocal # 1300	730 W. Olympic Boulevard	X	X	03/94	06/94	X		Other solvents, non-petroleum hydrocarbon	Site located adjacent to Alternatives 2–5.	High (based on location)/HREC
AA	**Shell**	**504 W. Olympic Boulevard**	**X**		**02/05**	**7/13**	**X**	**X**	**Gasoline, diesel, MTBE, TBA, other fuel oxygenates**	**Extent of contamination not yet fully defined, per regulatory agency.** Site located approximately 500 feet north of the 11th Street alignment in Alternatives 2–5.	**High /REC**
Z	801 Tower Building	845 S. Figueroa Street	X	X	10/93	03/96	X	X	Gasoline	Site located adjacent to Alternatives 2–5. According to regulatory agency, extent of contamination is limited.	High (based on location and groundwater impact)/HREC
AG	**Arco #5033**	**1151 S. Flower Street**	**X**		**08/95**	**4/13**	**X**		**Gasoline**	**Site located approximately 250 feet south of Alternatives 2–5. No additional information regarding LUST case was available.**	**High (based on location)/REC**
-	Morllin Mgmt/ Former Union Oil Co	617 W. 7th Street		X	Unknown	Unknown	Unknown	Unknown	Unknown	Site located adjacent to Alternatives 2 and 3. No additional information available from HDR report or County RWQCB.	Indeterminate/ REC
AC	**Chevron/Former Car Wash**	**811 W. Olympic Boulevard**	**X**		**03/03**	**7/13**	**X**	**X**	**Gasoline**	**Site located adjacent to Alternatives 2–5. Non-actionable levels of TPH-gasoline, benzene, ethylbenzene, toluene, and xylenes detected in soil samples collected in January 2012. Case closure letter submitted.**	**High (based on location)/REC**

Source: HDR Engineering, Inc. 2013, 2015. The cases have at 504 W. Olympic Boulevard and 1151 S. Flower Street have been updated according to data collected from GeoTracker.
[a] MTBE = methyl tertiary butyl ether, TBA = tertiary butyl alcohol, TPH = total petroleum hydrocarbon
[b] Regulatory files reviewed at the Los Angeles County Regional Water Quality Control Board and/or associated GeoTracker website.
[c] REC = Recognized Environmental Condition, HREC = Historical REC
Bold text indicates open or active regulatory case.
Shaded rows indicate high-risk cases. Cases with a high or moderate risk rating have been mapped in Figure 3.7-1.

This page was intentionally left blank.

Figure 3.7-1. High or Moderate Risk Recognized Environmental Conditions



HDR
ONE COMPANY | Many Solutions

This page was intentionally left blank.

Given the potential for grading/excavation at the MSF/TPSS sites, as well as the potential for soil contamination in the vicinity of USTs (even if not classified as a LUST), the UST sites listed in Table 3.7-3 are considered to be a moderate risk and a REC.

Table 3.7-3. Underground Storage Tank Sites

Map ID	Site Name	Address	Associated Database(s)[a]	Project Component Potentially Affected
G	Current Occupant (Cherry Pick Cafe)	208 S. Hill Street	SWEEPS, CA FID	MSF Broadway and 2nd
H	Webster Career College	222 S. Hill Street	SWEEPS, CA FID	MSF Broadway and 2nd
I	Current Occupant (Parking Lot)	240 S. Hill Street	SWEEPS, CA FID	MSF Broadway and 2nd
J	Angelus Plaza	245 S. Hill Street	State UST, SWEEPS, CA FID	MSF Broadway and 2nd
AI	AT&T Center Parking Garage	1133 S. Olive Street	State UST, SWEEPS, CA FID, HIST UST	MSF 11th and Olive (East and West)
AJ	AT&T Center	1150 S. Olive Street	SWEEPS, CA FID	MSF 11th and Olive (East and West)
AK	Office of Fleet Management	122 S. Hill Street	State UST, SWEEPS, CA FID, HIST UST	TPSS
C	*Los Angeles Times*	130 S. Broadway	SWEEPS	TPSS
C	Los Angeles Times Parking Structure	150 S. Broadway	SWEEPS	TPSS
AM	9th and Hill Partnership	220 W. 9th Street	SWEEPS	TPSS
AN	800 Figueroa Building	800 S. Figueroa Street	State UST, SWEEPS, CA FID, HIST UST	TPSS
AO	Service Station	860 S. Figueroa Street	HIST UST	TPSS
AP	888 International Tower	888 S. Figueroa Street	SWEEPS	TPSS
AQ-	Title Guarantee Building	411 W. 5th Street	SWEEPS, CA FID	MSF Hill and 5th

Source: HDR Engineering, Inc. 2013, 2015.
[a] SWEEPS = Statewide Environmental Evaluation and Planning System UST database; CA FID = California Facility Inventory UST database; HIST UST = Historical UST registered database

Ten additional sites of concern were identified from reviews of historical resources (e.g., Sanborn fire insurance maps, historical aerial imagery, and City directories). The sites are considered to be of concern given the likelihood for USTs or other historic hazards to have been on the sites previously (see Table 3.7-4).

Table 3.7-4. Sites of Concern Identified from Sanborn Insurance Maps

Site Name	Location	Year(s) Depicted	Notes
Gas & Oil	Southwest corner of 1st Street and Hill Street	1906, 1923, 1950	Site located adjacent all alternatives
Gas & Oil	Southeast corner of 1st Street and Hill Street	1906, 1923, 1950	Site located adjacent all alternatives
Gas & Oil	Southeast corner of 2nd Street and Grand Avenue	1906, 1923, 1950	Site located adjacent to Alternatives 2 and 4
Gas & Oil	South of 11th Street, between Grand Avenue and Olive Street	1888	Historic gas station was located in the location of MSF 11th and Olive (East and West)
Gas Station	Southeast corner of Figueroa Street and Olympic Boulevard	1906, 1923, 1950	Site is at the location of the Unocal Station identified from the HDR review. Risk ranking elevated to high risk based on regulatory listing.
Gas & Oil	Southwest corner of 8th Street and Figueroa Street	1906, 1923, 1950	Site located adjacent to Alternatives 2 and 3.
Gas & Oil	Southwest corner of Flower Street and 11th Street	1906, 1923, 1950	Site located adjacent to all alternatives.
Gas & Oil	Northwest corner of 9th Street and Flower Street	1906, 1923, 1950	Site located adjacent to Alternatives 4 and 5.
Gas & Oil	Southwest corner of 9th Street and Hope Street	1906, 1923, 1950	Site located adjacent to Alternatives 4 and 5.
Auto Service/ Gas & Oil	Southeast corner of S. Olive Street and W. 11th Street	1953	Site located adjacent to the location of MSF 11th and Olive (East and West)
Source: HDR Engineering, Inc. 2013, 2015.			

3.7.3 Environmental Impact Analysis

3.7.3.1 Methodology

The following analysis evaluates potential effects related to hazards and hazardous materials resulting from implementation of the Project. The impact analysis assesses direct and indirect impacts related to hazards and hazardous materials, given the existing conditions described above, and determines whether they would exceed any of the thresholds listed below.

3.7.3.2 Thresholds of Significance

According to the *L.A. CEQA Thresholds Guide* (2006), the following factors are to be considered on a case-by-case basis when determining the significance of impacts related to hazards and hazardous materials:

Risk of Upset/Emergency Preparedness

- The regulatory framework.

- The probable frequency and severity of consequences to people or property as a result of a potential accidental release or explosion of a hazardous substance.
- The degree to which the project may require a new, or interfere with an existing, emergency response or evacuation plan and the severity of the consequences.
- The degree to which project design would reduce the frequency or severity of a potential accidental release or explosion of a hazardous substance.

Human Health Hazards

- The regulatory framework for the health hazard.
- The probable frequency and severity of consequences to people from exposure to the health hazard.
- The degree to which project design would reduce the frequency of exposure or severity of consequences of exposure to the health hazard.

3.7.3.3 Impacts

Alternative 1: No Project Alternative

Construction Impacts

Risk of Upset/Emergency Preparedness

No impact. Under the No Project Alternative, no construction activities would be undertaken. Consequently, there would be no change with respect to the frequency or severity of a potential accidental release or explosion of a hazardous substance. In addition, there would be no change with respect to emergency response or evacuation plans.

Human Health Hazards

No impact. Under the No Project Alternative, no construction activities would be undertaken. Consequently, there would be no change with respect to the probability, frequency, or severity of human exposure to health hazards.

Operational Impacts

Risk of Upset/Emergency Preparedness

No impact. Under the No Project Alternative, the Project would not be implemented. Consequently, there would be no change with respect to the frequency or severity of a potential accidental release or explosion of a hazardous substance. In addition, there would be no change with respect to emergency response or evacuation plans.

Human Health Hazards

No impact. Under the No Project Alternative, the Project would not be implemented, but ongoing improvements to the transportation system in downtown Los Angeles would occur. Consequently, there would be no change with respect to the probability, frequency, or severity of human exposure to health hazards.

Alternative 2: 7th Street Alternative With Grand Avenue Extension

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Given the historic industrial uses in the study area, there is potential for contaminated soils to be uncovered during construction of Alternative 2. It is possible that workers could encounter buried tracks from the past operation of streetcars, a possible source of soil contamination from creosote-contaminated railroad ballast. The removal of contaminated soil and other hazardous wastes may pose a hazard to construction workers and the surrounding population if improperly managed. Construction of the Project could result in significant impacts related to the excavation and disposal of hazardous materials prior to mitigation. Mitigation Measures **MM-HM-C1 through MM-HM-C6**, related to the treatment and disposal of soils, would reduce this potential impact to a less-than-significant level.

The July 2013 Phase I ESA conducted for the Project revealed evidence of 27 RECs and 10 HRECs, some of which are now closed cases. As previously indicated, the site reconnaissance of the study area conducted on August 15 and 16, 2012, did not identify other sites of concern. No indications of large-scale spills or hazardous material usage or disposal were identified within the study area. No pits, ponds, lagoons, or other indications of buried or large-scale hazardous material deposits were identified during the reconnaissance.

Given that groundwater is found at depths of 30 to 50 feet below ground surface in the project vicinity (HDR 2013), it is unlikely that groundwater would be encountered during construction. However, if groundwater is encountered, there is potential for it to be contaminated given the past industrial uses in the area, and impacts could be significant prior to the implementation of mitigation measures. Implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8** would reduce this impact to a less-than-significant level.

Although unlikely, construction activities have the potential to result in the release of hazardous materials (e.g., fuel leaking from equipment or contaminated soil spilling during transport). With implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C8**, impacts associated with the potential accidental release of hazardous materials during construction would be less than significant.

As identified in Tables 3.7-1 through 3.7-4, Alternative 2 would be located close to RECs and HRECs. Excavation in such areas could encounter contaminated soils. Although the proposed alignment for Alternative 2 is within a transportation right-of-way, contaminant migration from adjacent sites to the path of the Project may have occurred. Excavation at the MSF and TPSS sites also has the potential to uncover contaminated soils. However, with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C8**, construction-related impacts associated with the proximity of Alternative 2 to sites containing hazardous materials would be less than significant.

No full road closures are anticipated during the construction period. Track construction along the route would occupy two lanes of traffic—one for the track and one for a work zone. The remaining lanes would be open to traffic, and the sidewalks would remain open to pedestrians. Construction vehicles may enter and exit the general traffic lanes, with flaggers, in the areas of construction. Short-duration lane closures, predominantly on one side or the other of the work zone, would be required for delivery of materials and during concrete pours. Because the work zone would be confined within the track area, lane closures are anticipated only for short segments and would be limited primarily to non-peak hours. None of the roadways that would be used are designated as emergency response routes, but emergency responders could continue to travel along these roadways as the location of the emergency dictates. A Traffic Management Plan (TMP) would be implemented, which will include consultation with emergency service providers (Los Angeles Police Department and Los Angeles Fire Department), and is discussed in **MM-TRAF-C1** in Section 3.10. The grid layout of the downtown Los Angeles area provides emergency responders with the flexibility to travel to an emergency scene by multiple routes, affording responders the ability to bypass known congested intersections. Construction would not require a new or revised emergency response plan. Close coordination with applicable emergency responders would occur. Therefore, impacts related to emergency services would be less than significant with mitigation.

Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Human Health Hazards

Less-than-significant impact. As discussed previously, construction activities for Alternative 2 may require the transport of contaminated soils from the project site to disposal locations. The transport of such materials would involve potential exposure risks to construction workers and to the general public along roadways. However, with implementation of measures **MM-HM-C1** through **MM-HM-C6**, impacts would be less than significant.

Several schools are located within 0.25 mile of the project alignment:

- School for Integrated Academics and Technologies (SIATech) High School, 0.006 mile (30 feet).
- Fashion Institute of Design and Merchandising, 0.15 mile.
- California Academy for Liberal Studies Early College High School, 0.06 mile (307 feet).
- Green Dot Public School, 0.14 mile.
- Colburn School, 0.12 mile.

Other nearby schools include:

- Animo Inglewood Charter High, 0.54 mile from the project alignment.
- Abram Friedman Occupational School, 0.51 mile from the project alignment.
- Jardin de la Infancia School, 0.31 mile from the project alignment.

Given the site-specific nature of excavation and construction activities and the distance between the Alternative 2 alignment and schools, risks from contaminated soils or hazardous materials are considered to be low. The only school site located adjacent to the Alternative 2 alignment is SIATech High School. As recommended by the July 2013 Phase I ESA, a focused Preliminary Site Investigation (PSI) shall be conducted at this location, as prescribed by Mitigation Measure **MM-HM-C1**, to identify and mitigate the effects of any potential hazardous materials. Furthermore, haul route trucks would comply with the City's Notification of Hazardous Substances General Conditions. Therefore, impacts on schools could be significant prior to mitigation but less than significant with implementation of Mitigation Measure **MM-HM-C1**.

Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Operation of Alternative 2 would involve the use of common chemicals for cleaning and maintenance of the streetcar vehicles, tracks, and other components. Past and current rail transit operations indicate that active streetcar track beds accumulate petroleum hydrocarbons from the use of lubricants as well as some shavings from the turning of steel wheels on steel rails. The degree of hazard and the magnitude of accumulation would not represent a public health concern because the Project's rail lubricants would be specified to be biodegradable. Steel shavings would be non-hazardous and produced in small quantities similar to those that occur along light rail lines. Impacts related to the routine transport, use, and disposal of hazardous materials during operation of Alternative 2 would be less than significant.

Following the completion of construction, no ground-disturbing activities would be associated with operation of the Project. Therefore, the risk of encountering contaminated soils and other hazardous materials on sites that are known to contain them would be minimal. The operational impacts would be less than significant.

Operation of Alternative 2 would not require a new or revised emergency response plan, nor would it interfere with adopted plans. As previously discussed, emergency responders would continue to travel along the roadways as the location of the emergency dictates. The Project would be served by Los Angeles Fire Department Division 1, Battalion 1, at Station No. 3 and the Los Angeles Police Department Central Division, Central Community Police Station. The Los Angeles County Sheriff's Department's Transit Services Bureau would provide contract police service and would be capable of responding to security-related emergencies along the project alignment. The Project would comply with all applicable emergency service requirements. Although significant impacts would occur at three intersections (Grand Avenue and 1st Street, Hill Street and 1st Street, and Hill Street and 7th Street) during the peak hours, as discussed in the traffic section, the grid layout of the downtown Los Angeles area provides emergency responders with the flexibility to travel to an emergency scene by multiple routes and affords responders the ability to bypass known congested intersections. Therefore, impacts occurring as a result of project implementation would be less than significant with the implementation of the TMP, as discussed in MM-TRAF-C1 in Section 3.10.

Human Health Hazards

Less-than-significant impact. The use and transport of any hazardous materials, such as lubricants and cleaning solvents, required for the operation of Alternative 2 would be minimal and would not pose a danger to children at nearby schools and childcare facilities. Any hazardous materials would be used and disposed of in compliance with existing regulations. Therefore, impacts would be less than significant.

Alternative 3: 7th Street Alternative Without Grand Avenue Extension

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Construction impacts related to risk of upset and emergency preparedness under Alternative 3 would be similar to those described under Alternative 2, except that the Alternative 3 alignment and construction footprint would not include roadway modifications along Grand Avenue and a portion of 1st Street. Impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. Similar to Alternative 2, impacts related to groundwater would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**.

As specified under Alternative 2, no full road closures are anticipated during the construction period, and impacts related to emergency services would be less than significant with implementation of the TMP, as discussed in **MM-TRAF-C1** in Section 3.10.

Impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Human Health Hazards

Less-than-significant impact. Construction impacts related to human health hazards under Alternative 3 would be similar to those described under Alternative 2, except that the Alternative 3 alignment and construction footprint would not include roadway modifications along Grand Avenue and a portion of 1st Street. As identified under Alternative 2, construction-period impacts on schools could be significant prior to mitigation and less than significant with implementation of Mitigation Measure **MM-HM-C1**.

Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As discussed for operation of Alternative 2, Alternative 3 would involve the use of common chemicals for cleaning and maintenance of the streetcar vehicles, tracks, and other components. However, such use would be as directed per manufacturer specifications and in non-hazardous quantities so that significant impacts would not result.

Emergency response impacts resulting from operation of Alternative 3 would be less than significant for the same reasons identified under Alternative 2.

Human Health Hazards

Less-than-significant impact. The use and transport of any hazardous materials would be similar to that described under Alternative 2. Impacts would be less than significant under Alternative 3.

Alternative 4: 9th Street Alternative With Grand Avenue Extension

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Construction impacts related to risk of upset and emergency preparedness under Alternative 4 would be similar to those described under Alternative 2, except that the Alternative 4 alignment and construction footprint would include segments on 9th Street and Hill Street that would not be included under Alternative 2, and would not include segments on 7th Street and Figueroa Street that would be included under Alternative 2. Impacts would be mitigated to less-than-significant levels with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. As under Alternative 2, impacts related to groundwater would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**.

As specified under Alternative 2, no full road closures are anticipated during the construction period, and impacts related to emergency services would be less than significant with implementation of the TMP, as discussed in **MM-TRAF-C1** in Section 3.10.

Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Human Health Hazards

Less-than-significant impact. Construction impacts related to human health hazards under Alternative 4 would be similar to those described under Alternative 2, but the proximity to specific sites that potentially contain hazardous materials would differ somewhat. Construction-period impacts on schools could be significant prior to mitigation but less than significant with implementation of Mitigation Measure **MM-HM-C1**. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As discussed for the operation of Alternative 2, Alternative 4 would involve the use of common chemicals for cleaning and maintenance, and impacts would be less than significant. Emergency response impacts resulting from operation of Alternative 4 would be less than significant for the same reasons identified under Alternative 2.

Human Health Hazards

Less-than-significant impact. Risks related to human health hazards would be similar to those described for Alternative 2, and impacts would be less than significant.

Alternative 5: 9th Street Alternative Without Grand Avenue Extension

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Construction impacts related to risk of upset and emergency preparedness under Alternative 5 would be similar to those described under Alternative 2 with the exceptions that the proximity to specific sites that potentially contain hazardous materials would differ somewhat and that the alignment and construction footprint would not include roadway modifications along Grand Avenue and a portion of 1st Street. Impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. Impacts related to groundwater would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**. Also, as detailed under Alternative 2, impacts related to emergency services would be less than significant with implementation of the TMP, as discussed in **MM-TRAF-C1** in Section 3.10.

Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Human Health Hazards

Less-than-significant impact. Construction impacts related to human health hazards under Alternative 5 would be similar to those described under Alternative 2 with the exceptions that the proximity to specific sites that potentially contain hazardous materials would differ somewhat and that the alignment and construction footprint would not include roadway modifications along Grand Avenue and a portion of 1st Street. However, impacts would be less than significant with implementation of Mitigation Measure **MM-HM-C1**. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As discussed for operation of Alternative 2, Alternative 5 would involve the use of common chemicals and risk of upset, and impacts would be less than significant. Emergency response impacts resulting from operation of Alternative 5 would be less than significant for the same reasons identified under Alternative 2.

Human Health Hazards

Less-than-significant impact. The use and transport of any hazardous materials, such as lubricants and cleaning solvents, required for the operation of Alternative 5 would be minimal and would not pose a danger to children at nearby schools or childcare facilities. Any hazardous materials would be used and disposed of in compliance with existing regulations. Therefore, impacts would be less than significant.

Traction Power Substations (TPSS)

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As shown in Table 3.7-3, USTs are located in proximity to potential TPSS locations. Given that the TPSS installation process would involve utility work below grade, any USTs located in proximity to the proposed TPSS locations may require removal, which could result in significant impacts stemming from risks related to the removal process and any potentially contaminated soil. However, with implementation of Mitigation Measure **MM-HM-C1**, a PSI will be prepared. The PSI will specify the procedures for dealing with USTs located in proximity to the TPSS locations, which would involve testing and stockpiling soils with readings exceeding 50 parts per million (ppm) for volatile organic compounds (VOCs). Mitigation Measures **MM-HM-C1 through MM-HM-C6** would also be implemented to mitigate impacts related to any contaminated soils encountered during the TPSS installation period.

With the exception the TPSS site near the 2nd Street/Grand Avenue intersection, all TPSS sites would be at off-street locations and would not impair or otherwise physically interfere with emergency response vehicles during the installation process. For the 2nd Street/Grand Avenue TPSS location, temporary lane closure may be required during the installation process, which could delay traffic flow in the immediate vicinity. Impacts at this location would be less than significant with implementation of the TMP, as discussed in **MM-TRAF-C1** in Section 3.10.

Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Human Health Hazards

Less-than-significant impact. Construction impacts for the TPSS sites related to human health hazards would involve the removal and transport of soil, some of which may be contaminated, in proximity to school sites. However, with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**, impacts would be less than significant. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. During operation of the Project, an accidental release of hazardous substances could occur should there be an equipment failure at TPSS locations. However, the TPSS equipment would undergo substantial testing and routine maintenance once the Project is operational. Therefore, the risk of TPSS unit failure and accidents would be low. Furthermore, the TPSS unit would be enclosed within a structure and would be physically separated from passersby. Therefore, impacts would be less than significant.

All TPSS sites would be off-street locations and would not impair or otherwise physically interfere with emergency response vehicles during normal project operation. Maintenance activities could involve temporary lane closures, but these activities would be infrequent and would be limited to non-peak hours to the extent feasible.

Human Health Hazards

Less-than-significant impact. Following installation of the TPSS units, project operation would not generate or use hazardous materials in quantities that could result in substantial hazards to human health.

Maintenance and Storage Facility (MSF)

Broadway and 2nd Street

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As documented in the July 2013 Phase I ESA, there are several RECs with either moderate or high risks located in proximity to the Broadway and 2nd Street MSF site. Construction would involve excavation and grading activities, which may result in workers encountering soil that has been contaminated from past industrial uses in the area. Potential impacts associated with contaminated soil would be mitigated to less-than-significant levels with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. In the event that groundwater is encountered, there is also potential for it to be contaminated given the past industrial uses in the area, and impacts would be significant prior to implementation of mitigation measures. Implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8** would reduce this impact to a less-than-significant level. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

This site would be an off-street location and would not impair or otherwise physically interfere with emergency response vehicles.

Human Health Hazards

Less-than-significant impact. Construction of this site would involve the use of fuels (e.g., to power equipment) and other industrial chemicals. Such chemicals would be used in compliance with the manufacturers' specifications and in quantities that would not be considered hazardous. Access to the site would be controlled, and any chemicals temporarily stored at the site would be secured to prevent human health hazard impacts. Impacts would be less than significant.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Activities at the MSF, which would not be constructed or operated within the public right-of-way, would require handling and using volatile and hazardous substances, such as lubricants, oils, greases, and solvents, on a daily basis. Accidental releases are possible but would not present a substantial risk because these substances would be stored in compliance with existing regulations and industrywide safety standards. As discussed in Chapter 5, implementation of the Standard Urban Stormwater Mitigation Plan would prevent hazardous substances from leaving the MSF site as stormwater runoff.

Chemicals used for MSF operation would be stored, handled, and disposed of in compliance with existing regulations and manufacturers' specifications. Because these regulations and specifications detail the procedures related to the handling of substances at the MSF, the risks of an accidental release of hazardous materials into the environment would be minimized. Based on the remote likelihood of an accidental release, MSF operation would not pose a significant hazard to the public or the environment. The Project is not expected to require the routine use or transport of hazardous materials in addition to those typically associated with maintenance activities.

This MSF site would be an off-street location and would not impair or otherwise physically interfere with emergency response vehicles. Impacts would be less than significant.

Human Health Hazards

Less-than-significant impact. Potential human health hazards related to the operation of this MSF site would be limited to those that may occur as a result of the daily use of lubricants, oils, greases, and solvents. Such chemicals would be stored and disposed of in compliance with existing regulations and manufacturers' specifications so that they would not pose a substantial risk to human health in the vicinity. Impacts would be less than significant.

Hill Street and 5th Street

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As documented in the July 2013 Phase I ESA, there are no RECs with either moderate or high risks located in the immediate vicinity of the Hill Street and 5th Street MSF site. Impacts associated with contaminated soil would be similar to those at the Broadway and 2nd Street site with the exception that the proximity to specific sites that potentially contain hazardous materials would differ somewhat. However, impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. Potential groundwater impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

This MSF site would be an off-street location and would not impair or otherwise physically interfere with emergency response vehicles.

Human Health Hazards

Less-than-significant impact. As with the Broadway and 2nd Street MSF site, construction of the Hill Street and 5th Street MSF site would involve the use of fuels to power equipment and other industrial chemicals in non-hazardous quantities, which would be stored in a secure manner to prevent hazards to human health. Impacts would be less than significant.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Activities at the Hill Street and 5th Street MSF site would be similar to those discussed for the Broadway and 2nd Street location, and impacts related to risk of upset and emergency preparedness would be less than significant.

Human Health Hazards

Less-than-significant impact. Potential human health hazards related to the operation of this MSF site would be limited to those that may occur as a result of the daily use of lubricants, oils, greases, and solvents. Such chemicals would be stored and disposed of in compliance with existing regulations and manufacturers' specifications so that they would not pose a substantial risk to human health in the vicinity. Impacts would be less than significant.

11th Street and Olive Street (East)

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As documented in the July 2013 Phase I ESA, there are several RECs with either moderate or high risks located in the immediate vicinity of the 11th Street and Olive Street (East) MSF site. As with the Broadway and 2nd Street MSF site, potential impacts related to contaminated soil would be less than significant with implementation of Mitigation Measures

MM-HM-C1 through MM-HM-C6. In addition, potential groundwater impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

In addition to being located in proximity to RECs, the 11th Street and Olive Street (East) MSF site is located within a methane zone, according to the City's Zone Information and Map Access System (ZIMAS) (Version 3.0.1263 (d105)). Construction of this MSF site would comply with all applicable local regulations, including those related to methane, as specified in the Division 71 of the *City of Los Angeles Building Code*. Impacts would be less than significant.

The 11th Street and Olive Street (East) MSF site would be an off-street location and would not impair or otherwise physically interfere with emergency response vehicles.

Human Health Hazards

Less-than-significant impact. As with the Broadway and 2nd Street MSF site, construction of the 11th Street and Olive Street (East) MSF site would involve the use of fuels to power equipment and other industrial chemicals in non-hazardous quantities, which would be stored in a secure manner to prevent hazards to human health. Impacts would be less than significant.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Activities at the 11th Street and Olive Street (East) MSF site would be similar to those discussed for the Broadway and 2nd Street location, and impacts related to risk of upset and emergency preparedness would be less than significant.

Human Health Hazards

Less-than-significant impact. Potential human health hazards related to operation of the 11th Street and Olive Street (East) MSF site would be limited to those that may occur as a result of the daily use of lubricants, oils, greases, and solvents. Such chemicals would be stored and disposed of in compliance with existing regulations and manufacturers' specifications so that they would not pose a substantial risk to human health in the vicinity.

11th Street and Olive Street (West)

Construction Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. As documented in the July 2013 Phase I ESA, there are several RECs with either moderate or high risks located in the immediate vicinity of the 11th Street and Olive Street (West) MSF site. As with the Broadway and 2nd Street MSF site, potential impacts related to contaminated soil would be less than significant with implementation of Mitigation Measures **MM-HM-C1 through MM-HM-C6**. In addition, potential groundwater impacts would be less than significant with implementation of Mitigation Measures **MM-HM-C7 and MM-HM-C8**. Overall, impacts would be less than significant prior to mitigation being incorporated, and would remain less than significant following implementation of mitigation.

As with the 11th Street and Olive Street (East) MSF site, the 11th Street and Olive Street (West) MSF site is located within a methane zone, according to the City's ZIMAS (Version 3.0.1263 (d105)). With compliance with Division 71 of the *City of Los Angeles Building Code*, impacts would be less than significant.

The 11th Street and Olive Street (West) MSF site would be an off-street location and would not impair or otherwise physically interfere with emergency response vehicles.

Human Health Hazards

Less-than-significant impact. As with the Broadway and 2nd Street MSF site, construction of the 11th Street and Olive Street (West) MSF site would involve the use of fuels to power equipment and other industrial chemicals in non-hazardous quantities, which would be stored in a secure manner to prevent hazards to human health. Impacts would be less than significant.

Operational Impacts

Risk of Upset/Emergency Preparedness

Less-than-significant impact. Activities at the 11th Street and Olive Street (West) MSF site would be similar to those discussed for the Broadway and 2nd Street location, and impacts related to risk of upset and emergency preparedness would be less than significant.

Human Health Hazards

Less-than-significant impact. Potential human health hazards related to operation of the 11th Street and Olive Street (West) MSF site would be limited to those that may occur as a result of the daily use of lubricants, oils, greases, and solvents. Such chemicals would be stored and disposed of in compliance with existing regulations and manufacturers' specifications so that they would not pose a substantial risk to human health in the vicinity.

3.7.4 Mitigation Measures

The following mitigation measures are recommended to lessen the impacts of hazardous materials that otherwise could result.

Soil Contamination

MM-HM-C1: During construction, a focused PSI shall be conducted at specified locations adjacent to the identified sites of concern with moderate, high, and indeterminate risks as well as the proposed locations for the MSF and TPSSs. A PSI in these areas shall include a soil boring and laboratory analytical program to address contaminants of concern specific to each site. Soils that have visible staining or an odor shall first be tested in the field by the contractor or qualified environmental subcontractor with an organic vapor analyzer (OVA) or other field equipment for volatile components, which require additional considerations in their handling. Soil with OVA readings exceeding 50 ppm for VOCs (probe held 3 inches from the excavated soil face), or that is visibly stained or has a detectable petrochemical odor, shall be stockpiled by the contractor separately from non-contaminated soils. The stockpiles shall be barricaded near the excavation area, away from drainage areas or catch basins, on an impermeable plastic liner (6-millimeter nominal thickness and tested at 100 pounds per square inch). Caution must be taken to separate any contaminated soil from the remainder of the excavated material. If only a small amount of contaminated soil is encountered, it may be drummed in 55-gallon steel drums with sealing lids. The DPW Bureau of Engineering (BOE), through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C2: Soil shall be sampled in a random and representative manner. To establish waste classification, samples shall be analyzed for total recoverable petroleum hydrocarbons (TRPH), VOCs, and total petroleum hydrocarbons (TPH) as gasoline or diesel if these fuels are found in the area, Title 22 heavy metals, reactivity (pH), corrosivity, and toxicity. The number of samples shall depend on the volume of material removed, with one sample for approximately every ton of soil. Storage space available at the site and neighborhood sensitivity shall determine the amount of soil that can be stockpiled. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C3: If VOCs are present at concentrations exceeding 50 ppm, a permit from the South Coast Air Quality Management District shall be required, which most likely shall require control of vapor, such as covering the stockpiles with plastic sheeting or wetting with water or a soap solution. The contractor shall obtain all necessary permits. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C4: During construction, suspected contaminated soil samples shall be taken to a state-certified environmental laboratory or tested in the field with a mobile lab and technician using infrared spectrometry in accordance with appropriate testing methods. Materials with elevated levels of TRPH, metals, or other regulated contaminants shall require handling by workers who have been adequately trained for health and safety aspects of hazardous material handling. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C5: Any contaminated material (soil, asphalt, railroad ballast, concrete, or debris) that is to be hauled off-site and is considered a “waste product” shall be classified as hazardous or nonhazardous waste under all criteria by both state and federal codes prior to disposal. If the waste soil or other material is determined hazardous, a hazardous waste manifest shall be prepared by the contractor or its qualified representative and the material transported to an appropriate class of facility for recycling or landfill disposal by a registered hazardous material transporter. If the soil is nonhazardous but still exceeds levels that preclude its return to the excavation, a less-costly nonhazardous transporter and soil recycling facility shall be used if no hazardous constituents are present above their respective action levels. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C6: At the start of construction, all construction contractors shall be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible. Contractors shall be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process. Furthermore, hazardous waste generated by the contractor at the site shall be disposed of in accordance with the City’s

Notification of Hazardous Substances General Conditions in the construction contract. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

Groundwater Contamination

MM-HM-C7: In the event groundwater is encountered during construction, dewatering shall be minimized to that required for removing interior or nuisance water from structures. Sampling ports shall be provided in the dewatering system. The produced water shall be required to be temporarily stored in large Baker-type tanks and analyzed by a state-certified environmental laboratory selected by the contractor. If the groundwater quality falls within guidelines established by the DPW, Bureau of Sanitation, a permit shall be obtained to discharge the water into a nearby sewer. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-HM-C8: During construction, if hydrocarbon or other water contamination precludes the measures in MM-HM-C7, the contaminated groundwater shall be treated on site (such as in an oil-water separator) or hauled off site for treatment and disposal in accordance with applicable regulations by a licensed professional. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.7.4.1 Level of Significance after Mitigation

Construction

All significant impacts related to hazards and hazardous materials during construction would be reduced to less-than-significant levels with implementation of the mitigation measures detailed above. In addition, a TMP would be implemented to ensure that significant impacts related to the provision of emergency services would not occur, as detailed in MM-TRAF-C1 in Section 3.10.

Operation

No significant operational impacts were identified and, therefore, mitigation is not required.

There would be no significant unavoidable impacts related to hazards and hazardous materials.

3.7.5 Cumulative Impacts

Within the study area, several related projects (see Table 2-5 in Chapter 2, *Project Description*) are in proximity to the Project and could have an overlapping construction schedule with the Project. These projects include the Convention Center Modernization, the Regional Connector, the Wilshire Grand Project, the *Broadway Streetscape Master Plan*, and the Figueroa Corridor Streetscape Project.

3.7.5.1 Risk of Upset/Emergency Preparedness

Generally, impacts related to hazards and hazardous materials are considered to be site specific. Construction associated with ongoing and future projects in the project area could result in cumulative impacts on human health or the environment through the release of hazardous materials encountered in soil and/or groundwater or during building demolition. Compliance with applicable hazardous waste laws and regulations, along with the mitigation measures described above in Section 3.7.4, would ensure that the Project's contribution to these potential cumulative impacts would not be considerable.

Apart from the use of chemicals for the routine cleaning and maintenance associated with operation of the MSF, any hazardous materials that would be used would comply with all applicable regulations and would not endanger inhabitants at or near the MSF.

As discussed in Section 3.10, in conjunction with other projects in the area under construction and in operation, construction of the Project would involve temporary lane closures that would reduce roadway capacity such that delay could occur. Such delays could also temporarily affect emergency service providers in the project vicinity. With the implementation of the TMP, which is discussed in Section 3.10, project construction would not have a cumulatively considerable effect on the provision of emergency services. With respect to project operation, although delays would occur as a result of implementation of the Project, the low number of substantially affected intersections (3 of 65 analyzed) and the grid layout of downtown roadways would allow emergency service providers to reach emergency sites from alternative routes and avoid intersections with long delays. Therefore, the Project would not result in a cumulatively considerable contribution to cumulative effects related to emergency services.

3.7.5.2 Human Health Hazards

The potential for related projects in the study area to result in the accidental upset or release of hazardous materials would be confined to each individual project. Furthermore, the Project would adhere to mitigation measures aimed at reducing the risk of upset or an accidental release of hazardous materials, thereby minimizing the potential for significant impacts.

None of the related projects appear to include the routine handling of substantial quantities of hazardous materials, be located on a hazardous materials site that would create a significant hazard to the public or the environment, or have a significant impact on adopted emergency response or evacuation plans; therefore, impacts from these projects related to hazardous materials would not be anticipated. Accordingly, the Project's contribution to a potentially significant cumulative effect would not be considerable because the alternatives would be constructed and operated in compliance with existing regulations and Mitigation Measures **MM-HM-C1 through MM-HM-C8**, which would reduce any potential project impacts to a less-than-significant level.

This page was intentionally left blank.

3.8 Land Use and Planning

This section provides an overview of existing land uses, land use designations, and applicable plans and policies. It also evaluates the potential for impacts on land use and planning.

3.8.1 Regulatory Setting

3.8.1.1 State Plans

California Relocation Assistance Law

The *California Relocation Assistance Law* (*California Government Code* Section 7260 et seq.) was passed by the state legislature to govern relocation activities. The California Department of Housing and Community Development (HCD) has the legal authority to administer state relocation laws and regulations. Since 1990, the state legislature has passed several amendments to the *California Relocation Assistance Law*. With these amendments, the state statutes now closely parallel federal law.

3.8.1.2 Regional Plans

Southern California Association of Governments *Regional Comprehensive Plan*

The Southern California Association of Governments (SCAG) is designated by the federal government as the Southern California region's metropolitan planning organization and transportation planning agency. SCAG's jurisdiction includes Los Angeles, Orange, Riverside, San Bernardino, Imperial, and Ventura Counties.

SCAG addresses regional planning issues through various plans and programs, including the 2008 *Regional Comprehensive Plan* (RCP). The RCP addresses regional issues, such as those related to housing, traffic/transportation, water, and air quality, and serves as an advisory document for local agencies in the Southern California region to use when preparing local plans and handling local issues of regional significance.

The RCP contains the following land use and housing, transportation, and air quality goals, which are relevant to the Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project):

- Land Use and Housing
  - Successfully integrate land and transportation planning and achieve land use and housing sustainability.
- Transportation
  - Provide a more efficient transportation system that reduces and better manages vehicle activity.
  - Provide a cleaner transportation system that minimizes air quality impacts and is energy efficient.

- Air Quality
  - Reduce emissions of criteria pollutants to attain federal air quality standards by prescribed dates and state ambient air quality standards as soon as practicable.
  - Reverse current trends in greenhouse gas (GHG) emissions to support sustainability goals for energy, water supply, agriculture, and other resource areas.
  - Expand green building practices to reduce energy-related emissions from developments and increase economic benefits to businesses and residents.

SCAG 2012–2035 *Regional Transportation Plan/Sustainable Communities Strategy*

The SCAG *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) presents the transportation vision for Los Angeles, Orange, San Bernardino, Imperial, Riverside, and Ventura Counties (SCAG 2012a). The RTP/SCS identifies priorities for transportation planning within the Southern California region, sets goals and policies, and identifies performance measures for transportation improvements to ensure that future projects are consistent with other planning goals for the area.

The 2012 RTP/SCS goals are as follows (SCAG 2012a):

- Align plan investments and policies with improving regional economic development and competitiveness.
- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.
- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of the transportation system.
- Protect the environment and health of residents by improving air quality and encouraging active transportation (i.e., non-motorized transportation, such as bicycling and walking).
- Actively encourage and create incentives for energy efficiency, where possible.
- Encourage land use and growth patterns that facilitate transit and non-motorized transportation.
- Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.

The 2016–2040 RTP/SCS was adopted on April 8, 2016.

3.8.1.3 Local Plans and Regulations

City of Los Angeles Zoning Code

The *City of Los Angeles Planning and Zoning Code* (Zoning Code) includes standards for different land uses and identifies which land uses are allowed in various zoning districts. Specifically, the Zoning Code consolidates and coordinates all existing zoning regulations and provisions to designate, regulate, and restrict locations and land uses.

City of Los Angeles General Plan

The *City of Los Angeles General Plan* is a comprehensive, long-term declaration of purposes, policies, and programs for the development of the City (Los Angeles Department of City Planning 2013c). It sets forth goals, objectives, and programs to provide a guideline for day-to-day land use policies and meet the existing and future needs and desires of the community while integrating a range of state-mandated elements (e.g., Transportation [Mobility], Noise, Safety, Housing, Conservation). In place of a Land Use Element, the City of Los Angeles includes community plans that establish policies and standards for each of the 35 geographic areas in the City. The community plans are focused on specific geographic areas of the City, locally defining the General Plan's more general citywide policies and programs. The Project is located with the *Central City Community Plan* area.

Plan for Healthy Los Angeles

The *Plan for a Healthy Los Angeles* is a new *Health and Wellness Element* of the City's General Plan (City of Los Angeles, Department of City Planning 2015). The General Plan is the blueprint for how and where the City will grow and develop, commonly known the City's planning constitution. The Plan for a Healthy Los Angeles elevates health as a priority in the City's future growth and development, establishing a policy framework to make Los Angeles a healthier place to live, work, and play.

Relevant policies are identified below.

- **Policy 5.1** (Air Pollution and Respiratory Health): Reduce air pollution from stationary and mobile sources, protect human health and welfare, and promote improved respiratory health.
- **Policy 5.7** (Land Use Planning for Public Health and GHG Emissions Reductions): Promote land use policies that reduce per capita GHG emissions, improve air quality, and decrease air pollution, especially for children, seniors, and others who are susceptible to respiratory diseases.

Mobility Plan 2035

The Los Angeles City Council adopted *Mobility Plan 2035* on January 20, 2016. *Mobility Plan 2035* updates the General Plan's Transportation Element (last updated in 1999), incorporates "Complete Streets" principles, and lays the policy foundation for how future City of Los Angeles generations will interact with streets. The "Complete Streets" concept takes into account the many community needs that streets fulfill. The plan identifies goals, objectives, policies, and action items (programs and projects that serve as guiding tools for making sound transportation decisions).

The downtown Los Angeles area currently has several bicycle facilities in the form of Class II bike lanes and Class III bike routes. In addition, future development of a network of bicycle facilities in the area is planned, as specified in *Mobility Plan 2035.* Table 3.10-3, included in Section 3.10, *Transportation and Traffic*, identifies existing and proposed bicycle facilities in the study area.

City of Los Angeles 2010 Bicycle Plan

The City of Los Angeles adopted the *2010 Bicycle Plan* (Bicycle Plan or 2010 Plan) on March 1, 2011. The purpose of the Bicycle Plan is to increase, improve, and enhance bicycling in the City, making it a safe, healthy, and enjoyable means of transportation and recreation. The Bicycle Plan, a part of the

Mobility Element, establishes policies and programs to increase the number and types of bicyclists in the City and make every street in the City a safe place to ride a bicycle. The Bicycle Plan intends to implement a network of interconnected bikeways within the downtown area to link bicyclists to employment, retail, residential, civic, cultural, and recreational destinations. According to the Bicycle Plan, downtown bikeways should be integrated with the existing Downtown Street Standards.

The following policies and objectives of the Bicycle Plan would be applicable to the Project:

- **Policy 1.1.6:** Increase the number of bicycle lanes and/or improve the quality of the street right-of-way for bicyclists.
- **Policy 1.1.7:** Increase the number of bicycle lanes.
- **Policy 1.1.8:** Require a public hearing for the proposed removal of an existing or designated bicycle lane or path.
- **Objective 1.3:** Expand bicyclists' range and mobility options through the integration of bicycling into the region's transit system.
- **Policy 1.3.2:** Maximize bicycle amenities at transit stops and stations.
- **Policy 1.3.4:** Accommodate bicycles on transit vehicles and taxis.

Citywide General Plan Framework

The General Plan *Framework Element* (2001) is a strategy for long-term growth, which sets forth a citywide context to guide the update of community plan and citywide elements. It defines citywide policies that will be implemented through subsequent amendments of the City's community plans, zoning ordinances, and other pertinent programs.

The Framework Element designates the entire *Central City Community Plan* area as Downtown Center.

The following objectives and policies would be applicable to the Project:

- **Land Use Policy 3.1.2:** Allow for the provision of sufficient public infrastructure and services to support the projected needs of the city's population and businesses within the patterns of use established in the community plans, as guided by the Framework Citywide Long-Range Land Use Diagram.
- **Land Use Objective 3.2:** Provide for the spatial distribution of development that promotes an improved quality of life by facilitating a reduction of vehicular trips, vehicle miles traveled, and air pollution.
- **Land Use Policy 3.2.1:** Provide a pattern of development consisting of distinct districts, centers, boulevards, and neighborhoods that are differentiated by their functional role, scale, and character. This shall be accomplished by considering factors such as the existing concentrations of use, community-oriented activity centers that currently or potentially service adjacent neighborhoods, and existing or potential public transit corridors and stations.
- **Land Use Objective 3.3:** Accommodate projected population and employment growth within the city and each community plan area and plan for the provision of adequate supporting transportation and utility infrastructure and public services.

- **Land Use Objective 3.11:** Provide for the continuation and expansion of government, business, cultural, entertainment, visitor-serving, housing, industrial, transportation, and supporting uses and similar functions at a scale and intensity that distinguishes and uniquely identifies the Downtown Center.

Central City Community Plan

The *Central City Community Plan* (2003) area is bounded by Sunset Boulevard/Cesar Chavez Avenue on the north, the Santa Monica Freeway (Interstate 10) on the south, the Harbor Freeway (Interstate 110) on the west, and Alameda Street on the east. It is bordered by the communities of Central City North, Silver Lake-Echo Park, Westlake, Southeast, and South Central Los Angeles. Because the project area is the governmental, financial, and the industrial hub of Los Angeles, land is dedicated primarily to these uses, though there has been an increasing amount of residential development in the downtown area in recent years.

The *Central City Community Plan* promotes an arrangement of land use, infrastructure, and services to enhance the economic, social, and physical health, safety, welfare, and convenience of the people who live, work, and invest in the community (City of Los Angeles 2009b). Chapter V of the *Central City Community Plan* outlines urban design policies and guidance for the *Central City Community Plan* area. The plan states that a primary objective is the development of a street hierarchy to serve transit, traffic, pedestrian, open space, and truck access needs in a coordinated manner (*Street Hierarchy/Standards Element* of Chapter V). Under the *Pedestrian Linkages Element* of Chapter V, one of the objectives is to link transit and pedestrian districts in historic downtown Los Angeles. Angels Walk, a self-guided walking trail developed by Angels Walk LA, has been implemented as a result of community plan policies regarding pedestrian linkages.

The *Citywide General Plan Framework*, an element of the General Plan, designates the entire *Central City Community Plan* area as a Downtown Center. Policies and strategies aimed at enhancing and revitalizing this area have produced two complementary visions: (1) The *Downtown Strategic Plan*, adopted as the guiding vision, direction, and framework for the future of downtown (Central City), and (2) the *Los Angeles Civic Center Shared Facilities and Enhancement Plan* (Ten-Minute Diamond), which focuses specifically on the enhancement of civic functions.

Applicable policies and objectives from the *Central City Community Plan* are the following:

- **Policy 4-2.1:** To foster physical and visual links between a variety of open spaces and public spaces downtown.
- **Policy 4-4.1:** Improve downtown's pedestrian environment in recognition of its important role in the efficiency of downtown's transportation and circulation systems and the quality of life for its residents, workers, and visitors.
- **Objective 10-1:** To ensure that the arts, culture, and architecturally significant buildings remain central to the further development of downtown and clearly discernible and accessible to all citizens in and visitors to Los Angeles.
  - **Policy 10-1.4:** Ensure that the downtown circulation system serves the existing arts and cultural facilities with ease of accessibility and connections.
  - **Objective 11-1:** To keep downtown as the focal point of the regional mobility system, accommodating internal access and mobility needs as well.

- **Objective 11-3:** To provide an internal circulation system with a focus of connecting specific pairs of activity centers to a system that provides greater geographic coverage of downtown, thus giving the downtown traveler more choices and more flexibility.
- **Program:** Support plans for a downtown circulator or trolley that connects downtown districts and activity centers, improving internal circulation and enhancing the character and identity of the downtown by harkening to the hallmarks of the city's mass transit history, such as the "Red Car."
- **Urban Design:** Support and implement the Bringing Back Broadway Initiative to revitalize Broadway as a vibrant entertainment and cultural destination for businesses, pedestrians, transit users, shoppers, visitors, residents.
- **Urban Design:** Support implementation of a streetcar system to serve and connect Broadway and the Historic Core with downtown destinations.

City of Los Angeles Downtown Design Guide

The *Downtown Design Guide: Design for a Livable Downtown* is an appendix to the *Central City Community Plan*. The *Downtown Design Guide* is an interdepartmental document developed by the Department of City Planning, Community Redevelopment Agency of Los Angeles (CRA/LA), Department of Transportation, and Department of Public Works. Together with urban design, transportation, and environmental consultants, the Urban Design Studio and City Team is advancing new context-sensitive street standards that emphasize walkability, sustainability, and transit options and simple but critical urban design standards to reinforce the community character of downtown Los Angeles' many neighborhoods and districts (City of Los Angeles 2009b). Also, within the context of the *Central City Community Plan* and the *Downtown Design Guide*, several district-oriented plans and guides have been developed for several subareas within downtown. These are described below.

Bunker Hill Specific Plan

The *Bunker Hill Specific Plan* is a part of the *Central City Community Plan*. The *Bunker Hill Specific Plan* area is bounded generally by Interstate 110 on the west, 5th Street on the south, Hill Street on the east, and 1st Street on the north. The purposes and intentions of the *Bunker Hill Specific Plan* are as follows:

- Implement the *Central City Community Plan*.
- Create a mixed-use district with expanded housing opportunities and commercial retail to create a 24-hour downtown environment.
- Retain and expand the area as the primary office center for the region.
- Reinforce and enhance the district's identity as the cultural center of the region.
- Expand the economic base of the city by providing additional employment opportunities and additional revenues to the region.
- Implement design regulations that maintain a high-quality built form and encourage compatible infill development that enlivens the streets and public spaces.
- Expand, integrate, and activate a linked network of public open spaces and pedestrian pathways.

- Support the expansion of the regional transit network through an urban form and mix of land uses that support high levels of transit use.
- Create a transit-friendly environment by requiring conformance to pedestrian-oriented design guidelines that promote consistent street walls and active ground-floor uses.
- Ensure that private development implements special street standards developed for the area.
- Support the improvement of the business environment by providing an attractive public realm.
- Promote increased flexibility in the regulation of the height and bulk of buildings as well as the design of sites and public streets in order to ensure a well-planned mix of commercial and residential uses with adequate public space.

Broadway Streetscape Master Plan

The *Broadway Streetscape Master Plan* (BSMP) (City of Los Angeles 2013a) provides a vision for design improvements along Broadway, a menu of design tools, and other design criteria to aid design within individual street blocks. It presents eight overarching design principles to:

- Keep new streetscape elements simple, with clean lines and materials.
- Avoid historic recreations.
- Preserve views to key historic buildings.
- Promote clear pedestrian connections.
- Enhance the perception of public safety.
- Promote environmentally responsible design.
- Stimulate private investment.
- Create a sense of timelessness through the use of flexible and/or modular construction premised on serving current and future needs.

The BSMP also prioritizes pedestrian and public transit circulation over the private auto. Under its provisions, street curb extensions, crosswalk and street paving, transit stop locations, and all signage (including wayfinding and informational signage) require review by the Los Angeles Department of City Planning. Under the BSMP, the Los Angeles Department of Transportation (LADOT) reviews all street right-of-way changes to median strips, crosswalks, bus stop locations, directional and informational signage, bicycle facilities, and any changes to the standard LADOT menu of hardware, colors, and materials.

Broadway Theater and Entertainment District Design Guide

The Broadway Theater and Entertainment District Design Guide (Broadway Design Guide or Design Guide) provides guidelines and standards for development projects along Broadway between 2nd Street and Olympic Boulevard in downtown Los Angeles to promote and enhance the identity of the district. The relevant goals of the Broadway Design Guide are:

- Create a recognizable and attractive entertainment district on Broadway that enlivens the corridor, serves as a regional entertainment draw, and encourages the reuse of its numerous historic theaters.

- Promote land uses in Central City that will address the needs of all visitors to downtown for business, conventions, trade shows, and tourism.
- Encourage pedestrian-oriented and visitor-serving uses during the evening hours to expand activity centers within downtown and create better, safer linkages among downtown districts.
- Encourage development patterns and a mix of uses that contribute to a pedestrian-friendly environment on Broadway and promote an active street life 24 hours a day, with an emphasis on nighttime and entertainment uses for residents, workers, visitors, and tourists.
- Encourage development that contributes to the safety and comfort of downtown residents and visitors.
- Promote projects that are designed to ensure compatibility among the wide range of uses encouraged in the district and incorporate measures that help diminish noise, improve energy efficiency, and mitigate other potential impacts.

Los Angeles Civic Center Shared Facilities Enhancement Plan

The Los Angeles Civic Center Authority re-convened in 1995 under leadership of the representatives of the local City Council and County Board of Supervisors to consider and discuss the appropriate role and future development of the Los Angeles Civic Center (American Society of Landscape Architects 2003). One of the first actions of the authority was to charge a public/private planning team with the creation of the *Los Angeles Civic Center Shared Facilities and Enhancement Plan* to guide urban development in the heart of the City for the next 20 years. The focus of the plan was on sharing government facilities (at the city, county, state, and federal levels), reducing costs, and restoring the heart of the City as a full and active "civic" center, not just a government center.

Redevelopment Plan for the City Center Redevelopment Plan

The *Redevelopment Plan for the City Center Redevelopment Plan* was adopted by CRA/LA in May 2002 (CRA/LA 2002). Relevant objectives are:

- To further the development of downtown as the major center of the Los Angeles metropolitan region, within the context of the Los Angeles General Plan, as envisioned by the General Plan Framework, Concept Plan, portions of the City-wide Plan, the Central City Community Plan, and the Downtown Strategic Plan.
- To create a modern, efficient, and balanced urban environment for people, including a full range of around-the-clock activities and uses, such as recreation, sports, entertainment, and housing.
- To create a symbol of pride and identity that gives the Central City a strong image as the major center of the Los Angeles region.
- To facilitate the development of an integrated transportation system that will allow for the efficient movement of people and goods into, through, and out of the Central City.
- To provide the public and social services and facilities necessary to address the needs of the various social, medical, and economic problems of Central City residents and minimize the overconcentration or exclusive concentration of such services within the project area.
- To establish an atmosphere of cooperation among residents, workers, developers, businesses, special interest groups, and public agencies in the implementation of this plan.

Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area

CRA/LA studied the feasibility of bringing back Los Angeles streetcar services as part of the overall redevelopment strategy for the downtown area (CRA/LA 2006). The report, *Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area*, summarized the analyses conducted on various alignment concepts and the outreach efforts involved in determining the feasibility of resurrecting the historic downtown Los Angeles streetcar.

Based on discussions with community stakeholders, agencies, and elected officials, several initial goals and objectives were identified:

- Develop a system to support both visitors and residents.
- Develop a cost-effective system.
- Support local plans.
- Allow for service integration.
- Involve local citizens and policy-makers.
- Pay homage to the Red and Yellow Car systems.

Downtown Street Standards

The Los Angeles City Council adopted the City of Los Angeles Downtown Street Standards in April 2009. The Downtown Street Standards update the *Central City Community Plan* street designations by basing the standards on a more comprehensive street hierarchy that balances traffic flow with other equally important functions of the street, including pedestrian needs and environments, public transit routes and stops, bicycle routes, historic districts with fixed building street walls, the public face and transitional "front yard" of businesses, and linear open space considerations. The Downtown Street Standards establish future curb lines and property lines for all downtown streets and, in some locations, additional required average sidewalk easements. The Downtown Street Standards consist of a series of street cross sections, which are specific to each street or street segment.

Los Angeles Conservancy Historic Downtown Los Angeles Design Guidelines

In addition to the design guidelines adopted by the Los Angeles City Council, the independent Los Angeles Conservancy, in partnership with the Downtown Center, Historic Core, and Fashion District Business Improvement Districts (BIDs), prepared the *Historic Downtown Los Angeles Design Guidelines* in July 2002. These guidelines describe how alterations and enhancements to buildings within historic downtown can and should be designed so that they reinforce the area's historic environment. The design guidelines are tools to enhance the physical and visual quality of the district and reinforce its historic and urban character. They provide guidance about compatible storefront and signage design, repair and maintenance of older buildings, renovation that highlights historic features, and sensitivity to these considerations that should be observed by new construction.

Los Angeles Sports and Entertainment District Specific Plan

The City Council established the *Los Angeles Sports and Entertainment District (LASED) Specific Plan* in 2001, and subsequently amended it in 2010, for the areas bounded generally by Olympic Boulevard on the north, Flower Street on the east, Pico Boulevard on the south, and Interstate 110 on the west. The district also includes the area north of Olympic Boulevard between Georgia and Francisco Streets. The LASED specifies general plan regulatory controls for this area, which are in addition to those set forth in the planning and zoning provisions of the *Los Angeles Municipal Code* (LAMC). Wherever the specific plan contains provisions that establish regulations different from the LAMC, the specific plan prevails and supersedes the provisions of the LAMC and those of relevant ordinances. The purpose of the plan is to provide continued and expanded improvements to the plan area as a major entertainment/mixed-use development and ensure orderly infill of public facilities consistent with the intensity and design of the existing district.

Convention and Event Center Specific Plan

The *Convention and Event Center Specific Plan* is also a part of the *Central City Community Plan*. The plan area is generally bounded by Chick Hearn Court on the north, Figueroa Street on the east, Venice Boulevard on the south, and Interstate 110 on the west. The purpose of the plan is to enhance the area, which is a major convention and event center; ensure orderly infill of public facilities, consistent with the intensity and design of the existing district; and provide public gathering places and lively, pedestrian-friendly environment through the establishment of unique streetscape and open space plans.

3.8.2 Environmental Setting/Affected Environment

3.8.2.1 Project Study Area

The project study area generally encompasses the area bounded by Cesar Chavez Avenue on the north, Interstate 10 on the south, Interstate 110 on the west, and Alameda Street on the east. This area is an urban environment where major transportation facilities and dense development exists.

Downtown Districts

The project study area is located within the *Central City Community Plan* area. The *Central City Community Plan* identifies nine districts: Civic Center, Bunker Hill, Financial Core, South Park, Convention Center/Arena, Center City/Historic Core, Central City East, South Markets, and Little Tokyo. As indicated in the *Central City Community Plan* and described below, district boundaries have become blurred. They overlap as land uses change over time.

Civic Center

This district is located in the northern portion of the *Central City Community Plan* area. It includes several federal, state, county, and local government offices along the Civic Center Mall, north of 1st Street, and generally from the Harbor Freeway to Alameda Street. The district is home to the historic City Hall and the Cathedral of Our Lady of the Angels. Under the Grand Avenue Extension, the proposed streetcar would run along the southern Civic Center boundary on 1st Street.

Bunker Hill

This district is located in the northwestern portion of the *Central City Community Plan* area, adjacent to the Civic Center District. Adopted in 1959, the Bunker Hill Redevelopment Project was conceived as a new mixed-use development. This district includes the Museum of Contemporary Art (MOCA), Colburn School of Performing Arts, Disney Concert Hall, and the recently-opened Broad Museum. Under the Grand Avenue Extension, the proposed streetcar would run along Grand Avenue in northeastern Bunker Hill.

Financial Core

This district is located south of the Bunker Hill District, in the western portion of the *Central City Community Plan* area. The streets of this district have a varying character. This district includes high-rise office developments, including the Gas Company Tower and the Citicorp Center. The Central Library, constructed in 1926, is also located in this district. Under the two 7th Street alternatives, the proposed streetcar would run through the central Financial Core along 7th Street and Figueroa Street. Five stations are proposed along the alignment in the Financial Core: three stations along 7th Street and two stations along Figueroa Street.

South Park

This district is located east of the Convention Center/Arena District. Specifically, this district, which is generally bounded by 8th Street, Main Street, the Santa Monica Freeway, and the Harbor Freeway, includes a variety of land uses. Land uses include Grand Hope Park and multi-family residential, commercial, retail, and office uses. The district also includes hotels, restaurants, and entertainment venues. This district borders the Convention Center/Arena District. Under all four build alternatives, the proposed streetcar would run through northern South Park along 11th Street and Figueroa Street. One station would be on Figueroa Street, and two stations would be on 11th Street. Under both 9th Street alternatives, a small portion of the alignment would pass through northern South Park along 9th Street. One station would be located on 9th Street.

Convention Center/Arena

This district, which includes the Los Angeles Convention Center and Staples Center, is strategically located in the southwestern edge of the *Central City Community Plan* area, at the hub of the Harbor and Santa Monica Freeways. According to the *Central City Community Plan*, the sphere of influence of this district includes portions of the Financial Core and South Park. Under all four build alternatives, the proposed streetcar would run along Figueroa Street in the northeastern corner of the Convention Center/Arena district. One station would be located on Figueroa Street.

Center City/Historic Core

Generally, this district extends from 1st Street to approximately 11th Street between Los Angeles Street and Hill Street. This district contains some of the most historically significant buildings in the region, including nationally recognized historic theater buildings. Additionally, the southern portion of this district houses the garment district. The California Mart, located on Main Street, between 9th Street and Olympic Boulevard, is a 3-million-square-foot complex that serves the garment industry. Under all four build alternatives, the proposed streetcar would run along Broadway and along Hill Street through the Center City/Historic Core district. Nine stations are proposed along Broadway, and five along Hill Street. Under the two 9th Street alternatives, two additional stations are proposed along Hill Street.

Central City East

This district, located in the eastern portion of the *Central City Community Plan* area, contains wholesale and warehousing uses, including uses related to produce, fish, and dairy products. This district also includes social service uses and state and federal governmental agencies. The proposed streetcar would not run through the Central City East district.

South Markets

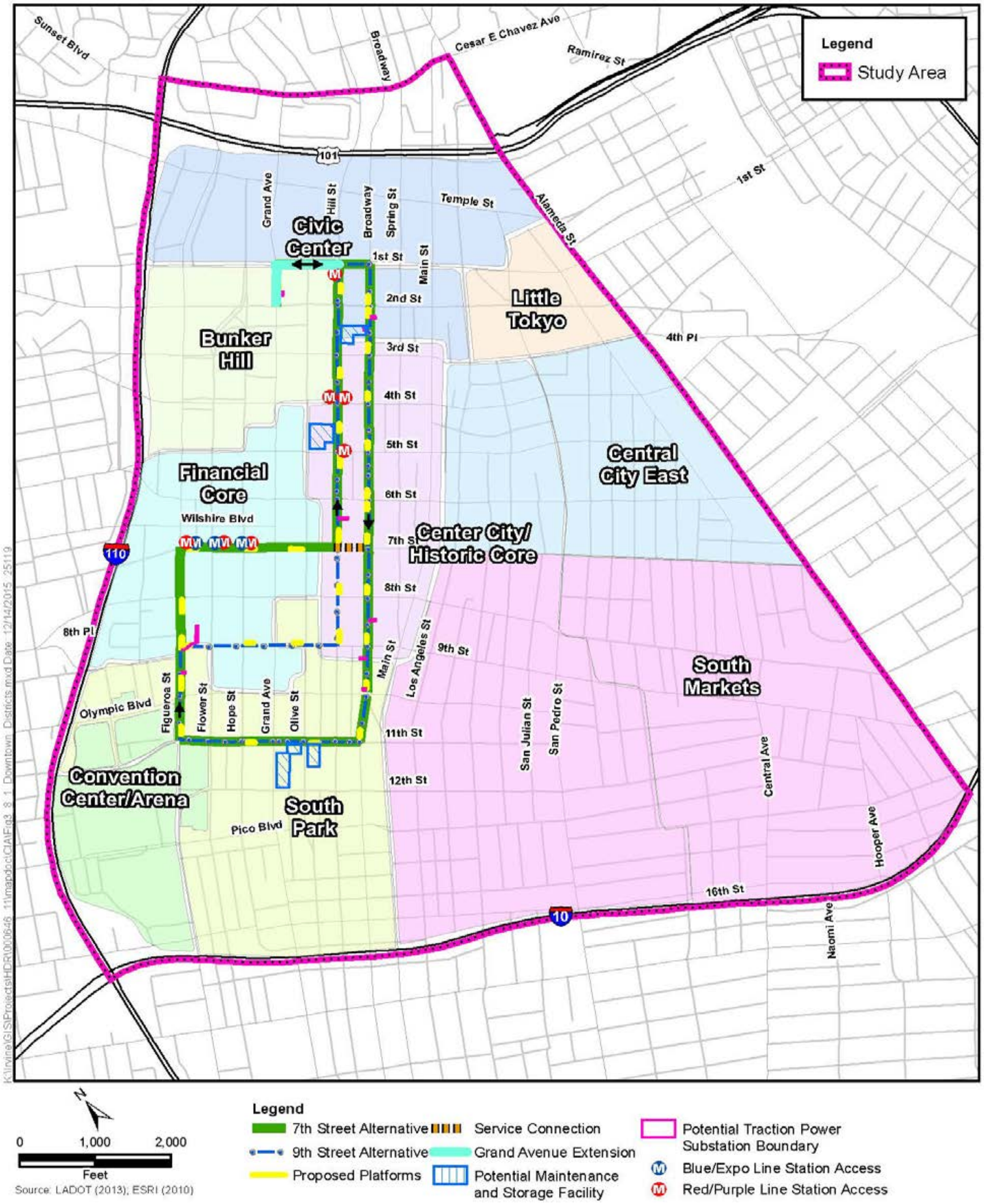
This district is located in the southern portion of the *Central City Community Plan* area. This district contains a variety of garment, retail, manufacturing, industry, and flower warehouse uses, which are located in generally low-rise buildings. The proposed streetcar would not run through the South Markets district.

Little Tokyo

This district is considered the spiritual, cultural, and symbolic center of the largest Japanese-American community in the continental United States. References to Japanese culture exist throughout the district in the form of decorative roofs, signs, garden designs, and other architectural and cultural elements. This district includes the Japanese-American National Museum, Union Center of the Arts, Hongwanji Buddhist Temple, and various multi-family residential uses. The proposed streetcar would not run through the Little Tokyo district.

Figure 3.8-1 shows the general locations of these districts in relation to the project alternatives.

Figure 3.8-1. Downtown Los Angeles Districts



This page was intentionally left blank.

3.8.2.2 Surrounding Land Uses

As shown in Figure 3.8-2, the study area contains the following general plan–designated land uses: industrial, commercial, multi-family residential, public facilities, and open space. In general, industrial land uses are located in the southeastern portion of the study area, in the South Markets District. Commercial land uses are located primarily in the central, southern, and eastern portions of the study area. In recent years, areas along the project alignment have seen a marked increase in residential and mixed-use land uses, with approximately 9,400 housing units built in downtown between 2000 and 2012. The *Adaptive Reuse Ordinance*, which was approved in 1999, has had a significant positive impact on development of residential uses because it has made it possible to provide housing units in many of downtown's existing commercial buildings. As a result, general plan land use designations for the downtown area, as depicted in Figure 3.8-2, do not always accurately reflect the actual mix of land uses within a given property. Many, if not most, of the commercial properties along the project alignment are best described as mixed use, containing both commercial and residential uses, despite their general plan single-use designation.

Within the Civic Center, many land uses are government-owned buildings that employ city, state, and federal workers. The multi-family residential areas range from the single-resident occupancy (SRO) hotels in the Central City East area to the high-rise condominiums and apartments in the South Park neighborhood. There are multi-family residential areas on Bunker Hill, adjacent to Broadway on Spring Street, and on 9th Street. Public facilities are clustered primarily in the northern part of the study area, in the Civic Center, and the southern area, which surrounds the Convention Center. The largest open spaces in the study area are Grand Park in the Civic Center, Pershing Square in the Financial District, and Spring Street Park.

Figure 3.8-3 provides a map of the zoning designations in the study area.

This page was intentionally left blank.

Figure 3.8-2. Land Uses

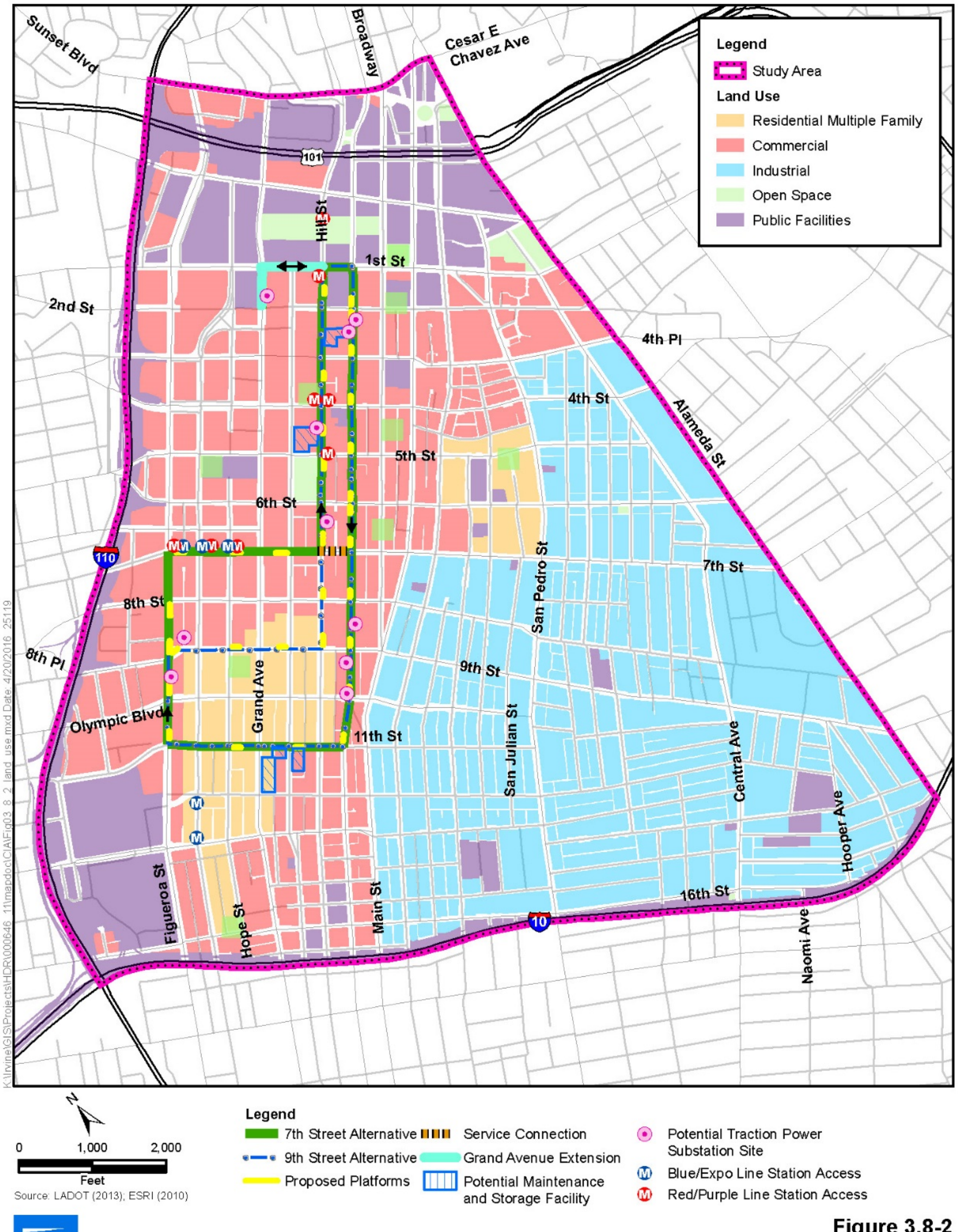


Figure 3.8-2
Study Area Land Uses
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page was intentionally left blank.

Figure 3.8-3. Zoning Designations

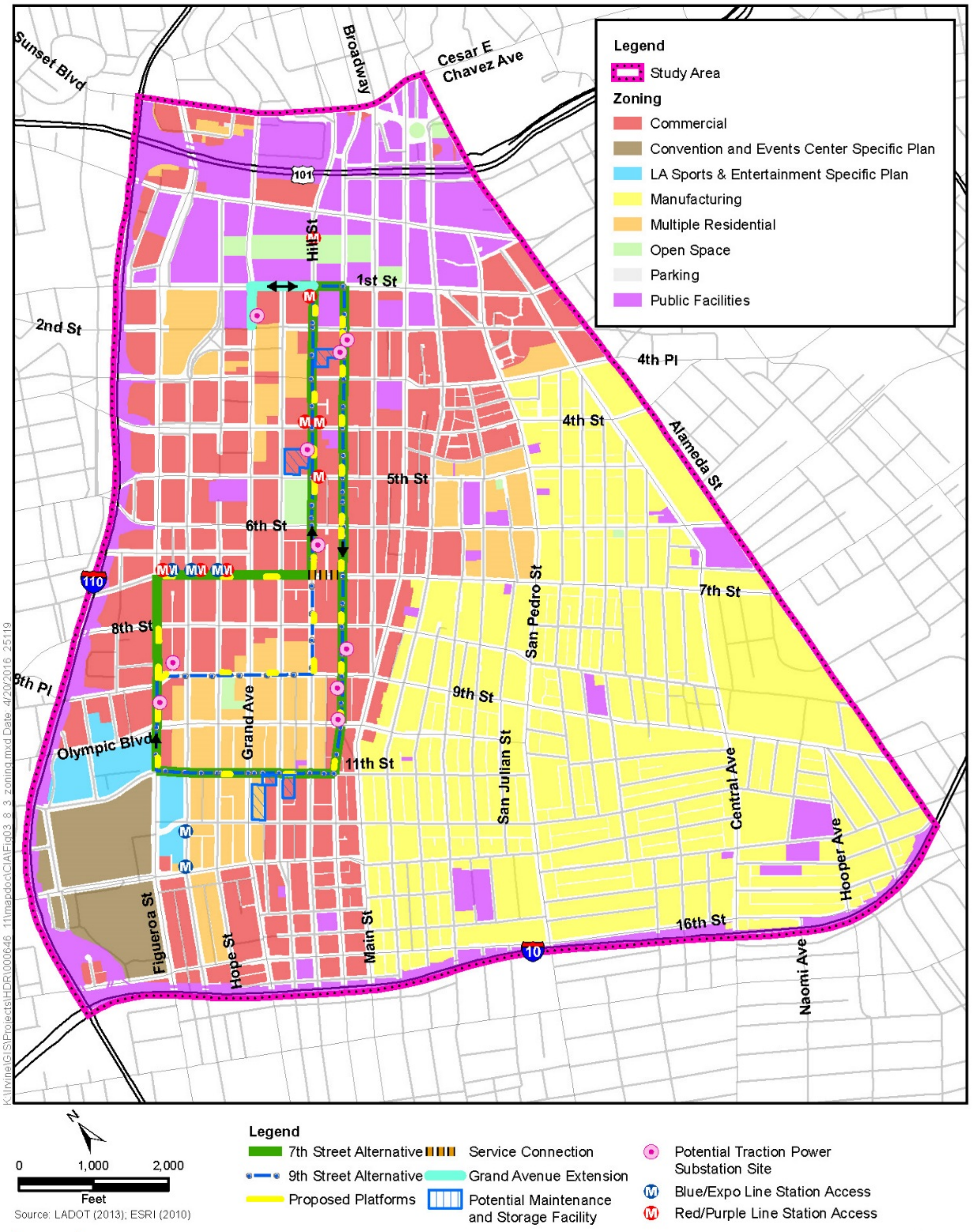


Figure 3.8-3
Study Area Zoning
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page was intentionally left blank.

3.8.3 Environmental Impact Analysis

3.8.3.1 Methodology

Potential impacts associated with the Project were identified by analyzing the relationship between the Project and both existing and planned land uses. Consistency with applicable regional and local plans and policies, including the *City of Los Angeles General Plan*, is also addressed. A variety of sources, including applicable general plans and zoning maps, were used to evaluate potential land use impacts. In the impact analysis presented below, each of the project alignment alternatives is addressed separately. Impacts associated with traction power substation (TPSS) units are addressed together because they would occur under all alternatives. Also, each of the maintenance and storage facility (MSF) sites is addressed individually.

3.8.3.2 Thresholds of Significance

For the purposes of determining the significance of potential impacts evaluated in this environmental impact report (EIR), Appendix G of the 2016 *California Environmental Quality Act* (CEQA) Statute and Guidelines and the *L.A. CEQA Thresholds Guide* (2006) are being followed. Appendix G of the 2016 CEQA Statute and Guidelines state that a project could have a significant impact if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The *L.A. CEQA Thresholds Guide* states that the determination of significance shall be made on a case-by-case basis, considering the following factors:

- Whether the proposal is inconsistent with the adopted land use/density designation in the community plan, redevelopment plan, or specific plan for the site.
- Whether the proposal is inconsistent with the general plan or adopted environmental goals or policies contained in other applicable plans.
- The extent of the area that would be affected, the nature and degree of impacts, and the type of land uses within that area.
- The extent to which existing neighborhoods, communities, or land uses would be disrupted, divided, or isolated and the duration of the disruptions.
- The number, degree, and type of secondary impacts on surrounding land uses that could result from implementation of the project.

For the purposes of this analysis, the Appendix G and *L.A. CEQA Thresholds Guide* thresholds have been organized in the land use impacts discussion as follows:

Land Use Consistency with Applicable Plans and Policies

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Appendix G)

- Whether the proposal is inconsistent with the adopted land use/density designation in the community plan, redevelopment plan, or specific plan for the site. (*L.A. CEQA Thresholds Guide*)
- Whether the proposal is inconsistent with the general plan or adopted environmental goals or policies contained in other applicable plans. (*L.A. CEQA Thresholds Guide*)

Land Use Compatibility

- Physically divide an established community. (Appendix G)
- The extent of the area that would be affected, the nature and degree of impacts, and the type of land uses within that area. (*L.A. CEQA Thresholds Guide*)
- The extent to which existing neighborhoods, communities, or land uses would be disrupted, divided, or isolated and the duration of the disruptions. (*L.A. CEQA Thresholds Guide*)
- The number, degree, and type of secondary impacts on surrounding land uses that could result from implementation of the project. (*L.A. CEQA Thresholds Guide*)

3.8.3.3 Alternative 1: No Project Alternative

Construction Impacts

Land Use Plan Consistency

No impact. No construction would occur under this alternative. Specifically, the No Project Alternative would not produce construction-period impacts that would conflict with a land use/density designation or environmental goals or policies in an adopted plan having jurisdiction over the project area.

Land Use Compatibility

No impact. Because no streetcar construction activities would occur under the No Project Alternative, no temporary impacts, such as loss of parking, access disruption to adjacent land uses, or increased noise levels, would occur that could adversely affect adjacent land uses or impair their ability to function. Similarly, because the No Project Alternative would not produce construction-period impacts, it would not physically divide an established community.

Operational Impacts

Land Use Plan Consistency

No impact. Proposed streetcar service would not be introduced under this alternative. Specifically, the No Project Alternative would not produce operational impacts that could conflict with a land use/density designation or environmental goals or policies in an adopted plan having jurisdiction over the project area.

Land Use Compatibility

No impact. Because there would be no streetcar improvements operating on a daily basis under the No Project Alternative (e.g., streetcar operations, TPSS units functioning, or MSF site functioning), there would be no permanent effects (e.g., noise, traffic, etc.) occurring that could adversely affect adjacent land uses or impair their ability to function. Similarly, the No Project Alternative would not produce operational impacts that would physically divide an established community.

3.8.3.4 Alternative 2: 7th Street with Grand Avenue Extension

Construction Impacts

Land Use Plan Consistency

Less-than-significant impact. Proposed construction activities would include pavement removal, utility relocation, excavation, construction of track drains, installation of concrete track slab and rails, construction of station platforms, installation of special track work, reconstruction of ramps and sidewalks, paving, and striping. Temporary laydown and storage areas for construction would be established near the project alignment for storage of equipment and materials. Construction activities would generally occur with the public street rights-of-way (with the exception of the TPSSs, MSF, and laydown/storage areas) and would follow all applicable City of Los Angeles regulations and guidelines pertaining to construction, which would minimize the potential for adverse impacts and conflicts with land use plan policies. Construction impacts would be temporary and short term; they would occur in a sequential manner along the project alignment. Because the impacts would be temporary, they would not affect permanent changes that would alter or compromise the plans, policies, or regulations governing the project area. Some portions of existing and planned bicycle lanes would be closed while construction is occurring; those locations would be restored to service as construction moves on to the next location. Construction contractors will be required to coordinate with LADOT to provide detour routes (to the extent practicable) and notify bicyclists of the construction schedule. Bicycle travel would be maintained during the construction period to the extent practicable, consistent with maintaining public safety. Consequently, conflicts with applicable land use policies are not expected to occur during the construction period.

Land Use Compatibility

Less-than-significant impact. The 3.8-mile project alignment would be located within an area dominated by commercial land uses. With the exception of the MSF and the TPSS sites, construction of the build alternatives would not require the acquisition of additional rights-of-way for the streetcar route, and no residential uses would be removed under this alternative. Therefore, proposed construction would not divide, isolate, or substantially disrupt a community or neighborhood. Additionally, most construction would take place within the existing public right-of-way, and access to surrounding land uses would be maintained throughout the construction period. Although construction activities could result in air quality, visual, noise, and traffic impacts and displace on-street parking, which could adversely affect adjacent land uses, proposed construction work would be temporary, affecting specific locations for limited periods of time. It would not be so severe that the ongoing functioning of adjacent land uses could not be maintained. As discussed, bicycle travel would be maintained during the construction period in open traffic lanes or, in some cases, through the use of temporary detours, where practicable. Because bicycle and pedestrian facilities in the vicinity of the Alternative 2 site would remain generally usable during the construction period, impacts would be less than significant. During final design, site- and street-specific Worksite Traffic Control Plans would be developed in cooperation with LADOT to accommodate required pedestrian, bicycle, and traffic movements.

A loss of on-street parking would occur during construction; however, the loss would be temporary. Parking spaces not required for the permanent Project would be restored once construction activities move out of the affected block. Temporary impairment of access to businesses located along the alignment could occur but would also be temporary. Access would be restored as construction proceeds. For those reasons, construction of the Project would not divide, isolate, or substantially disrupt existing land uses. Additionally, Regulatory Compliance Measure (RCM) **RCM-LU-C1** is proposed to address site-specific effects on businesses located along the alignment. Impacts would be less than significant.

Operational Impacts

Land Use Plan Consistency

Less-than-significant impact. Alternative 2 would, in most cases, be directly supportive of regional or local plans, policies, or regulations. The Project would, at a minimum, not be in conflict with such plans, policies, and regulations for the reasons stated below.

SCAG Regional Comprehensive Plan: Alternative 2 would assist the RCP in achieving its objective to integrate land and transportation planning by restoring a transportation mode to downtown that formerly provided a direct linkage between areas and that would again provide an alternative mode of travel within downtown and directly link residential areas with employment and other opportunities within downtown. Alternative 2 would provide a mode of travel within downtown that would make it possible to avoid using the automobile for short trips. Because the streetcar would be electrically powered, it would also contribute to reducing air quality impacts and energy use. As a result, Alternative 2 would assist in reducing criteria pollutants and GHGs and meeting other sustainability objectives. Also, the MSF would be designed to be in conformance with current green building standards and practices, which would further contribute to the achievement of RCP objectives (see also Section 3.8.1.2, *Regional Plans*).

SCAG 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Alternative 2 would contribute to the goal of maximizing regional mobility and accessibility insofar as the downtown component of that goal is concerned by providing an alternative travel mode that otherwise would not be available. Operation of the streetcar route would be managed to ensure safe interaction among streetcar operations, use of the local street system by autos and buses, and shared use of street rights-of-way with pedestrians and bicycles. By adding another travel mode, Alternative 2 would contribute to maximizing the productivity of the downtown transportation system.

City of Los Angeles Zoning Code: The MSF sites are evaluated in the context of the City's Zoning Code in Section 3.8.1.3, *Local Plans and Regulations*.

Citywide General Plan Framework: Alternative 2 would support objectives related to downtown circulation needs and provide an alternative mode of transportation. Alternative 2 would provide additional transportation infrastructure and services to support the projected needs of downtown populations and businesses. Specifically, Alternative 2 would support downtown circulation needs for existing and future residents, businesses, and visitors and would provide an alternative mode of transportation that would reduce the number of vehicle miles traveled in the study area.

Central City Community Plan: Alternative 2 would not conflict with objectives related to the downtown circulation system. Alternative 2 would make downtown more accessible to residents and visitors alike. It would provide additional transit accessibility to the arts and cultural venues along Grand Avenue and the theaters along Broadway. Alternative 2 would augment downtown circulator service by connecting downtown districts and activity centers, improving internal circulation, and enhancing the character and identity of the downtown by restoring a component of the City's mass transit history. One of the primary objectives of the plan is to develop a street hierarchy to serve transit, traffic, pedestrian, open space, and truck access needs. The Project would directly contribute to this objective because it would offer a new transit mode to downtown and help to define the street hierarchy.

Mobility Plan 2035: Alternative 2 would not conflict with the purpose and goals of *Mobility Plan 2035* because the introduction of streetcar service would support the multi-modal objectives of *Mobility Plan 2035*. Implementation of Alternative 2 would provide downtown residents and visitors with an alternative to the automobile while supporting the repurposing of streets. The Project would be developed and designed to be fully integrated with all modes addressed in the plan, including mixed traffic flow, pedestrian movement and safety, and bicycle flow and safety.

City of Los Angeles Downtown Design Guide: Alternative 2 would not conflict with the *City of Los Angeles Downtown Design Guide* because it would comply with all applicable requirements and specifications. Specifically, implementation of Alternative 2 would be done so as to be integrated into the comprehensive context-sensitive street standards (i.e., where stations are placed, how pedestrian access will be provided, how safety of movement would be maintained among the various modes operating on the street system). Regulatory Compliance Measure **RCM-LU-O1** would ensure that the project design would not conflict with applicable design guidelines.

Bunker Hill Specific Plan: Alternative 2 would not conflict with the *Bunker Hill Specific Plan* because it would be required to comply with all applicable requirements and specifications. Specifically, implementation of Alternative 2 would help create a transit-friendly environment and would comply with land use regulations and design specifications included in the *Bunker Hill Specific Plan*. The Project would respond to the stated purposes and intentions of the plan. In particular, the Project would contribute to the expansion of the transit network in a manner that would take into consideration the urban form and mix of land uses that it serves, one of the stated purposes of the *Bunker Hill Specific Plan*.

Broadway Streetscape Master Plan: Alternative 2 would not conflict with the BSMP in that the plan supports bringing streetcar service back to the downtown area and Broadway in particular. The BSMP's focus is to create a multi-modal, pedestrian-focused street that would support the historic theater district. In this respect, implementation of Alternative 2 would help achieve this focus of the plan by restoring an historic transportation mode that was an integral part of the area's overall context. The Project would coordinate its streetscape components to be consistent with the simple, clean-lines objective that the plan proposes. It would not recreate an historic feature but rather restore the function that has been missing for many years. No views of key historic buildings would be impaired. Clear, understandable pedestrian connections would be apparent with the streetcar signage. Because the streetcar would be electrically powered, it would promote environmental responsibility. The Project would also be operated within the Broadway street cross section as it is currently delineated. Maintaining turn lanes at those intersections on Broadway within the BSMP is consistent with the current definition of the master plan, which allows for site-specific interpretation of the plan's objectives. Alternative 2 would not conflict with the BSMP but, rather, would support it in many respects.

Broadway Theater and Entertainment District Design Guide: Alternative 2 would not conflict with the design guidelines and standards that are intended to enhance the identity of the district. One of the objectives of the Project is to assist in recreating a recognizable and attractive entertainment district on Broadway that enlivens the corridor. Alternative 2 would offer increased opportunities for using the streetcar to gain access to multiple destinations and would be consistent with the goal of encouraging pedestrian-oriented and visitor-serving uses. The Project would encourage pedestrian-oriented and visitor-serving uses during the evening hours to expand activity centers within downtown and create better, safer linkages among downtown districts.

Downtown Street Standards: Implementation of Alternative 2 would provide another travel mode within downtown and therefore would not conflict with the purpose of the Downtown Street Standards, specifically the concept of updating street designations based on a more comprehensive street hierarchy that balances traffic flow with other equally important functions of the street, including pedestrian needs and public transit. Development of the Project is being managed in close consultation with LADOT staff, and therefore, adherence to and recognition of established street standards would be maintained as the design of the Project moves forward.

City of Los Angeles 2010 Bicycle Plan: Alternative 2 could interfere with the implementation of planned bike facilities or lanes in the study area. The Project could also result in temporary accessibility interruptions during the construction period, as previously described. Proposed operation of the streetcar could conflict, therefore, with the Bicycle Plan. Streetcar vehicles would be equipped with audible warning devices, a train-to-wayside communication (TWC) system, and safety and wayfinding signs. Furthermore, operators would undergo extensive training and continuing evaluation to ensure safety. The City would also develop transit safety programs, with the goal of raising streetcar safety awareness in the community. In locations where travel lanes would be shared among motor vehicles, streetcars, and bicycles, special signage would be provided to make bicyclist aware of how to travel safely, and additional measures would be in place to provide a safe riding environment (see also Section 3.10, *Transportation and Traffic*).

Historic Downtown Design Guidelines: Alternative 2 would not conflict with *the Los Angeles Conservancy Historic Downtown Design Guidelines* because the portion of the Project within the boundaries of the guidelines would be required to adhere to design requirements that would apply to the placement, design, and functioning of the various elements of the streetcar, including the design and relationship of overhead contact system (OCS) poles to adjacent buildings and street furniture such as streetcar platforms and other components of the system. Where project improvements could result in alterations to historic features, such alterations would be avoided or conducted so as to be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Because the alternatives would adhere to the requirements of the *Historic Downtown Design Guidelines*, where applicable, and the guidelines are premised on the eventual reintroduction of streetcar service, Alternative 2 would therefore not conflict with design guidelines for the Historic Core area.

Los Angeles Sports and Entertainment District Specific Plan: Alternative 2 would not conflict with the LASED Specific Plan because it would be subject to applicable requirements of the specific plan. The Project would provide several stops within the Specific Plan area and connect the area to other parts of downtown. The Project would provide an alternative mode of transportation within the downtown area for visitors and residents and would encourage gathering in public places, including the attractions in the specific plan area.

Convention and Event Center Specific Plan: For the same reasons stated above for the LASED Specific Plan, Alternative 2 would not conflict with the *Convention and Event Center Specific Plan*. Alternative 2 would also be subject to applicable requirements of the specific plan and would provide an alternative mode of transportation within the downtown area for visitors and residents.

Table 3.8-1 identifies additional detail regarding the applicable goals, policies, and objectives of the above stated plans and whether the Project would conflict with their respective goals, policies, and objectives. As shown in Table 3.8-1, the Project would not conflict with most of the applicable goals, policies, and objectives included in the *City of Los Angeles General Plan* and applicable specific plans and design guidelines. The Project would provide additional transportation infrastructure and services to support the projected needs of downtown populations and businesses and would make downtown more accessible to residents and visitors alike. It would provide additional transit accessibility to the arts and cultural venues along Grand Avenue and the theaters along Broadway. The Project would be developed and designed to be fully integrated with all modes addressed in the *Mobility Plan 2035*, including mixed traffic flow, pedestrian movement and safety, and bicycle flow and safety. Most potentially significant impacts would be reduced to less-than-significant levels with the implementation of mitigation measures.

Land Use Compatibility

Less-than-significant impact. Alternative 2 would improve circulation within and among the different districts located in the Central City Community Planning area, including the Civic Center, Bunker Hill, Financial Core, South Park, and the Center City/Historic Core districts of downtown Los Angeles. Additionally, the streetcar route that would be constructed under Alternative 2 would operate within existing street rights-of-way that would be shared with motor vehicles and pedestrians. Therefore, operation of the streetcar system under Alternative 2 would not create a physical barrier that would physically divide or isolate a community or neighborhood.

It should be noted that streetcars historically operated along the streets in the study area, and the restoration of streetcar service that would occur under this alternative would not visually diminish the cohesive nature of the districts, as conveyed by architectural style, materials, setbacks, and storefronts, because overhead wires, poles, street lamps, and traffic signals have been and are part of the historic and current setting. Proposed restoration of streetcar service would be consistent with the development that occurred during the period when streetcars once operated on the streets in downtown Los Angeles and that still exists today. This alternative would be compatible with existing land uses along the alignment, given proposed streetcar services would be introduced along existing streets. Operation of the streetcar, however, could result in some operational impacts that could affect adjacent or nearby land uses. These impacts would be related to aesthetics, noise, traffic and parking. However, as demonstrated in Sections 3.1, *Aesthetics*, 3.3, *Cultural Resources*, 3.9, *Noise and Vibration,* and 3.10, *Transportation and Traffic*, less-than-significant impacts, with mitigation required in some cases, have been determined for each of these topics.

Table 3.8-1. Project Land Use Plan Conflicts

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
Plan for a Healthy Los Angeles			
Policy 5.1 (Air pollution and Respiratory Health)	*Reduce air pollution from stationary and mobile sources; protect human health and welfare and promote improved respiratory health.*	No	Implementation of Mitigation Measure **MM-AQ-C1** would reduce impacts that may result from local construction emissions associated with the Project to less-than-significant levels. No significant operational air quality impacts would occur under the Project. See Section 3.2, *Air Quality*, for further discussion of this topic.
Policy 5.7 (Land use planning for public health and GHG emissions reduction)	*Promote land use policies that reduce per capita greenhouse gas emissions, result in improved air quality and decreased air pollution, especially for children, seniors and others susceptible to respiratory diseases.*	No	The Project is anticipated to result in a daily reduction of project vicinity vehicle miles traveled (VMT) that would be due to diversion of private automobile trips that would occur under the Project. The Project is anticipated to result in a net decrease in GHG emissions under the build alternatives compared to the No Project Alternative. Under these ridership conditions, the net Project's GHG emissions would be well below the SCAQMD significance threshold of 10,000 MTY CO_2e for industrial uses and the proposed SCAQMD draft screening significance threshold of 3,000 MTY. Thus, the potential GHG impacts of the Project would be less than significant. See justification discussed under Policy 5.1 regarding air quality.
Framework Element			
Policy 3.9.4	*Promote the development of para-transit or other local shuttle system and bicycle amenities that provide access for residents of adjacent neighborhoods, where appropriate and feasible.*	No	Proposed streetcar service would provide a circulator system for residents, workers, and visitors in downtown Los Angeles. The proposed configuration of track and roadway lanes under the Project would permit a mixed flow of vehicles and a fleet of electrically powered streetcars while also accounting for pedestrians and cyclists using the roadway. Table 3.10-3 in Section 3.10, *Transportation and Traffic,* shows the existing and proposed bicycle facilities that would interface with the Project, either by sharing or crossing its alignment.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
Policy 9.3.1	*Reduce the amount of hazardous substances and the total amount of flow entering the wastewater system.*	No	Implementation of Mitigation Measures **MM-HM-C1** through **MM-HM-C8** would lessen the impacts of hazardous materials that otherwise could result under the Project. With implementation of these mitigation measures, impacts would be less than significant. See Section 3.7, *Hazards and Hazardous Materials*, for further discussion. Additionally, as described in Chapter 5, *Other Environmental Considerations,* a Standard Urban Stormwater Mitigation Plan (SUSMP) would be implemented and would ensure that potential impacts associated with water quality, such as runoff resulting from vehicle cleaning and maintenance, would be less than significant because site-specific requirements would be imposed governing the handling and treatment of runoff from activities occurring within the MSF. The MSF is the only component of the Project that would require water and wastewater service for bathroom facilities and cleaning activities. All wastewater would be controlled and managed on-site before being conveyed to the sewer system.
Policy 9.40.4	*Establish regulations and standards which eliminate the adverse impacts due to light pollution, light trespass, and glare for the area lighting of rail yards, transit yards, trucking facilities, and similar facilities.*	No	Construction and operation of the Project would not result in significant light and glare impacts. Nonetheless, Section 3.1, *Aesthetics*, includes several mitigation measures to ensure that the Project is built with sensitivity to the visual environment. See Section 3.1 for Mitigation Measures **MM-AES-C1** through **MM-AES-C3** and **MM-AES-O1 through MM-AES-O3** and for further discussion of light and glare.
Air Quality Element			
Goal 1	*Good air quality and mobility in an environment of continued population growth and healthy economic structure.*	No	As stated in Chapter 2, *Project Description*, the primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. Additionally, as described in Section 3.2, *Air Quality*, implementation of Mitigation Measure **MM-AQ-C1** would reduce impacts that may result from local construction emissions associated with the Project to less-than-significant levels. No

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			operational air quality impacts would occur.
Objective 1.1	*It is the objective of the City of Los Angeles to reduce air pollutants consistent with the Regional Air Quality Management Plan (AQMP), increase traffic mobility, and sustain economic growth citywide.*	No	As stated in Section 3.10, *Transportation and Traffic*, the Project would be consistent with the *City of Los Angeles General Plan*. Because the Project would be consistent with the General Plan, pursuant to SCAQMD guidelines, the Project would be considered to be consistent with the region's AQMP. As such, project-related emissions are accounted for in the AQMP, which is crafted to bring the Basin into attainment for all criteria pollutants.[1] The primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles.
Objective 1.3	*It is the objective of the City of Los Angeles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites.*	No	Localized emissions of NO_X, PM10, and PM2.5 during construction are predicted to exceed SCAQMD significance thresholds without incorporation of mitigation measures. However, as described in Section 3.2, *Air Quality*, Mitigation Measure **MM-AQ-C1** would reduce these impacts to less-than-significant levels.
Policy 1.3.1	*Minimize particulate emissions from construction sites.*	No	See Justification for Objective 1.3 of the Air Quality Element.
Goal 2	*Less reliance on single-occupant vehicles with fewer commute and non-work trips.*	No	Operation of the Project would provide an additional public transit option in the study area, with an emphasis on short-distance trips between the various districts of downtown Los Angeles. Project operation would supplement existing services transit services. Underground and grade-separated services, such as the existing Red, Purple, Blue, and Expo lines would not be affected. Bus service along the project alignment would continue to operate.

[1] State CEQA Guidelines Section 15064(h)(3) states that "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	***Description***	**Conflict?***	**Justification***
Objective 2.1	*It is the objective of the City of Los Angeles to reduce work trips as a step towards attaining trip reduction objectives necessary to achieve regional air quality goals.*	No	The Project would provide transit service for internal downtown trips. Work trips associated with the MSF would minimally increase as a result of the Project. See Section 3.2, *Air Quality*, and Section 3.10, *Transportation and Traffic*, for further discussion of air quality and traffic impacts anticipated to occur under the Project.
Policy 2.1.1	*Utilize compressed work weeks and flextime, telecommuting, carpooling, vanpooling, public transit, and improve walking/ bicycling related facilities in order to reduce Vehicle Trips and/or Vehicle Miles Traveled (VMT) as an employer and encourage the private sector to do the same to reduce work trips and traffic congestion.*	No	See Justification to Objective 2.1 above.
Objective 3.1	*It is the objective of the City of Los Angeles to increase the portion of work trips made by transit to levels that are consistent with the goals of the Air Quality Management Plan and the Congestion Management Plan.*	No	See Justification to Objective 2.1 above. See Section 3.2, *Air Quality*, and Section 3.10, *Transportation and Traffic*, for further discussion of the Project's consistency with the *Air Quality Management Plan* and the *Congestion Management Plan*.
Policy 3.1.2	*Address public safety concerns as part of transit improvement programs, such as guarded and/or well lit transit facilities, emergency equipment and safe-driving training for operators, in order to increase transit ridership.*	No	As described in Section 3.1, *Aesthetics*, light and glare impacts anticipated under the Project would be less than significant. Additionally, mitigation measures to ensure that the Project is built with sensitivity to the visual environment. See Section 3.1 for Mitigation Measures **MM-AES-C1 through MM-AES-C3** and **MM-AES-O1 through MM-AES-O3**, which will ensure that the Project is built with sensitivity to the visual environment. As discussed in Section 3.10, *Transportation and Traffic*, with respect to rail safety, the California Public Utilities Commission's (CPUC's) Rail Transit Safety Section

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			prescribes requirements for the design, construction, operation, and maintenance of heavy rail transit, light rail transit, trolleys, and funicular systems. The CPUC ensures that all rail transit system extensions and new construction projects undergo a safety certification review and receive approval. Additionally, implementation of **MM-TRAF-O1** will reduce impacts related to bicycle safety. Specifically **MM-TRAF-O1** will require signage or markings that would clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway.
Policy 3.1.3	*Cooperate with regional transportation agencies in expediting the development and implementation of regional transit systems.*	No	The lead agency for the Project under CEQA is the City of Los Angeles. Development of the Project and its environmental review process are being managed through the joint cooperation of the Los Angeles County Metropolitan Transportation Authority (Metro) and the City's Department of Transportation and Bureau of Engineering.
Objective 3.2	*It is the objective of the City of Los Angeles to reduce vehicular traffic during peak periods.*	No	By creating a new mode of travel, the streetcar would reduce automobile trips during the peak hour, as demonstrated in Section 3.10, *Transportation and Traffic*.
Policy 3.2.1	*Manage traffic congestion during peak hours.*	No	The Project would implement a number of measures to manage traffic congestion during peak hours. These measures include a construction management plan (**MM-TRAF-C1**) and traffic mitigation (**MM-TRAF-C2, MM-TRAF-O1)** that would establish a construction monitoring program, and install safety signage.
Goal 4	*Minimal impact of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality.*	No	As stated in Chapter 2, *Project Description*, the primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. Air quality impacts anticipated to occur under the Project would be reduced to less-than-significant levels with implementation of mitigation measures. All transportation impacts, with the exception of impacts at three intersections, would also be reduced to less-than-significant levels with implementation of mitigation

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	***Description***	**Conflict?***	**Justification***
			measures.
Objective 4.1	*It is the objective of the City of Los Angeles to include the regional attainment of ambient air quality standards as a primary consideration in land use planning.*	No	See justification to Objective 1.1 of the Air Quality Element
Policy 4.1.1	*Coordinate with all appropriate regional agencies the implementation of strategies for the integration of land use, transportation, and air quality policies.*	No	See justification to Policy 3.1.3.
Objective 4.2	*It is the objective of the City of Los Angeles to reduce vehicle trips and vehicle miles traveled associated with land use patterns.*	No	See justification of Goal 2 of the Air Quality Element.
4.2.2	*Improve accessibility for the City's residents to places of employment, shopping centers, and other establishments.*	No	Proposed streetcar service would provide a circulator system for residents, workers, and visitors in downtown Los Angeles. The primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles.
4.2.3	*Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles.*	No	Proposed streetcar service would provide a circulator system for residents, workers, and visitors in downtown Los Angeles. The proposed configuration of track and roadway lanes under the Project would permit a mixed flow of vehicles and a fleet of electrically powered streetcars, while also accounting for pedestrians and cyclists.
4.2.4	*Require that air quality impacts be a consideration in the review and approval of all discretionary projects.*	No	This Draft EIR is a project EIR, as defined by Section 15161 of the State CEQA Guidelines and, as such, serves as an informational document for the general public and the Project's decision-makers. Section 3.2, *Air Quality*, includes an analysis of air quality impacts and mitigation measures to reduce construction and operation air quality impacts. As described in Section 3.2, no

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			significant air quality impacts would occur under the Project. See Section 3.2 for further discussion.
4.2.5	*Emphasize trip reduction, alternative transit, and congestion management measures for discretionary projects.*	No	Based on the ridership model, the Project would result in trip reduction by providing a new alternative transportation option to the downtown community. See also the Justification to Objective 2.1 above. See Section 3.2, *Air Quality*, and Section 3.10, *Transportation and Traffic*, for further discussion of the Project's consistency with the *Air Quality Management Plan* and the *Congestion Management Plan*. Chapter 2, *Project Description*, identifies all discretionary approvals required under the Project.
Conservation Element			
Archaeological and paleontological objective and policy	*Objective: protect the city's archaeological and paleontological resources for historical, cultural, research, and/or educational purposes.* *Policy: continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition, or property modification activities.*	No	The *Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles Project* and the *Archaeological Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles Project* were prepared in February 2016 by ICF (see Appendices G and H, respectively). The reports did not result in the identification of any surficial prehistoric or historic archaeological sites or features. Deeper excavations for the Project may encounter significant paleontological resources. Implementation of Mitigation Measure **MM-CUL-C2** would reduce the impact associated with the Project to a less-than-significant level. See Section 3.3, *Cultural Resources*, for further discussion of impacts.
Cultural and historical objective and policy	*Objective: protect important cultural and historical sites and resources for historical, cultural, research, and community educational purposes.* *Policy: continue to protect historic and cultural sites and/or resources potentially affected by proposed land development,*	No	Construction of streetcar stops, sidewalk ramps. OCS poles, and curb bump-outs have the potential to cause physical damage to historic sidewalk features, although it is not known definitively if construction activities would cause any damage. Implementation of Mitigation Measures **MM-CUL-C1 and MM-CUL-O1** would reduce impacts to less-than-significant levels.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	demolition or property modification activities.		
Land form and scenic vistas objective and policy	*Objective: protect and reinforce natural and scenic vistas as irreplaceable resources and for the aesthetic enjoyment of present and future generations.* *Policy: continue to encourage and/or require property owners to develop their properties in a manner that will, to the greatest extent practical, retain significant existing land forms (e.g., ridge lines, bluffs, unique geologic features) and unique scenic features (historic, ocean, mountains, unique natural features) and/or make possible public view or other access to unique features or scenic views.*	No	No scenic vistas or designated scenic highways, corridors, or parkways have been identified within the Project's viewshed(s). Therefore, the Project would not affect views from a designated scenic highway, corridor, or parkway and no impact would occur. See Section 3.1, *Aesthetics*, for further discussion.
Housing Element			
Objective 2.2	*Promote sustainable neighborhoods that have mixed-income housing, jobs, amenities, services and transit.*	No	The Project would link several neighborhoods or districts within the *Central City Community Plan* area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center. This dense urban area is the region's largest employment center and one of the region's largest tourist destinations. The Project would provide streetcar service for internal trips in downtown Los Angeles while maintaining bus, vehicle, bicycle, and pedestrian access in the project area.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
Noise Element			
Goal	*A city where noise does not reduce the quality of urban life.*	No	Construction noise, is inevitable in a growing and healthy city. As construction of the Project has the potential to result in substantial, but temporary increases in local noise levels along the project alignments, mitigation measures **MM-NV-C1** through **MM-NV-C11** would reduce these impacts. Nonetheless, after implementation of mitigation measures, construction impacts would be significant and unavoidable. See Section 3.9, *Noise and Vibration*, for further discussion of noise impacts. With these proposed construction noise mitigation measures, while the impact would remain significant, there would be a minimization of effects on the quality of urban life. With regard to operations, the Project would enhance the quality of urban life in the City by providing a new mode of transit linking disparate neighborhoods within downtown Los Angeles. While there would be sound generating components of the Project, the Project as a whole would increase mobility options in the downtown area and restore historic streetcar service that would enhance the quality of urban life. Further, the Project would not cause any operational significant noise impacts. Taken together, the Project is consistent with this goal and there is no conflict.
Objective 2 (Non-airport)	*Reduce or eliminate non-airport related intrusive noise, especially relative to noise sensitive uses.*	No	See justification for Noise Element Goal above.
Policy 2.2	*Enforce and/or implement applicable city, state and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.*	No	See justification for Noise Element Goal above. Additionally, all applicable city, state, and federal regulations with regard to noise mitigation would be followed. As such, the Project is consistent with this goal and there is no conflict.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
Objective 3 (Land Use Development)	*Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.*	No	See justification for Noise Element Goal above.
Open Space Element			
Goal	*To conserve unique natural features, scenic areas, cultural and appropriate historical monuments for the benefit and enjoyment of the public.*	No	See justification for "Land form and scenic vistas objective and policy" included in the Conservation Element.
Service Systems Element/Public Recreation Plan	*The plan sets forth recreation standards intended to provide a basis for satisfying the needs for neighborhood and community recreational sites.* *Objective: To provide a guide for the orderly development of the City's public recreational facilities.*	No	The Project would result in the implementation of streetcar service in downtown Los Angeles. Proposed streetcar service would provide a circulator system for residents, workers, and visitors in downtown Los Angeles. The proposed configuration of track and roadway lanes under the Project would permit a mixed flow of vehicles and a fleet of electrically powered streetcars, while also accounting for pedestrians and cyclists. Implementation of the Project would not conflict with the development of the City's public recreational facilities.
Safety Element			
Policy 1.1.6	*State and federal regulations. Assure compliance with applicable state and federal planning and development regulations, e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act. [All EOO natural hazard enforcement and implementation programs relative to non-City regulations implement this policy.]*	No	The Project would be subject to several state and federal planning and development regulations including the *Alquist-Priolo Act* and the *Seismic Hazards Mapping Act* and would comply with applicable requirements of these regulations. See Section 3.5, *Geology and Soils*, and Section 3.7, *Hazards and Hazardous Materials*, for further discussion of these regulations.
Mobility Element			
Safety First Objective	*Vision Zero: Decrease transportation related*	No	The Project would be implemented with adherence to all available safety measures.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	Description	Conflict?*	Justification*
	fatality rate to zero by 2035.		As discussed in Section 3.10, T*ransportation and Traffic*, the Project could result in potential safety conflicts affecting bicyclists in proximity to streetcar tracks. Implementation of **MM-TRAF-O1** would reduce impacts related to bicycle safety. Specifically **MM-TRAF-O1** would require signage or markings that would clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway.
Policy 1.1 (Roadway User Vulnerability)	*Design, plan, and operate streets to prioritize the safety of the most vulnerable roadway user.*	No	See justification for Safety First Objective under the Mobility Element.
Policy 1.2 (Complete Streets)	*Implement a balanced transportation system on all streets, tunnels, and bridges using complete streets principles to ensure the safety and mobility of all users.*	No	The primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. Additionally, implementation of **MM-TRAF-O1** will reduce impacts related to bicycle safety. Specifically **MM-TRAF-O1** will require signage or markings that would clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway. As stated in Chapter 2, *Project Description*, pedestrian activity would be encouraged under the Project.
1.6 (Multi-Modal Detour Facilities)	*Design detour facilities to provide safe passage for all modes of travel during times of construction.*	No	The Project would result in construction traffic impacts, as described in Section 3.10, *Transportation and Traffic*. Mitigation measures requiring a Traffic Management Plan (**MM-TRAF-C1**) and Construction Mitigation Monitoring (**MM-TRAF-C2**) would reduce impacts to less than significant. See Section 3.10 for further discussion.
Policy 2.3 (Pedestrian Infrastructure)	*Recognize walking as a component of every trip, and ensure high-quality pedestrian access in all site planning and public right-of-way modifications to provide a safe and comfortable walking environment.*	No	The Project would encourage pedestrian activity as described in Chapter 2, *Project Description*. Specifically, the Project would augment the current local transit services in the downtown core, provide yet another opportunity for transit use rather than the automobile, and facilitate increased pedestrian access.
Policy 2.5 (Transit Network)	*Improve the performance and reliability of existing and future bus service.*	No	The proposed streetcar service would function similar to bus service. Although there may be temporary delays to buses

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			associated with lane closures along the project alignment throughout the construction period, such impacts are not anticipated to result in additional passengers on the transit system such that capacity would be exceeded. The traffic management plan identified in Mitigation Measure **MM-TRAF-C1** (Section 3.10, *Transportation and Traffic*) would keep the community informed of all construction activities affecting bus routes in the downtown Los Angeles area. Bus services along the project alignment would remain unchanged and would operate alongside the streetcars. Some of the streetcar platforms would be shared by Metro buses, and LADOT DASH buses.
Policy 3.1 (Access for All)	*Recognize all modes of travel, including pedestrian, bicycle, transit, and vehicular modes—including goods movement—as integral components of the City's transportation system.*	No	See justification for Policy 3.9.4 of the Framework Element.
Policy 3.2 (People with Disabilities)	*Accommodate the needs of the people with disabilities when modifying or installing infrastructure in the public right-of-way.*	No	The streetcars would be designed to be compliant with the *Americans with Disabilities Act* (ADA).
Policy 3.4 (Transit Services)	*Provide all residents, workers and visitors with affordable, efficient, convenient, and attractive transit services.*	No	See justification for Policy 3.9.4 of the Framework Element. Additionally, by connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and landmarks, and entertainment venues, and by providing connectivity to other transit services, the Project would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.
Policy 3.5 (Multi-Modal Features)	*Support "first-mile, last-mile solutions" such as multi-modal transportation services, organizations, and activities in the areas*	No	See justification for Policy 3.9.4 of the Framework Element. Bus services along the project alignment would remain unchanged and would operate alongside the streetcars. Some of the streetcar platforms would be shared by Metro buses,

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	around transit stations and major bus stops (transit stops) to maximize multi-modal connectivity and access for transit riders.		and LADOT DASH buses. The Project would encourage pedestrian activity and would facilitate increased pedestrian access, as described in Chapter 2, *Project Description*.
Policy 3.7 (Regional Transit Connections)	*Improve transit access and service to major regional destinations, job centers, and inter-modal facilities.*	No	The Project would provide transit service to residents, visitors, and workers in downtown Los Angeles. By connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and landmarks, and entertainment venues, and by providing connectivity to other transit services, the Project would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.
Policy 4.15 (Public Hearing Process)	*Require a public hearing for the proposed removal of an existing class II or IV bicycle facility.*	No	Preparation of this EIR is subject to CEQA requirements pertaining to public participation. In 2013, the City published the Notice of Preparation (NOP) for the EIR on January 3. The NOP provided formal notice of the opportunity to comment in writing and/or in person at the public scoping meeting. The CEQA scoping period started on January 3, 2013, and ended on February 1, 2013. Additionally, this Draft EIR is being publicly circulated for 45 days. Although temporary disruptions may occur during construction activities, no removal of existing Class II or IV bicycle facilities would occur under the Project.
Policy 5.1 (Sustainable Transportation)	*Encourage the development of a sustainable transportation system that promote environmental and public health.*	No	See justification for Policy 3.5 (Multi-Modal Features) of *Mobility Plan 2035*. By connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and landmarks, and entertainment venues, and by providing connectivity to other transit services, the Project would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.
Policy 5.2 (Vehicle Miles Traveled (VMT)	*Support ways to reduce vehicle miles traveled (VMT) per capita.*	No	The Project would introduce a fleet of electrically powered streetcars for internal Downtown Los Angeles trips. VMT would

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			decrease as a result of implementation of the Project. Additionally, the Project would support bicycle and pedestrian activity in the project area.
5.4 (Clean Fuels and Vehicles)	*Continue to encourage the adoption of low and zero emission fuel sources, new mobility technologies, and supporting infrastructure.*	No	See justification for Policy 5.2 of the Mobility Element.
Central City Community Plan			
Objective 4-4	*To encourage traditional and non-traditional sources of open space by recognizing and capitalizing on linkages with transit, parking, historic resources, cultural facilities, and social services programs.*	No	The Project would introduce streetcar service and ancillary facilities (MSFs) in the project area. Construction of streetcar stops, sidewalk ramps, and curb bump-outs would occur, thereby providing non-traditional types of open space.
Policy 4-4.1	*Improve Downtown's pedestrian environment in recognition of its important role in the efficiency of Downtown's transportation and circulation systems and in the quality of life for its residents, workers, and visitors.*	No	By providing a new mode of transportation, the Project is designed to improve the pedestrian environment and pedestrian mobility. Due to the large number of transit options in downtown Los Angeles, the Project would further connect pedestrians to the various multimodal transportation options currently available.
Objective 11-1	*To keep downtown as the focal point of the regional mobility system accommodating internal access and mobility needs as well.*	No	The primary objectives of the Project are to enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. The Project would introduce streetcar service to downtown Los Angeles, resulting in internal transit trips for visitors, residents, and workers.
Policy 11-1.1	*Encourage rail connections and High Occupancy Vehicle lanes that will serve the downtown traveler.*	No	By connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and landmarks, and entertainment venues, and by providing connectivity to other transit services, the Project would improve mobility and accessibility with a new transportation mode for people who live

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	***Description***	**Conflict?***	**Justification***
			and work in the downtown area, as well as for visitors.
Policy 11-2.12	*Encourage use of the existing and planned bus and rail service within downtown from internal circulation through a uniform, reduced or free fare system.*	No	The Project would provide transit services for visitors, workers and residents in the downtown Los Angeles area as well as provide connectivity to other transit uses. Additionally, see Chapter 2, *Project Description*, for further discussion of connectivity to other transit uses.
Policy 11-7.1	*Encourage transportation strategies that include parking and TDM policies and actions that increase ridesharing and give priority to visitor/shopper parking.*	No	The Project would provide transit services for visitors, workers, and residents in the downtown Los Angeles area as well as provide connectivity to other transit uses.
Policy 11-7.11	*Transit system capacity must be increased to match increases in future demand for transit usage.*	No	The Project would provide connectivity to other transit services and would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.
Street Hierarchy/ Standards Policies	*Provide the essential connections and interchanges necessary for a comprehensive transportation system.* *Transit Priority Streets: Figueroa Street, Flower Street, Broadway, Olympic Boulevard and Pico Boulevard.*	No	See justification for Policy 11.7-11 of *Mobility Plan 2035*. Additionally, see Chapter 2, *Project Description*, for a detailed description of the Project alignments.
Pedestrian Linkages Objective	*To link transit and pedestrian districts of historic Downtown Los Angeles.*	No	The Project would traverse through historic downtown Los Angeles. See Chapter 2, *Project Description*, for a detailed description and location of the project alignments.
Bunker Hill Specific Plan			
Purpose	*Support the expansion of the regional transit network through an urban form and mix of land uses that support high levels of transit use*	No	See justification for Policy 11-7.11 of *Mobility Plan 2035*.
Purpose	*Create a transit-friendly environment by requiring conformance to pedestrian oriented*	No	See justification for Policy 11-7.11 and Pedestrian Linkages Objective of *Mobility Plan 2035*.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	***Description***	**Conflict?***	**Justification***
	design guidelines that promote consistent street walls and active ground floor uses.		
Section B. Supplemental Urban Design Standards	*On retail streets and on other streets adjacent to ground floor space designed for retail, the building wall shall be located at or within 5 feet of the back of the minimum average sidewalk width required by the Downtown Street Standards.*	No	Two MSF sites would be located adjacent to the boundaries of the *Bunker Hill Specific Plan* area; their design and operation would be implemented in adherence to applicable design standards.
Section 9; B. Maintenance of Existing Easements for Pedestrian Walkways	*Existing public easements for Pedestrian Walkways must be maintained unless an equivalent pedestrian easement is provided, subject to the Director's approval.*	No	The Project would adhere to all requirements related to pedestrian walkways.
Los Angeles Civic Center Shared Facilities Enhancement Plan	*Sharing government facilities (at the City, County, State, and Federal levels), reducing costs and restoring the heart of the City as a full and active "civic" center, not just a government center.*	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
City Center Redevelopment Plan	*To further the development of Downtown as the major center of the Los Angeles metropolitan region, within the context of the Los Angeles General Plan as envisioned by the General Plan Framework, Concept Plan, City-wide Plan portions, the Central City Community Plan, and the Downtown Strategic Plan.*	No	This chapter of the EIR contains a land use consistency analysis with applicable plans and policies. As described in the land use consistency analysis, no significant impacts related to consistency with applicable land use plans and policies would occur.
	To create a modern, efficient and balanced urban environment for people, including a full	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	range of around-the-clock activities and uses, such as recreation, sports, entertainment and housing.		attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
	To create a symbol of pride and identity which gives the Central City a strong image as the major center of the Los Angeles region.	No	The Project as a whole would increase mobility options in the downtown area and restore historic streetcar service that would enhance the quality of urban life.
	To facilitate the development of an integrated transportation system which will allow for the efficient movement of people and goods into, through and out of the Central City.	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
	To establish an atmosphere of cooperation among residents, workers, developers, business, special interest groups and public agencies in the implementation of this Plan.	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area			
	Develop a System to Support Both Visitors and Residents.	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
	Support Local Plans.	No	This chapter of the EIR contains a land use consistency analysis with applicable plans and policies. As described in the land use consistency analysis, no significant impacts related to consistency with applicable land use plans and policies would occur.
	Involve Local Citizens and Policy-Makers.	No	Preparation of this EIR is subject to CEQA requirements pertaining to public participation. In 2013, the City published the NOP for the EIR on January 3. The NOP provided formal notice of the opportunity

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
			to comment in writing and/or in person at the public scoping meeting. The CEQA scoping period started on January 3, 2013, and ended on February 1, 2013. Additionally, this Draft EIR is being publicly circulated for 45 days.
	Pay homage to the Red and Yellow Car systems.	No	The Project as a whole would increase mobility options in the downtown area and restore historic streetcar service that would enhance the quality of urban life.
Broadway Streetscape Master Plan			
Focus	*Create a multi-modal, pedestrian-focused street that will support the historic theater district.*	No	The Project would help achieve this focus of the master plan by restoring an historic transportation mode that was an integral part of the area's overall context.
Principle	*Keep new streetscape elements simple, with clean lines and materials.*	No	The Project would coordinate its streetscape components to be consistent with the simple, clean lines objective that the plan proposes. It would not recreate an historic feature, but rather restore the function that has been missing for many years.
Broadway Theater and Entertainment District Design Guide			
Goal	*Create a recognizable and attractive entertainment district on Broadway that enlivens the corridor, serves as a regional entertainment draw and encourages the reuse of its numerous historic theaters.*	No	The Project would not conflict with the design guidelines and standards that are intended to enhance the identity of the District. The Project would assist in furthering a recognizable and attractive entertainment district on Broadway that enlivens the corridor. Additionally, the Project would include increased opportunities for using the streetcar to gain access to multiple destinations and would be consistent with the goal of encouraging pedestrian-oriented and visitor-serving uses. The Project would encourage pedestrian-oriented and visitor-serving uses during the evening hours to expand activity centers within downtown and create better, safer linkages among downtown districts.
Goal	*Encourage development patterns and a mix of uses that contribute to a pedestrian-friendly environment on Broadway and promote an active street life 24*	No	The Project would enhance mobility through expanded transit circulation service and support the growth and revitalization of downtown Los Angeles. By connecting residential and employment areas, shopping districts, civic resources, cultural institutions, historic districts and

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	hours a day, with an emphasis on night-time and entertainment uses for residents, workers, visitors and tourists.		landmarks, and entertainment venues, and by providing connectivity to other transit services, the Project would improve mobility and accessibility with a new transportation mode for people who live and work in the downtown area, as well as for visitors.
Goal	*Encourage development that contributes to the safety and comfort of Downtown residents and visitors.*	No	The Project would provide a new mode of transportation to link the disparate communities in downtown Los Angeles together. By providing a well-designed and attractive streetcar, with drivers on every vehicle, the Project would contribute to the safety and comfort of downtown residents and visitors.
Goal	*Promote projects that are designed to ensure compatibility among wide range of uses encouraged in the district and which incorporate measures that help diminish noise, improve energy efficiency and mitigate other potential impacts.*	No	Chapter 3, *CEQA Environmental Impact Analysis*, of this EIR identifies potential construction and operation environmental impacts and mitigation measures for the Project. Mitigation measures have been included for all potentially significant impacts. As described in Section 3.9, *Noise and Vibration*, and Section 3.10, *Transportation and Traffic*, significant and unavoidable construction noise and operational traffic impacts would result under the Project. All other environmental impacts would be reduced to less-than-significant levels.
New Construction; Site Planning; 1. Respecting the Historic Context, 3 Setbacks, 6. Building Scale and Massing, 12. Lighting, 15. Utilities, Mechanical Equipment, Trash Containers, and Loading, 1Signage Simplicity and Quality	*Guideline 1: Pursue creative and innovative contemporary designs for new buildings that will complement Broadway's designated National Register Historic District* *Guideline 3: Encourage an inviting pedestrian environment and provide for streetwall continuity by locating new buildings at the property line or the prevailing setback, as applicable. Where permitted, additional setback areas should encourage active public uses through additional*	No	The Project would not conflict with the *Broadway Streetscape Master Plan*. The Project would bring streetcar service back to the downtown area and Broadway in particular. The *Broadway Streetscape Master Plan's* focus is to create a multi-modal, pedestrian-focused street that would support the historic theater district. In this respect, the Project would help achieve this focus of the plan by restoring an historic transportation mode that was an integral part of the area's overall context. The Project would coordinate its streetscape components to be consistent with the simple, clean lines objective that the plan proposes. It would not recreate an historic feature, but rather restore the function that has been missing for many years. No views of key historic buildings would be impaired. Clear, understandable

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	street trees, outdoor seating areas, kiosks, forecourts and arcades.		pedestrian connections would be apparent via the streetcar signage. Because the streetcar would be electrically powered, it would promote environmental responsibility. For these reasons, the Project will also be operated within the Broadway street cross-section as it is currently delineated.
Downtown Street Standards	*The Downtown Street Standards establish definitive future curb lines and property lines for all Downtown streets, and, in some locations, additional required average sidewalk easements.*	No	The Project would provide another travel mode within downtown and therefore would not conflict with the purpose of the *Downtown Street Standards*, specifically with the concept of updating street designations based on a more comprehensive street hierarchy that balances traffic flow with other equally important functions of the street, including pedestrian needs, and public transit. Development of the Project is being managed in close consultation with LADOT staff, and therefore adherence to and recognition of established street standards will be maintained as the design of the Project moves forward.
***City* of Los Angeles 2010 Bicycle Master Plan**			
Policy 1.3.1	*Incorporate bikeways into transit projects that include an exclusive right-of-way.*	No	The Project does not include an exclusive right-of-way.
Policy 2.3.2	*Mitigate obstacles or obstructions that impede safe and convenient bicycle passage.*	No	The Project includes a number of mitigation measures to improve bicyclist safety, including signage and pavement markings where needed. These measures include **MM-TRAF-CI** (development of a traffic management plan), **MM-TRAF-C2** (construction mitigation monitoring) and **MM-TRAF-O1** (signage). See Section 3.10, *Transportation and Traffic,* for further details.
Los Angeles Conservancy Historic Downtown Los Angeles Design Guidelines	*The guidelines describe how alterations and enhancements to buildings within historic downtown can and should be designed so that they reinforce the area's historic environment. They provide guidance about*	No	The Project would be designed and sited so as to be consistent with applicable design or street standards.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	***Description***	**Conflict?***	**Justification***
	compatible storefront and signage design, repair and maintenance of older buildings, renovation that highlights historic features, and sensitivity to these considerations that should be observed by new construction.		
Goal	*Promote the sensitive use and placement of well-designed and crafted signage to complement the unique historic character of commercial Los Angeles.*	No	Clear, understandable pedestrian connections will be apparent via the streetcar signage. See Chapter 2, *Project Description*, and Section 3.10, *Transportation and Traffic*, for further discussion of signage.
Way-Finding Signage Guidelines	*Create seamless components of an overall signage system using directional maps, transportation schedules, place name indicators, etc.*	No	The Project would be designed and sited so as to be consistent with applicable design or street standards.
Los Angeles Sports and Entertainment District Specific Plan	*The purpose of the Specific Plan is to provide continued and expanded improvements to the plan area as a major entertainment/mixed-use development and assure orderly infill of public facilities consistent with the intensity and design of the existing district.*	No	The Project would provide several stops within the Specific Plan area and it would connect the area to other parts of downtown. The Project would provide an alternative mode of transportation within the downtown area for visitors and residents and would encourage gathering in public places, including the attractions in the Specific Plan area.
Convention and Event Center Specific Plan	*The purpose of the Specific Plan is to enhance the area as a major convention and event center, assure orderly infill of public facilities consistent with the intensity and design of the existing district, and to provide public gathering places and a lively pedestrian-friendly environment through the establishment of unique*	No	The Project would not conflict with the *Convention and Event Center Specific Plan*. The Project would also be subject to applicable requirements of the Specific Plan and would provide an alternative mode of transportation within the downtown area for visitors and residents.

Plan/Element/ Goal/Objective/ Policy/Guiding Principle	*Description*	Conflict?*	Justification*
	streetscape and open space plans.		
* Plan conflict and justification refers to all build alternatives.			

3.8.3.5 Alternative 3: 7th Street without Grand Avenue Extension

Construction Impacts

Land Use Plan Consistency

Less-than-significant impact. Construction land use impacts due to inconsistencies with existing zoning and land use plan policies or goals would be similar to the impacts described above for Alternative 2, except no construction would occur on Grand Avenue. Therefore, a less-than-significant impact is anticipated.

Land Use Compatibility

Less-than-significant impact. Construction land use impacts associated with land use compatibility (division of neighborhood, disruption impacts, secondary impacts, etc.) would be similar to those described for the 7th Street with Grand Avenue Extension Alternative (Alternative 2). However, under Alternative 3, there would be no construction activities on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue. Similar to Alternative 2, construction activities could temporarily impair access to businesses located along the alignment could occur. Implementation of Regulatory Compliance Measure **RCM-LU-C1** is proposed to minimize access impacts on local businesses. Impacts would be considered less than significant.

Operational Impacts

Land Use Plan Consistency

Less-than-significant impact. Operational land use impacts related to land use plan and zoning consistency would be similar to impacts described for the 7th Street with Grand Avenue Extension Alternative (Alternative 2). However, under Alternative 3, the Project would not operate on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue.

Land Use Compatibility

Less-than-significant impact. Operational land use impacts associated with land use compatibility (division of neighborhood, disruption impacts, secondary impacts, etc.) would be similar to those described for the 7th Street with Grand Avenue Extension Alternative (Alternative 2). However, under Alternative 3, the Project would not operate on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue.

3.8.3.6 Alternative 4: 9th Street with Grand Avenue Extension

Construction Impacts

Land Use Plan Consistency

Less-than-significant impact. Construction land use impacts associated with plan/zoning consistency would be similar to those described for the 7th Street with Grand Avenue Extension Alternative (Alternative 2). However, under Alternative 4, construction activities would be on 9th Street instead of 7th Street between Figueroa and Hill Streets. A less-than-significant impact would occur.

Land Use Compatibility

Less-than-significant impact. The extent of land use impacts during construction activities would be similar to those anticipated to occur under Alternative 2. Additionally, construction land use impacts would be similar to those described for Alternative 2, with the exception that land uses along 9th Street, rather than 7th Street would be involved. Access disruptions during project construction would be temporary and would end once construction is completed. Temporary access improvement to businesses located along the alignment could occur (see Alternative 2's *Land Use Compatibility* discussion) but Regulatory Compliance Measure **RCM-LU-C1** would minimize potential impacts. Impacts would be less than significant.

Operational Impacts

Land Use Plan Consistency

Less-than-significant impact. Operational land use impacts related to land use plan/zoning consistency would be similar to impacts described for Alternative 2. However, under Alternative 4, the Project would operate on 9th Street instead of 7th Street between Figueroa and Hill Streets. A less-than-significant impact would occur.

Land Use Compatibility

Less-than-significant impact. Operational land use impacts associated with land use compatibility (division of neighborhood, disruption impacts, secondary impacts, etc.) would be similar to those described for Alternative 2. A less-than-significant impact would occur.

3.8.3.7 Alternative 5: 9th Street without Grand Avenue Extension

Construction Impacts

Land Use Plan Consistency

Less-than-significant impact. Construction land use impacts associated with land use plan/zoning consistency would be similar to those described for Alternative 3, except that construction would occur on 9th Street, rather than 7th Street. A less-than-significant impact would occur.

Land Use Compatibility

Less-than-significant impact. Construction land use impacts related to the division of an established community resulting from the construction of the alignment would be similar to those described for Alternative 3, except that construction would occur on 9th Street rather than 7th Street. Similarly, any access disruptions during project construction would be temporary and would end once construction is completed. Proposed construction activities would not divide an established community. Temporary access impacts on businesses located along the alignment could occur; however, Regulatory Compliance Measure **RCM-LU-C1** would minimize potential impacts. Impacts would be less than significant.

Operational Impacts

Land Use Plan Consistency

Less-than-significant impact. Operational land use impacts related to land use plan/zoning consistency would be similar to the impacts described for the 7th Street with Grand Avenue Extension, Alternative. However, under Alternative 5, the Project would operate on 9th Street instead of 7th Street between Figueroa and Hill Streets.

Land Use Compatibility

Less-than-significant impact. Operational land use impacts associated with land use compatibility (division of neighborhood, disruption impacts, secondary impacts, etc.) would be similar to those described above for Alternative 3, with the exception that the Project would operate on 9th Street rather than 7th Street.

3.8.3.8 Traction Power Substations and Laydown and Storage Areas

Construction

Land Use Plan Consistency

Less-than-significant impact. Construction of the TPSS units would follow all applicable City of Los Angeles regulations and guidelines pertaining to construction, which would minimize the potential for adverse impacts and conflicts with land use plan policies that are intended to protect the environment. See Table 3.8-1 for discussion of consistency with applicable plans and policies.

Land Use Compatibility

Less-than-significant impact. Construction areas would be limited in size (approximately 250 square feet), and impacts would be temporary and short-term. Construction activities associated with the TPPS units would not displace any residential units and would not create a physical barrier that would divide or isolate residential communities or neighborhoods.

The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and they would be used to store equipment and materials. Three potential laydown and storage areas have been identified for evaluation: the southeast corner of 3rd Street and Main Street; Grand Avenue to Olive Street, between 8th Street and 9th Street; and, Grand Avenue to Olive Street, between 12th Street and Pico Boulevard. However, other locations within the study area may be suitable if they have similar characteristics to these three locations, and they could be selected if they become available. Because no residences or businesses would be displaced and because activities at the laydown and storage areas would be temporary and would comply with all applicable City regulations and guidelines pertaining to construction, less-than-significant construction land use impacts would occur.

Operation

Land Use Plan Consistency

Less-than-significant impact. Potential locations for the TPSS units consist of vacant lots and parking areas and are zoned either C2 or R5. Within the commercially zoned parcels, installations of utility service facilities are specifically permitted as a use; they therefore would also be permitted as an ancillary occupancy of those parcels. While the zoning requirements pertaining to residentially zoned parcels do not specifically identify utility facilities as a permitted use, the degree to which the TPSS units would occupy space on the affected parcel would be incidental to the primary use, and careful placement and buffering (if necessary) would be provided to ensure that the installations would be compatible.

The proposed units would be designed and sited so as to be consistent with applicable design or street standards including the *Downtown Street Standards* and the *Historic Downtown Los Angeles Design Guidelines*; approval of the applicable City agency would be secured as part of the design process. Additionally, the build alternatives would not conflict with applicable goals and objectives of the *Central City Community Plan*. The alternatives would be consistent with objectives that encourage alternative modes of transportation to the automobile and support pedestrian activity. Additionally, the Project would include all necessary discretionary approvals to ensure that the proposed facilities would be consistent with City of Los Angeles zoning requirements. Operational activities would comply with all applicable local regulations and requirements.

Land Use Compatibility

Less-than-significant impact. As stated in Chapter 2, *Project Description*, each TPPS unit would be a durable structure containing electrical and electronic equipment. All TPSS units would be located out of the public right-of-way with the exception of the TPSS unit at 2nd Street and Grand Avenue, which may occupy a portion of the sidewalk. The unit would be installed in a manner that would not obstruct pedestrian access. Operational activities associated with the TPPS units would not result in land use impacts. No residential communities or neighborhoods would be divided or isolated and disruptions to businesses or other land uses would not occur.

3.8.3.9 Maintenance and Storage Facility Sites

As described in Chapter 2, *Project Description*, the following four sites are being evaluated as a potential location for an MSF:

- MSF Site: Broadway and 2nd Street.
- MSF Site: Hill Street and 5th Street.
- MSF Site: 11th Street and Olive Street (East).
- MSF Site: 11th Street and Olive Street (West).

The four potential locations for the MSF sites consist of vacant lots or parking areas and are zoned either C2 or R5.

Construction Impacts

MSF Site: Broadway and 2nd Street

Land Use Plan Consistency

Less-than-significant impact. The MSF would be located on a site zoned for commercial uses. Surrounding land uses to the north, east, and south are also zoned Commercial. Portions of the west side of Hill Street are zoned Commercial in this area. Portions of the west side of Hill Street are zoned for high density Residential. MSF construction activities would be temporary and would adhere to applicable City of Los Angeles regulations and requirements, including Article 4, Section 12.14. Consequently, this would not result in significant conflicts with existing land use plan policies or zoning or significant land use incompatibility impacts. Mitigation Measure **MM-TRAF-C1** included in Section 3.10, *Transportation and Traffic*, describes the development of a traffic management plan (TMP), which will reduce construction-related traffic impacts on public services, community facilities, utilities, bicycle circulation, and pedestrian circulation. The TMP will be prepared during final design for implementation during construction to mitigate the traffic impacts caused by construction of the Project. Additionally, as stated in Section 3.1, *Aesthetics*, Mitigation Measures **MM-AES-O1 and MM-AES-O2** will ensure that design of TPPS structures will be designed to minimize their visual presence, and MSFs will be appropriate in scale and proportion. Impacts would be less than significant.

Also located on this parcel is a Wedding Chapel business that may need to be displaced in order to provide adequate space for the MSF. Should this be determined necessary, the property owner would be compensated in accordance with applicable state and local laws and regulations, including the *Relocation Assistance Law*. Similarly, the business owner, if a tenant, would separately receive relocation assistance with the same laws and regulations.

Land Use Compatibility

Less-than-significant. The site is being used as a commercial parking lot. Land uses in the immediate area include commercial buildings and surface parking uses. The historic Bradbury Building and Million Dollar Theater are located just south of Third Street along Broadway, in the vicinity of the proposed MSF site. A residential tower is located across the street at 245 South Hill Street. See discussion above under *Land Use Plan Consistency* regarding Mitigation Measures **MM-TRAF-C1** and **MM-AES-O1 and MM-AES-O2**.

MSF construction activities would not displace any residential uses and would not create a barrier that would divide or isolate residential communities or neighborhoods.

MSF Site: Hill Street and 5th Street

Land Use Plan Consistency

Less-than-significant impact. This MSF option would be located on a site zoned for commercial uses. The surrounding area to the north, east, and west is zoned for commercial uses, but contains residential uses. Land uses located immediately to the south are zoned for open space uses.

Construction impacts associated with this option would be similar to the impacts described for the Broadway and 2nd Street MSF Option. Impacts would be less than significant.

Land Use Compatibility

Less-than-significant impact. Surrounding land uses are varied, consisting of high rise office buildings, open space (Pershing Square), hotel (Biltmore Hotel), and surface parking uses. The Pershing Square Metro Station is also located in the surrounding area southeast of the proposed MSF site. No residential uses are located at the proposed MSF site. The site is being used as a commercial parking lot. The Metro 417 Apartments are located north of the proposed MSF site along Hill Street, and the Title Guarantee Building is located to the south and east of the MSF site, at the northwest corner of Hill and 5th Street. No residential uses would be removed or disrupted as a result of proposed construction activities anticipated to occur under the MSF option. Construction impacts associated with this option would be similar to the impacts described for the Broadway and 2nd Street MSF Option. Mitigation Measure **MM-TRAF-C1** included in Section 3.10, *Transportation and Traffic*, describes the development of a TMP. The TMP will reduce construction-related traffic impacts on public services, community facilities, utilities, bicycle circulation, and pedestrian circulation. The TMP will be prepared during final design for implementation during construction to mitigate the traffic impacts caused by construction of the Project. Additionally, as described in Section 3.1, *Aesthetics*, Mitigation Measures **MM-AES-O1 and MM-AES-O2** will ensure that design of TPPS structures a will be designed to minimize their visual presence and MSFs will be appropriate in scale and proportion. Impacts would be less than significant.

MSF Site: 11th Street and Olive Street (East)

Land Use Plan Consistency

Less-than-significant impact. This MSF would be located on a site zoned for commercial uses. Land uses to the north and west are zoned Multiple Residential. Land uses to the west, east, and south are zoned Commercial. Additionally, construction activities would be temporary and would adhere to all applicable local regulations and requirements. A less-than-significant impact would occur.

Land Use Compatibility

Less-than-significant impact. The proposed MSF site is occupied by surface parking and does not contain any residential uses. The site is being used as a commercial parking lot. Surrounding land uses include a mix of uses including parking, commercial buildings, and multi-family residential uses. No residential uses would be displaced or disrupted, and proposed MSF construction activities would not create a physical barrier that would divide or isolate a residential community or neighborhood. As described above, Mitigation Measures **MM-TRAF-C1** and **MM-AES-O1 and MM-AES-O2** will reduce transportation and aesthetics impacts. Impacts on land use would be less than significant.

MSF Site: 11th Street and Olive Street (West)

Land Use Plan Consistency

Less-than-significant impact. This MSF would be located on parcels zoned for both residential and commercial uses, as well as an alley connecting the parcels. However, the proposed MSF site does not contain any residential uses. The surrounding area is zoned for both residential and commercial uses. The Project would include all necessary discretionary approvals to ensure that the proposed facilities would be consistent within City of Los Angeles zoning requirements.

Land Use Compatibility

Less-than-significant impact. The surrounding area is currently occupied by a mix of land uses including commercial buildings, multi-family residential, surface parking and restaurant uses. Similar to the other MSF sites, construction activities would be temporary and would adhere to all applicable local regulations and requirements. No residential uses would be displaced or disrupted. As described above, Mitigation Measures **MM-TRAF-C1** and **MM-AES-O1 and MM-AES-O2** will reduce transportation and aesthetics impacts. Impacts on land use would be less than significant.

Operational Impacts

Development of the MSF on any of the four candidate sites would occur under the authority of Section 14.00 of the LAMC, Article 4, Public Benefit Projects. Section 14.00 of the LAMC provides that "Where not permitted by right or by Conditional Use Permit . . . . public benefit uses are permitted in any zone, unless restricted to certain zones or locations." Several itemized land use categories are listed in the LAMC, including cemeteries, density increases for housing development projects, libraries, museums, fire or police stations, mobile homes parks, and other itemized uses. The category under which an MSF would be permitted is "Public Utilities and Public Services Uses and Structures."

Section 14.00 of the LAMC further requires that certain performance standards, or alternative compliance measures, must be met for the public benefit uses allowed under Section 14.00 of the LAMC. For Public Utilities and Public Services Uses and Structures, the following performance standards are listed:

1. Security night lighting is shielded so that the light source cannot be seen from adjacent residential properties.
2. The use is conducted in conformance with the City's noise regulations pursuant to Chapter 11 of the LAMC.
3. There are no outdoor public telephones on the site.
4. No buildings are higher than any buildings on adjoining property.
5. No guard dogs are used to patrol at night.
6. There is no use of barbed, razor or concertina wire.
7. Security lighting is provided in parking areas.
8. The property is improved with a ten foot landscaped buffer along the periphery of the property which is maintained and is equipped with an automatic irrigation system.
9. Parking areas are landscaped pursuant to the requirements of LAMC Section 12.21A6.
10. Only one identification sign is displayed on the site and it is on the building face. The sign does not exceed 20 square feet and does not extend more than two feet beyond the wall of the building and does not project above the roof ridge or parapet wall (whichever is higher) of the building.
11. All graffiti on the site is removed or painted over in the same color as the surface to which it is applied within 24 hours of its occurrence.

12. The use meets the parking requirements of LAMC Section 12.21 A (i.e., one space per 1,000 square feet of building area).
13. The site is a corner site.
14. Yards, at a minimum, should meet Code requirements or those prevalent on adjoining properties, whichever is the most restrictive.
15. The majority of frontage is on a major or secondary highway.
16. All streets, alleys or sidewalks adjoining the property meet standard street dimensions.

Should one or more of the above performance standards not be met, alternative compliance measures must be specified and an established procedure for their consideration and approval must be followed. The City of Los Angeles Director of Planning must find that the Project substantially meets the purposes of the performance standards and impose conditions to secure compliance. An appeal process is also provided for, which can be initiated by an applicant or any other aggrieved person. Subsequent to completion of the CEQA process and selection of an MSF site, final design activities must follow the above provisions of LAMC Section 14.00.

MSF Site: Broadway and 2nd Street

Land Use Plan Consistency

Less-than-significant impact. The optional MSF location at Broadway and 2nd Street has a zoning designation [Q]C2-4D-CDO (Commercial with Qualified Conditions, Height District 4, Community Design Overlay). The development of an MSF on this site would be conducted to be consistent with Section 14.00 of the LAMC, Article 4, Public Benefit Projects.

Land Use Compatibility

Less-than-significant impact. The MSF would be compatible with surrounding land uses, consisting of commercial and residential buildings and surface parking, because it would satisfy the performance standards prescribed under the LAMC Section 14.00. Additionally, operational activities would comply with all applicable land use plans and policies. A less-than-significant impact would occur.

MSF Site: Hill Street and 5th Street

Land Use Plan Consistency

Less-than-significant impact. This site has a zoning designation of C2-4D (Commercial, Height District 4). The surrounding area is zoned for either commercial or open space uses and currently contains high rise office buildings, open space (Pershing Square), hotel (Biltmore Hotel), residential, and surface parking uses. Land uses closest to the site are residential. The proposed development of this MSF would be conducted to be consistent with Section 14.00 of the LAMC, Article 4, Public Benefit Projects.

Land Use Compatibility

Less-than-significant impact. Operational land use impacts would be similar to those described above for MSF sites. The MSF would be compatible with surrounding land uses. Additionally, operational activities would comply with all applicable land use plans and policies. A less-than-significant impact would occur.

MSF Site: 11th Street and Olive Street (East)

Land Use Plan Consistency

Less-than-significant impact. This MSF would be located on a site zoned for commercial uses. Generally, land uses to the north and west are zoned Multiple Residential. Land uses to the east and south and immediate west are zoned Commercial. Additionally, construction activities would be temporary and would adhere to all applicable local regulations and requirements. A less-than-significant impact would occur.

Land Use Compatibility

Less-than-significant impact. The proposed MSF site is occupied by surface parking and does not contain any residential uses. The site is being used as a commercial parking lot. Surrounding land uses include a mix of uses including parking, low rise commercial buildings, and multi-family residential uses. As described in this EIR, impacts related to noise and aesthetics would be less than significant after mitigation. Therefore, no residential uses would be displaced or disrupted, and proposed MSF construction activities would not create a physical barrier that would divide or isolate a residential community or neighborhood. As described above, Mitigation Measures **MM-TRAF-C1** and **MM-AES-O1 and MM-AES-O**2 will reduce impacts. A less-than-significant impact would occur.

MSF Site: 11th Street and Olive Street (West)

Land Use Plan Consistency

Less-than-significant impact. Two of the three properties at this MSF site (at 1120 South Grand Avenue and 1114 South Grand Avenue) have a zoning designation of [Q]R5-4D-O (Multiple Dwelling with Qualified Conditions, Height District 4, Oil Drilling District). The third has a zoning designation of C2-4D-O (Commercial, Height District 4, Oil Drilling District). The proposed development of this MSF would be conducted to be consistent with Section 14.00 of the LAMC, Article 4, Public Benefit Projects.

Land Use Compatibility

Less-than-significant impact. As previously described, the surrounding area has a mix of land uses typical to urban areas, including commercial, restaurant, multi-family residential, and surface parking uses. Mid- to high-rise office buildings are also located in the surrounding area. The MSF would be compatible with surrounding land uses because it would satisfy the performance standards prescribed under the LAMC Section 14.00. Therefore, land use compatibility impacts would be considered less than significant.

3.8.4 Regulatory Compliance Measures

The following Regulatory Compliance Measures are proposed to reduce impacts affecting businesses located along the alignment:

> **RCM-LU-C1: Business Access and Signage.** The construction contractor shall provide signs for businesses whose frontage is obstructed by construction work indicating that the business is open during construction, and provide information regarding access to the business. The City of Los Angeles Department of Public Works (DPW), Bureau of Engineering (BOE), through the

construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

RCM-LU-C2: Business Displacement. Proposed displacement of the Guadalupe Wedding Chapel and any other business subject to displacement as a result of the Project would occur in accordance with applicable laws and regulations, including the *Uniform Business Relocation Assistance and Real Property Acquisition Policies Act of 1920*, as mentioned. If MSF1 were to be chosen, the business would also be displaced. Compensation to the property owner and business operator(s), and relocation assistance would be provided.

RCM-LU-O1: *Downtown Design Guidelines*. Design of the Project would comply with all applicable guidelines and requirements included in the *Downtown Design Guidelines* and Public Benefit projects performance measures, if necessary.

3.8.5 Mitigation Measures

3.8.5.1 Construction

No construction mitigation measures are required.

3.8.5.2 Operation

Operation would not result in significant land use impacts related to the division or disruption of existing neighborhoods or result in significant secondary impacts. Therefore, no operational mitigation measures are required. See Section 3.8.3.9 for regulatory requirements pursuant to LAMC Section 14.00. The following mitigation measure would be followed to ensure the appropriate siting and operation of the selected MSF location.

MM-LU-O1: LAMC Public Benefits Projects Conformity. The Project shall adhere to the requirements of LAMC Section 14.00 in all respects and shall follow all applicable procedures. All applicable performance standards or alternative compliance measures shall be addressed and all procedures for review and approval shall be followed. The City of Los Angeles BOE shall ensure the carrying out of the mitigation measure.

3.8.6 Significant and Unavoidable Impacts

No significant and unavoidable adverse construction or operational land use impacts would occur. Additionally, there would not be a conflict with any underlying land use plans addressing bicycle use; see Section 3.10, *Transportation and Traffic*, for further information.

3.8.7 Cumulative Impacts

The study area for the cumulative impacts analysis consists of the Bunker Hill, Civic Center, Center City/Historic Core, Central City East, Convention Center/Arena, Financial Core, Little Tokyo, South Markets, and South Park neighborhoods. Within the study area, several related projects (see Table 2-4 in Chapter 2, *Project Description*) would be in proximity to the Project and would have construction schedules that would overlap the Project's construction schedule. Such projects include the Regional Connector, the Wilshire Grand Project, the BSMP, and the Figueroa Corridor Streetscape Project.

3.8.7.1 Construction

Land Use Plan Consistency

Given that construction of the build alternatives, with the exception of the MSF and TPPS sites, would occur within public rights-of-way, the Project would not conflict with construction of any of the adjacent building or streetscape projects listed in Chapter 2, *Project Description*, Table 2-4. In addition, related projects, such as the Bicycle Plan, the BSMP, and the Figueroa Corridor Streetscape Project, would be constructed along Figueroa Street, 11th Street, Broadway, and 7th Street within the project study area. These projects include enhancement features, such as lane reconfiguration, landscaping, sidewalk and curb reconfiguration, street lighting, street furniture, and new paving. The BSMP and the Figueroa Corridor Streetscape Project are not part of the Project; however, the Project has been designed in coordination with these projects. The Project has also been designed in coordination with Metro to consider other transportation projects in downtown Los Angeles, such as the Regional Connector Project. Therefore, the Project would be consistent with planned roadway and curb reconfigurations, including those along 7th Street, 11th Street, Figueroa Street, and Broadway.

The potential locations for both the MSF and the TPSS units are currently vacant lots, buildings, rights-of-way, or parking areas. The construction of these project elements would not affect the viability of future planned projects. The Project would also coordinate with Metro with regard to the potential TPSS site at 2nd Street and Broadway. That site is currently undergoing planning and design to be an underground station for the Regional Connector Project. Should this site be selected as the TPSS location for the Project, the City would coordinate with Metro and the property owner regarding feasibility and the design of the site.

Land Use Compatibility

Cumulative construction land use impacts could occur if proposed and related projects cumulatively disrupt or diminish access to local businesses or other land uses. This could occur if minor access impacts due to two or more projects occur simultaneously, and would be dependent on scheduling of related projects and the Project. Access disruptions would cease when construction is completed. The Project would be located within an urban setting where there are existing major transportation facilities and development. Because the build alternatives would construct a transit option within an already-developed area rather than provide connections to a less-developed area, the development opportunities are limited by space constraints. Therefore, the Project would not result in or contribute to a significant cumulative impact during construction activities.

3.8.7.2 Operation

Land Use Plan Consistency

Operation of the Project would not conflict with the adjacent building or streetscape projects listed in Chapter 2, *Project Description*, Table 2-4. In addition, related projects, such as the Bicycle Plan, the BSMP, and the Figueroa Corridor Streetscape Project, would be constructed along Figueroa Street, 11th Street, Broadway, and 7th Street within the project study area. These projects include enhancement features, such as lane reconfiguration, landscaping, sidewalk and curb reconfiguration, street lighting, street furniture, and new paving. The BSMP and the Figueroa Corridor Streetscape Project are not part of the Project; however, the Project has been designed in coordination with these projects. The Project has also been designed in coordination with Metro to consider other transportation projects in downtown Los Angeles, such as the Regional Connector Project.

Land Use Compatibility

Cumulative operational impacts could occur if project components (i.e., streetcar and MSF and TPSS operations), in combination with ongoing operational effects of related projects, would result in impacts on nearby land uses. As described above, operational land use impacts associated with the streetcar service and the MSF and TPPS sites would be considered less than significant. Operation of the build alternatives, with the exception of the MSF and TPPS sites, would occur within public rights-of-way, and the Project would not conflict with the construction and/or operation of any of the adjacent building or streetscape projects listed in Table 2-4. Operation of the Project would also be designed in coordination with Metro to consider other transportation projects in downtown Los Angeles, such as the Regional Connector Project. Therefore, operation would be consistent with planned roadway and curb reconfigurations, including those along 7th Street, 11th Street, Figueroa Street, and Broadway. The related projects are generally commercial or residential developments that would not generate impacts similar to those associated with the Project. Therefore, the Project, in conjunction with the related projects, would not result in a considerable contribution to a significant cumulative land use impact related to physical division or disruption of land uses.

3.9 Noise and Vibration

The information in this section is based on the *Noise and Vibration Technical Report* found in Appendix I of this Draft EIR. The technical report is incorporated by reference.

3.9.1 Regulatory Setting

3.9.1.1 Federal Regulations

Federal Transit Administration Noise Impact Criteria

The noise and vibration impact criteria for use on federally financed transit projects are defined in the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment*, which is commonly referred to as the *FTA Guidance Manual.* The FTA guidelines, analysis methods, and criteria reflect the best available research on the topic.

The basic concept of the FTA noise impact criteria is that more project noise is allowed in areas where existing noise levels are high. For example, noise levels are higher in downtown areas than they are in suburban neighborhoods that are farther from loud noise sources, such as freeways. Therefore, FTA allows more project noise in noisier downtown areas than the relatively quieter suburban areas.

FTA Impact Criteria for Groundborne Vibration

The potential adverse effects of groundborne vibration from rail transit include perceptible building vibration, rattling, reradiated noise (groundborne noise), and cosmetic or structural damage to buildings. Vibration caused by the operation of typical modern streetcar vehicles is well below what is considered necessary to cause even minor cosmetic damage to buildings. Therefore, the impact criteria for building vibration caused by transit operations consider only the potential annoyance of building occupants.

Historic buildings, some of which may be fragile, are a particular concern, because they could be susceptible to damage from ground motions caused by construction vibration. A number of historic buildings are present in the study area. However, none of them are known to be or have been identified as fragile. Therefore, the vibration assessment for these structures is based on the lesser potential effects of perceptible building vibration. In order to ensure adequate protection for buildings subsequently found to be potentially susceptible to physical damage, mitigation measures are prescribed (see Section 3.9.4.2) to be followed during the construction process.

The FTA vibration impact criteria, as applied to the Project, are based on the maximum indoor vibration level from a passing streetcar. There are no impact criteria for outdoor spaces, such as parks. The *FTA Guidance Manual* provides two sets of criteria. One is based on the overall vibration velocity level, for use in a "General Vibration Impact Assessment," and the other is based on the maximum vibration level in any $^{1}/_{3}$ octave band (the band maximum level), for use with a "Detailed Vibration Assessment," which was performed for the Project.

3.9.1.2 State Regulations

California requires each local government entity to perform noise studies and implement a noise element as part of its general plan. State land use guidelines for evaluating the compatibility of various land uses as a function of community noise exposure are presented below.

3.9.1.3 Local Regulations and Standards

The Project is within the jurisdiction of the City of Los Angeles, which has established policies and regulations concerning the generation of noise that could adversely affect its citizens and noise-sensitive land uses.

Los Angeles Noise Ordinance (Municipal Code)

Chapter IV, Article 1, Section 41.40, of the *Los Angeles Municipal Code* specifies the hours allowed for construction activities. The *Los Angeles Noise Ordinance* states:

> No person shall, between the hours of 9 p.m. and 7 a.m. of the following day, perform any construction or repair work of any kind upon, or any excavating for, any building or structure, where any of the foregoing entails the use of any power driven drill, riveting machine, excavator, or any other machine, tool, device, or equipment that makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence. In addition, the operation, repair, or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and willfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this code (*Los Angeles Municipal Code*).

The *Noise Ordinance* also specifies the maximum noise level for powered equipment or powered hand tools. Any powered equipment or powered hand tool that produces a maximum noise level that exceeds 75 A-weighted decibels (dBA) at a distance of 50 feet from construction and industrial machinery is prohibited. However, the above noise limitation does not apply where compliance is technically infeasible (*Los Angeles Municipal Code*).

City of Los Angeles Noise Element

The *City of Los Angeles General Plan Noise Element* establishes standards for exterior sound levels based on land use categories. The *Noise Element* states that the maximum acceptable outdoor noise exposure level for residential, hospital, and school zones is 65 dBA Community Noise Equivalent Level (CNEL), and that silencers and mufflers on intake and exhaust openings of all construction equipment are required.

3.9.2 Environmental Setting/Affected Environment

3.9.2.1 Noise Fundamentals

Noise may be loud, unpleasant, unexpected, or undesired sound, typically associated with human activity that interferes with or disrupts the normal ongoing noise-sensitive activities of others. The objectionable nature of noise can be caused by its pitch or its loudness. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is the amplitude of sound waves combined with the reception characteristics of the ear. Amplitude may be compared with the height of an ocean wave. Technical acoustical terms commonly used in this section are defined in Table 3.9-1.

Decibels and Frequency

In addition to the concepts of pitch and loudness, several noise measurement scales are used to describe noise. The decibel (dB) is a unit of measurement that indicates the relative amplitude of sound. Zero on the decibel scale is based on the lowest sound pressure that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustical energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its level. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness over a wide range of amplitudes. Since decibels are logarithmic units, sound pressure levels are not added arithmetically. When two sounds of equal sound pressure level are added, the result is a sound pressure level that is 3 dB higher. For example, if the sound level were 70 dB when 100 cars pass an observer, then it would be 73 dB when 200 cars pass. Doubling the amount of energy would result in a 3 dB increase to the sound level. Overall noise levels do not change appreciably when a noise source is added to a relatively louder noise source. For example, if a 60 dB noise source is added to a 70 dB noise source, a noise level of 70.4 dB would result. Frequency relates to the number of pressure wave oscillations per second, or Hertz (Hz). The range of sound frequencies that can be heard by healthy human ears is from about 20 Hz at the low frequency end to 20,000 Hz (20 kilohertz [kHz]) at the high frequency end.

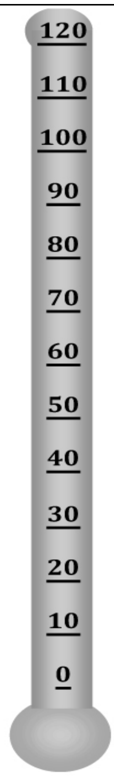
Table 3.9-1. Definitions of Acoustical Terms

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micropascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals in air). Sound pressure level is the quantity that is measured directly by a sound level meter.
Frequency (Hertz [Hz])	The number of complete pressure wave fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 and 20,000 Hz. Infrasonic sounds are below 20 Hz, and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA L_{eq}[h].
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after the addition of 5 dB to sound levels in the evening from 7 p.m. to 10 p.m. and after the addition of 10 dB to sound levels at night between 10 p.m. and 7 a.m.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, obtained after the addition of 10 dB to levels measured at night between 10 p.m. and 7 a.m.

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.
Source: Cyril M. Harris 1991.	

There are several methods for characterizing sound. The most common is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Studies have shown that the A-weighted level correlates closely with annoyance to traffic noise. Other frequency weighting networks, such as C weighting or dBC, have been devised to describe noise levels for specific types of noise (e.g., explosives). Table 3.9-2 shows the typical A-weighted noise levels that occur in human environments.

Table 3.9-2. Typical Noise Levels in the Environment

Noise Level, dBA	Extremes	Home Appliances	Speech at 3 Feet	Motor Vehicles at 50 Feet	General Type of Community Environment
	Jet aircraft at 500 feet				
		Chain saw			
		Power lawnmower		Diesel truck (not muffled)	
		Shop tools	Shout	Diesel truck (muffled)	
		Blender	Loud voice	Automobile at 70 mph	Major metropolis
		Dishwasher	Normal voice	Automobile at 40 mph	Urban (daytime)
		Air-conditioner	Normal voice (back to listener)	Automobile at 20 mph	Suburban (daytime)
		Refrigerator			Rural (daytime)
	Threshold of hearing				
Source: Harris Miller Miller & Hanson, Inc. (2003).					

Noise Descriptors

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations is utilized. L_{eq} is the energy-mean A-weighted sound level present or predicted to occur during a specified interval. It is the equivalent constant sound level that a given source would need to produce to equal the fluctuating level of measured sound. The L_{max} value obtained for a particular monitoring location represents the loudest momentary sound during the measurement period, which is often described as the loudest 1-second period during the averaging period. The metric that describes the 24-hour average, L_{dn}, includes a penalty for noise during nighttime hours. L_{dn} is approximately equal to the L_{eq} peak hour under normal traffic conditions (Caltrans 2006).

Human Response to Noise

Noise-sensitive receptors typically include residences, hospitals, schools, guest lodging quarters, libraries, and certain types of passive recreational uses. Studies have shown that, under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of 1 dBA. In the normal environment, however, changes in noise level of 3 dBA are considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud.

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. In the absence of obstructions, sound from a single source (i.e., a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance. Streetcar noise is not a single stationary point source of sound. The movement of the streetcars makes the source of the sound appear to emanate from a line (i.e., a “line” source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading. The result of this difference in manner of propagation is that the attenuation in sound level from a line source is 3 dBA per doubling of distance. A large object such as a building or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and proximity to the noise source and receiver. Buildings and walls can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver would typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 15 dB of noise reduction.

3.9.2.2 Environmental Vibration Fundamentals

The strength of groundborne vibration diminishes (or attenuates) fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Several basic measurement units are commonly used to describe the intensity of ground vibration. The descriptors used by FTA are root-mean square velocity level, in VdB units, relative to one micro-inch per second to describe human response to transit vibration and peak particle velocity (PPV), in units of inches per second, and VdB to describe vibration from construction activities.

The velocity parameter (rather than acceleration or displacement) correlates best to human perception of vibration. Thus, the response of humans, buildings, and sensitive equipment to vibration is described in this section in terms of the root-mean square velocity level, in VdB units, relative to one micro-inch per second. As a point of reference, the average person can barely perceive vibration velocity levels below 70 VdB (typically in the vertical direction). The calculation to determine vibration velocity level (dBV) at a given distance is the following:

$L_v(D) = L_v(25\ \text{feet}) - 30*\log(D/25)$

where

$L_v(D)$ = the vibration level at the receiver,
$L_v(25\ \text{feet})$ = the reference source vibration level, and
D = the distance from the vibration activity to the receiver.

The calculation to determine PPV at a given distance is the following:

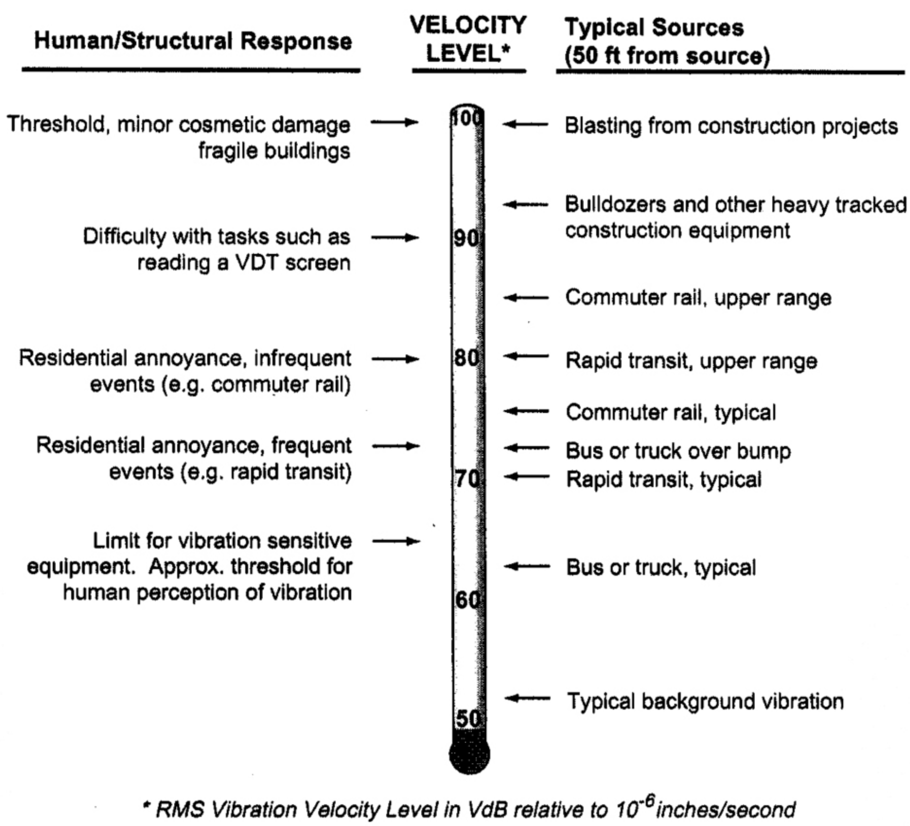
$PPV_{distance} = PPV_{ref}*(25/D)$^1.5

where

$PPV_{distance}$ = the peak particle velocity in inches/second of the equipment adjusted for distance,
PPV_{ref} = the reference vibration level in inches/second at 25 feet, and
D = the distance from the equipment to the receiver.

A comparison of common groundborne vibration levels is shown in Figure 3.9-1. Typical background vibration levels are between 50 and 60 VdB, whereas levels for minor cosmetic damage to fragile buildings or blasting are generally in the neighborhood of 100 VdB (FTA 2006).

Figure 3.9-1. Common Groundborne Vibration Levels



Source: FTA 2006.

3.9.2.3 Existing Noise Conditions

Existing ambient noise levels along the project corridor were documented through measurements taken at representative sensitive receivers between September 2012 and March 2013. The noise measurements were taken only during weekdays (Monday through Friday). The primary existing noise source in the project area is vehicular traffic on streets in the streetcar alignment (i.e., Broadway and Hill; Figueroa; 1st, 7th, 9th, and 11th Streets; and Grand Avenue). Long-term noise measurements were taken at six sites, and short-term noise measurements were taken at nine sites. The locations of the noise measurement sites are shown in Figure 3.9-2. Photographs from each site are included in the *Noise and Vibration Technical Report* (Appendix I).

Figure 3.9-2. Noise and Vibration Measurement Locations

Source: ATS Consulting, 2013.

The ambient noise measurement results are summarized in Table 3.9-3. The 24-hour day-night sound level exceeded 70 dBA at most locations, which is to be expected in downtown areas where receivers are very close to primary noise sources, such as vehicular and foot traffic combined with intermittent sirens, low flying helicopters, and other loud noise sources. Except for Site LT-2, measurements at long-term noise sites were taken on second- or third-floor balconies of residences or hotels. The only available location for mounting a microphone at Site LT-6 was on the ledge of a second-floor window. As the microphone was within 12 inches of the building wall, adjustments were made to the measured noise level to account for potential amplification from sound reflections off the wall.

Table 3.9-3. Ambient Noise Measurement Results

Site	Location	Type of Land Use[a]	Duration (hours)	Start Time, hh:mm[b]	Distance (feet)[c]	L_{eq} (day), dBA[d]	L_{dn}, dBA[d]
LT-1	417 Hill St	2	24	2:30 p.m.	25	63	66
LT-2	330 11th St	2	24	1:10 p.m.	25	65	66
LT-3	939 Figueroa St	2	24	11:30 a.m.	25	70	73
LT-4	711 Hope St	2	24	1:30 p.m.	25	69	72
LT-5	901 Broadway	2	24	10 a.m.	25	68	72
LT-6	756 Broadway	2	24	2:30 p.m.	25	73[e]	76[e]
ST-1	Disney Concert Hall	1	1	12:10 p.m.	15	67	67[f]
ST-2	Mosk Courthouse	3	1	1:20 p.m.	15	71	72[f]
ST-3	207 Broadway	3	1	2:35 p.m.	15	74	76[f]
ST-4	Los Angeles Theater	1	1	12:40 p.m.	10	71	74[f]
ST-5	Orpheum Theater	1	1	1:50 p.m.	15	73	77[f]
ST-6	Belasco Theater	1	1	1:15 p.m.	15	67	70[f]
ST-7	LA Live	3	1	2:30 p.m.	15	68	70[f]
ST-8	7th and Olive	3	1	1:50 p.m.	15	73	77[f]
ST-9	Pershing Square	3	1	2:00 p.m.	15	69	73[f]

Source: ATS Consulting 2013.
[a] Land use of the nearest sensitive receiver.
[b] Start time of the measurement.
[c] Distance of microphone from the centerline of the nearest traffic lane.
[d] L_{eq} for the duration of the measurement during daytime hours (7 a.m. to 10 p.m.).
[e] Because the microphone at this site was on the ledge of a second-floor window and within 1 foot of the closest wall, the level includes a -5 dB adjustment factor to account for the potential noise increase from reflections off the wall.
[f] Estimated L_{dn} based on the difference between L_{dn} and daytime L_{eq} at the closest long-term site.

For the measurements, L_{dn} was estimated at the short-term noise sites by adding an adjustment factor to the measured 1-hour L_{eq}. The adjustment factor was based on the difference between the measured L_{dn} and daytime L_{eq} at the closest long-term noise site.

The existing noise levels during the nighttime hours of 10 p.m. to 7 a.m. were measured at Sites LT-1 through LT-6 as part of the 24-hour noise measurements. The nighttime noise measurements are summarized in Table 3.9-4. These data form the baseline for characterizing the existing environment at residential receivers.

Table 3.9-4. Ambient Nighttime Noise Measurement Results – 1-hour L_{eq} (dBA)

Start Hour hh:mm	Site LT-1 417 Hill St	Site LT-2 330 11th St	Site LT-3 939 Figueroa St	Site LT-4 711 Hope St	Site LT-5 901 Broadway	Site LT-6 756 Broadway
22:00	59.7	62.9	66.1	63.9	69.0	72.7
23:00	59.1	56.0	66.8	62.9	62.9	71.7
0:00	58.0	55.7	66.4	62.1	61.3	70.2
1:00	57.9	54.0	66.8	62.6	60.6	68.9
2:00	57.3	53.5	64.2	63.6	59.1	76.3
3:00	56.9	53.2	64.2	62.1	60.4	71.1
4:00	58.4	54.3	62.2	61.9	63.2	75.8
5:00	60.9	58.1	65.8	63.9	68.1	77.9
6:00	62.5	63.0	68.3	68.6	70.2	79.7
Source: ATS Consulting 2014.						

3.9.2.4 Existing Vibration Conditions

Existing vibration sources in the project area consist primarily of vehicular traffic and intermittent construction activities. Vehicular traffic is the only permanent vibration source that was observed in the project area. When vehicular traffic causes perceptible vibration, the source is usually traced to potholes, wide expansion joints, or other "bumps" in the roadway surface. Therefore, the FTA assessment procedures for vibration from rail transit projects do not require measurements of existing vibration levels.

Localized geologic conditions, such as soil stiffness, soil layering, and depth to bedrock, have a strong effect on groundborne vibration. Unfortunately, it is difficult to obtain information regarding subsurface conditions with the level of detail necessary for computer models to predict ground vibration accurately. As a result, most detailed predictions of ground vibration are based largely on empirical methods that involve measuring vibration propagation in the soil.

Because many of the buildings with vibration-sensitive land uses are within a few feet of sidewalks, the streetcar tracks at these sensitive receivers would be relatively close to the buildings. Therefore, a Detailed Vibration Assessment, including vibration propagation tests, was performed. Vibration propagation tests were performed at three theaters that are currently in use (Sites V-1 through V-3) and one surface parking lot (Site V-4). A description of the vibration propagation test is presented in the noise and vibration technical report included in Appendix I.

3.9.3 Environmental Impact Analysis

For the purpose of assessing the Project's construction impacts related to noise and vibration, Alternatives 2 through 5 are considered together because the impacts for these would be nearly identical. They are collectively referred to as the "build alternatives."

For operational noise and vibration impacts, the results are nearly identical for Alternatives 2 through 5 and the results are presented in summary tables that combine the results for all build alternatives. There are some differences among the alternatives, and those are called out where appropriate.

3.9.3.1 Methodology

Noise

The basic approach used to identify potential noise impacts are the following steps:

1. **Identify Sensitive Receivers**. Noise-sensitive land uses along the corridor were identified by, first, using aerial photography, followed by field visits to confirm land uses and the presence of any features, such as intervening structures, that may provide acoustic shielding. Sensitive receivers were grouped according to their location relative to the tracks and land use.
2. **Determine Existing Conditions**. Existing noise levels were measured along the project corridor at 15 sites. The measurements are important because the FTA noise impact thresholds are presented on a sliding scale, which is a function of existing noise levels.
3. **Develop Prediction Models**. The noise prediction models use both standard formulas to characterize noise from rail transit vehicles and also noise measurements taken from existing streetcar and light rail systems. The prediction models incorporate a forecast regarding the future number of streetcar operations per day; the distribution of such operations throughout the day (e.g., early morning, daytime, nighttime); the distance from the tracks; streetcar speed; and the presence of walls, berms, or structures that provide acoustic shielding for the receivers. The predictions of noise from streetcar operations also include the additional noise from the use of the streetcar audible warning devices to alert passengers and patrons at stations that a streetcar is approaching. In addition to these, other audible warning devices (such as horns) would be used at the operators' discretion to alert pedestrians and motor vehicle drivers when a potential safety risk is present, the same way that horns are used on buses. For purposes of analysis, it was assumed that audible warning devices would produce a noise level of 80 dBA at a distance of 50 feet,[1] which is similar to the noise level produced by horns. It was further conservatively assumed that audible warning devices would be sounded at every stop, and also at approximately half of the intersection crossings. Actual experience would likely be fewer than this frequency.
4. **Estimate Future Noise Exposure at the Representative Receivers**. Prediction models were used to estimate future streetcar noise for each sensitive receiver. Predictions for each receiver were based on the distance from the Project to the closest sensitive receiver and expected streetcar and traffic parameters. The predicted levels of noise from streetcar operations and vehicular traffic were compared with the applicable FTA impact thresholds to identify potential noise impacts. It is noteworthy that the City's CEQA noise thresholds are also based on the FTA criteria.

[1] The California Public Utilities Commission General Order 143-B, Section 3.04, requires that each streetcar vehicle be equipped with an audible warning device capable of producing a warning of at least 75 dBA at a distance of 100 feet from the vehicle. Section 7.09 requires the audible warning device to be sounded at locations identified in the system's operating rules, or when the operator believes it is necessary.

5. **Evaluate Mitigation Options**. Mitigation options were evaluated for all locations where the predicted noise levels would exceed the applicable FTA threshold for moderate or severe noise impacts.

Vibration

The approach for the vibration assessment was basically the same as that of the noise assessment. The primary differences are the following:

- An assessment of the propagation of vibration through the ground must be based on measurements, while the propagation of noise through air can be characterized using standard formulas.
- Existing vibration is not a consideration when assessing vibration impacts. This is because everyone is exposed to some audible environmental noise. However, it is relatively rare for people to be exposed to perceptible groundborne vibration unless they are located near a construction site or near roadways with potholes, wide expansion joints, or other irregularities in the roadway surface.
- Outdoor spaces are not considered sensitive to groundborne vibration. In contrast, outdoor spaces where quiet is important for the intended function are considered noise sensitive. This includes spaces intended for meditation or study (e.g., cemeteries, monuments, historical spaces).

3.9.3.2 Thresholds of Significance

L.A. CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide* (2006) provides additional guidance for determining the significance of noise impacts. According to the *L.A. CEQA Thresholds Guide*, a project would normally have a significant impact on noise levels if any of the following would occur:

1. Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise-sensitive use.
2. Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use.
3. Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive use between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.
4. For operational noise, a project would normally have a significant impact on noise levels from project operations if it would cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA CNEL in the “normally unacceptable” or “clearly unacceptable” category, or result in any 5 dBA or greater noise increase.

Community Noise Exposure Levels are shown in Table 3.9-5. It should be noted that: (a) for office building uses, the “normally unacceptable” noise level is above 75 dB CNEL, and (b) for multi-family homes, the “normally unacceptable” noise level is 70–75 dB CNEL. Operational noise sources associated with the Project would include streetcar operations and vehicular traffic.

Table 3.9-5. Community Noise Exposure CNEL

Land Use	Community Noise Exposure CNEL, dB			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Single Family, Duplex, Mobile Homes	50–60	55–70	70–75	above 70
Multi-Family Homes	50–65	60–70	70–75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	above 80
Transient Lodging – Motels, Hotels	50–65	60–70	70–80	above 80
Auditoriums, Concert Halls, Amphitheaters	--	50–70	--	above 65
Sports Arena, Outdoor Spectator Sports	--	50–70	--	above 70
Playgrounds, Neighborhood Parks	50–70	--	67–75	above 72
Gold Courses, Riding Stables, Water Recreation, Cemeteries	50–75	--	70–80	above 80
Office Buildings, Business and Professional Commercial	50–70	67–77	above 75	--
Industrial, Manufacturing, Utilities, Agriculture	50–75	70–80	above 75	--

Source: *L.A. CEQA Thresholds Guide* (2006); California Department of Health Services (DHS).

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and need nose insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

The *L.A. CEQA Thresholds Guide* states the same significance thresholds for noise produced by railroad noise as for operational noise.

FTA Noise Thresholds

The Project is seeking funding through the FTA's Capital Investment "Small Starts" Grant Program. Accordingly, at a later date, a request for entrance into this program may be made on behalf of the Project. If federal funding is sought, the FTA will require completion of a federal environmental clearance process under the *National Environmental Policy Act* (NEPA) and compliance with several FTA analysis requirements, one of which addresses noise and vibration impacts from the streetcar operations. The *L.A. CEQA Thresholds Guide* does not address vibration impacts. Therefore, in order to satisfy the FTA analysis requirement for noise and vibration and do so in conjunction with the present CEQA analyses, the FTA requirements are also documented as part of the technical analyses summarized in the EIR.

Noise and vibration impact criteria for use on federally financed transit projects are defined in FTA's *Transit Noise and Vibration Impact Assessment* (2006) guidance manual. Noise impacts are considered in relative terms and are defined as *moderate* or *severe* taking into account: (a) the land use type potentially affected, (b) the characteristics of the existing noise environment, and (c) the degree to which noise is added to that environment. A graph of these variables is used to make the impact determination (see Figure 3.9-3).

Table 3.9-6 lists the three land use categories that FTA uses for noise assessments, along with the noise metric that is used for each category. For Category 2 land uses, noise exposure is characterized using L_{dn},[2] while for Category 1 and Category 3 land uses, noise exposure is characterized using the maximum 1-hour L_{eq}.[3] It is noteworthy that Category 2 land uses include residences, motels, hotels, and any other place where people typically sleep.

Although not directly correlated, a severe impact under FTA guidance would be roughly equivalent to a significant impact under CEQA, whereas a moderate impact under FTA guidance would be closer in equivalency to a less than significant impact under CEQA. Analysis of impacts under CEQA are addressed later in this section.

Table 3.9-6. FTA Land Use Categories and Noise Metrics

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor $L_{eq}(h)$[a]	A tract of land where quiet is an essential element of the intended purpose of the land use. This category includes lands set aside for serenity and quiet. It also includes outdoor amphitheaters and concert pavilions as well as national historic landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor L_{dn}	Residences and buildings where people sleep. This category includes homes, hospitals, and hotels, places where nighttime sensitivity to noise is assumed to be high.
3	Outdoor $L_{eq}(h)$[a]	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches, places where it is important to avoid interference with speech, meditation, and reading. Cemeteries, monuments, museums, campgrounds, and recreational facilities can be included in this category. Certain historical sites and parks are also included.

Source: *FTA Guidance Manual* 2006.
[a] L_{eq} for the noisiest hour of transit-related activity during hours of noise sensitivity.

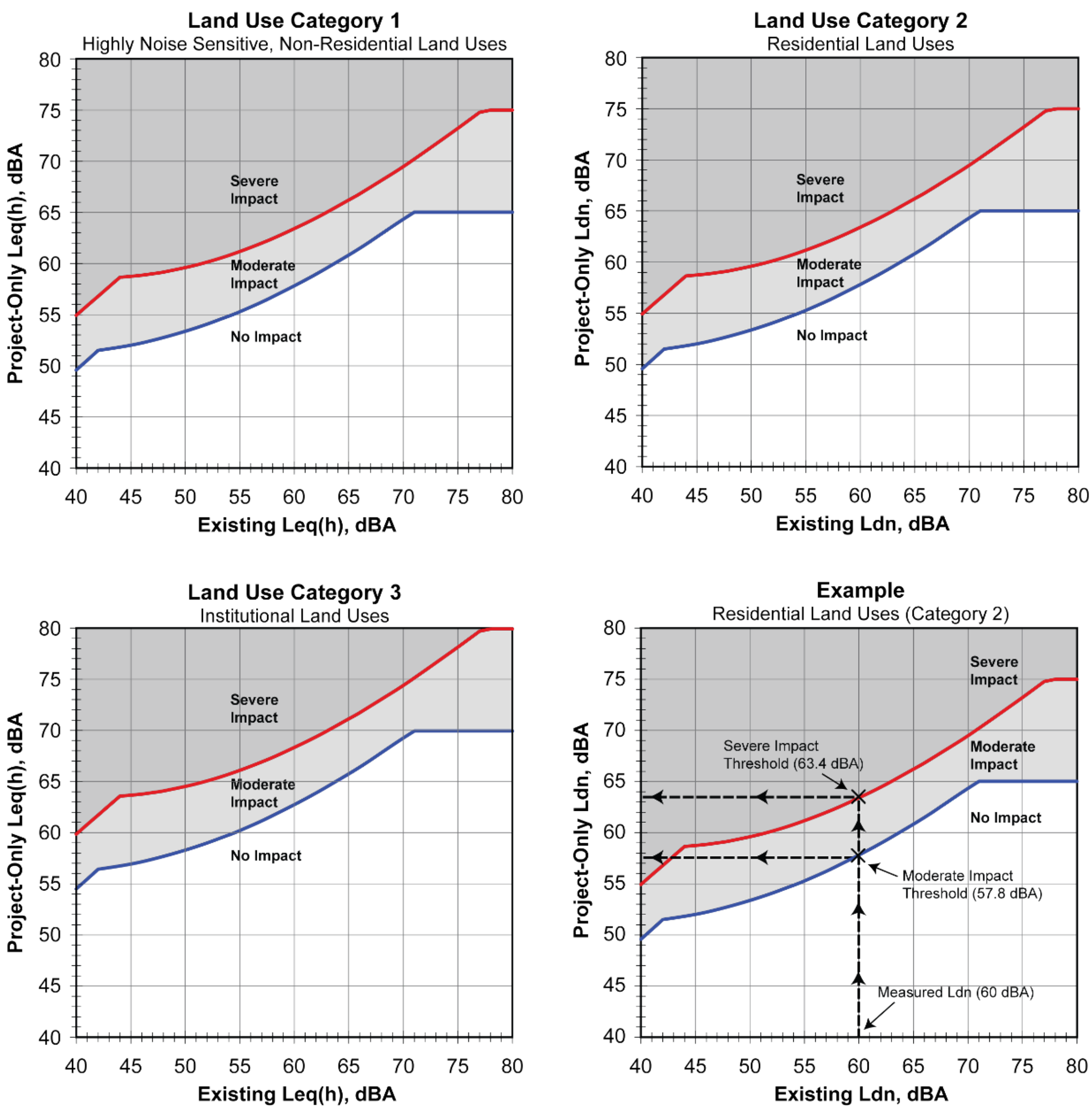
In accordance with the *FTA Guidance Manual*, mitigation to eliminate noise impacts must be investigated for both moderate and severe levels of impact. The manual also states that for severe impacts "…there is a presumption by FTA that mitigation is incorporated into the project unless

[2] L_{dn} = The average dBA level during a 24-hour day, obtained after the addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.

[3] L_{eq} = The average dBA level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA $L_{eq}[h]$.

there are truly extenuating circumstances that prevent it." In considering mitigation for severe impacts in this study, the goal is to reduce noise levels to below the moderate impact threshold. FTA allows more discretion for mitigation of moderate impacts. Consideration is given to several factors, including cost, the number of sensitive receivers affected, community views, the amount by which the predicted levels would exceed the impact threshold, and the sensitivity of the affected receivers. The FTA noise impact criteria are shown in Figure 3.9-3.

Figure 3.9-3: FTA Noise Impact Criteria



Source: *FTA Guidance Manual* 2006

FTA Vibration Thresholds

Table 3.9-7 shows the FTA general assessment criteria for groundborne vibration from rail transit systems. Similar to the FTA noise criteria, there are three categories of sensitive land uses. However, the category definitions for vibration are different from those for noise. The primary difference is in Category 1. For a noise assessment, Category 1 applies to land uses “where quiet is an essential element of their intended purpose.” For a vibration assessment, Category 1 applies to “buildings where vibration would interfere with interior operations.” This applies primarily to spaces that house sensitive research and laboratory equipment, such as scanning electron microscopes. There are no buildings in the project corridor that qualify as Category 1 vibration-sensitive land uses.

Unlike the FTA noise criteria, the vibration criteria do not incorporate any factor to account for the number of vibration events per day, with one exception. For “occasional service,” the FTA impact thresholds are 3 velocity decibels (VdB) higher than they are for “frequent service.” For “infrequent service,” the FTA impact thresholds are 8 VdB higher than they are for “frequent service.”

The frequency criteria are applicable to the Project because there would be more than 70 streetcar trips per day.

The FTA vibration thresholds do not specifically account for existing vibration. Although downtown Los Angeles has substantial volumes of vehicular traffic, including buses and trucks, it is relatively rare for rubber-tired vehicles to generate perceptible ground vibration, unless irregularities in the roadway surface, such as potholes, are present.

Table 3.9-7. FTA Impact Thresholds for Groundborne Vibration, General Impact Assessment

	Groundborne Vibration (VdB re 1 micro-inch/second)		
Land Use Category	**Frequent Events[a]**	**Occasional Events[b]**	**Infrequent Events[c]**
1: Buildings where vibration would interfere with interior operations. Typically land uses include vibration-sensitive research and manufacturing, hospitals with vibration-sensitive equipment, and university research operations.[d]	65	65	65
2: Residences and buildings where people normally sleep.	72	75	80
3: Institutional land uses with primarily daytime use.	75	78	83

Source: *FTA Guidance Manual* 2006.
[a] Frequent events are defined as more than 70 vibration events per day.
[b] Occasional events are defined as 30 to 70 events per day.
[c] Infrequent events are defined as less than 30 events per day.
[d] Vibration-sensitive equipment is not sensitive to groundborne noise.

Some buildings, such as concert halls, recording studios, and theaters, can be very sensitive to vibration; however, they do not fit the three categories listed in Table 3.9-6. Because of the sensitivity of these buildings, they usually warrant more detailed vibration assessment during the environmental evaluation of a transit project. Table 3.9-7 lists the FTA criteria concerning acceptable levels of groundborne noise and vibration for the various categories of "special" buildings. The five theaters on Broadway as well as the Belasco Theater on 11th Street, the Colburn School, the Disney Concert Hall, and the Dorothy Chandler Pavilion are categorized as "special" buildings in the project corridor. The Dorothy Chandler Pavilion is far enough from the streetcar alignment that it would not be affected by streetcar operation. The Disney Concert Hall and the Belasco Theater were both evaluated as concert halls. The Orpheum Theater, on Broadway, was evaluated as a TV recording facility/performance space. The Colburn School is a performance space and a music conservatory with recording facilities. This school was evaluated as a recording facility. The Million Dollar Theater and the Los Angeles Theater, which are located on Broadway, are currently unoccupied but could be revived in the future. The theaters would undergo their own noise studies prior to renovation. The United Artist Theater, also located on Broadway, was recently renovated and reopened. For the purpose of this analysis, these three theaters were evaluated as concert halls. The FTA thresholds pertaining to groundborne noise and vibration impact assessments for various "special" buildings are listed in Table 3.9-8.

Table 3.9-8. Groundborne Noise and Vibration Impact Criteria for Special Buildings

Type of Building	Groundborne Vibration Impact Levels (VdB re 1 micro-inch/second)	Groundborne Noise Impact Levels (dBA)
Concert Hall	65	25
TV Studio	65	25
Recording Studio	65	25
Auditorium	72	30
Theater	72	35
Source: *FTA Guidance Manual* 2006.		

3.9.3.3 Alternative 1: No Project Alternative

No impact. The No Project Alternative represents conditions in the project study area that would remain if the proposed Project would not occur. Under this alternative, the existing noise environment would remain as it is currently and no construction would occur. Therefore, there would not be a temporary or operational increase in the ambient noise environment. Alternative 1 would also not result in vibration-related impacts as the existing vibration environment would not change.

3.9.3.4 Alternative 2: 7th Street with Grand Avenue Extension

Construction Impacts

Construction of Alternative 2 is expected to last for 24 months (18 months of active construction and 6 months of testing). Work is anticipated to be sequenced over several stages. The key steps are work zone staging, rail storage, site preparation and utility construction, track construction, station platform construction, traction power substation (TPSS) construction, overhead contact system (OCS) installation, and maintenance and storage facility (MSF) construction.

Noise

Significant and unavoidable. Construction of the Project has the potential to result in substantial, but temporary increases in local noise levels along the project alignments. The *City of Los Angeles Noise Ordinance* (*Los Angeles Municipal Code*; Chapter IV, Article 1; Section 41.40) allows construction only between 7 a.m. and 9 p.m. on weekdays and between 8 a.m. and 6 p.m. on Saturdays, unless a variance is obtained. As noted in Chapter 2, *Project Description*, nighttime construction may also be required. Construction noise levels would depend on the number of pieces of equipment and the types; their general condition; the amount of time each piece would operate per day; the presence or absence of noise-attenuating features, such as walls; and the location of construction relative to sensitive receivers.

These nighttime activities would require a variance to Section 41.40 of the *Los Angeles Municipal Code* for nighttime work scheduled after 9 p.m. or before 7 a.m. weekdays, after 6 p.m. or before 8 a.m. on Saturdays, or anytime on Sunday.

Table 3.9-9 shows the maximum noise levels that would be generated by the construction equipment at 50 feet during the various stages of construction and the estimated duration of construction. Utility relocation and track construction are anticipated to be the loudest stages of construction.

Table 3.9-9. Construction Activity and Equipment Typical Noise Levels (dBA) at 50 feet

		Typical Maximum Noise Levels from Construction Equipment at 50 feet, dBA														
Activity	**Duration (months)**	**Dozer**	**Backhoe**	**Grader**	**Excavator**	**Crane**	**Paver**	**Roller**	**Generator**	**Compactor**	**Welding Machine**	**Pavement Breaker**	**Concrete Diamond Saw**	**Dump Truck**	**Utility Truck**	**Concrete Truck**
Work Zone Staging	24	--	--	--	--	--	--	--	--	--	--	--	--	--	81	--
Rail Storage	6–12	--	--	--	--	--	--	--	--	--	74	--	--	76	--	--
Site Preparation and Utility Construction	12–18	82	78	85	81	81	80	77	81	83	74	89	90	76	81	78
Track Construction	12–18	82	--	85	81	--	--	--	81	83	--	--	--	--	--	78
Station Platform Construction	6–12	--	--	--	--	81	--	--	81	--	--	--	--	76	--	78
TPSS Installation	3–6	--	--	85	--	81	--	--	81	--	--	--	--	76	--	78
OCS Installation	3–6	--	--	--	--	81	--	--	81	--	--	--	--	--	81	78
MSF Construction	12–15	--	78	--	--	81	--	--	81	--	--	--	--	76	81	78

Comparing the noise levels associated with the various construction activities shown in Table 3.9-9 with the ambient noise levels shown in Table 3.9-3, it is clear that construction noise levels will exceed those specified in the *L.A. CEQA Thresholds Guide* (see Section 3.9.3.2, *Thresholds of Significance*), particularly when more than one construction activity is occurring simultaneously. Individual construction activity levels range from a low of 74 dBA to a high of 90 dBA, measured at 50 feet from the equipment, whereas ambient levels were measured at 63 to 74 dBA. It is likely that L.A. CEQA Thresholds 1 (greater than 10 dBA for more than one day) and 2 (greater than 10 dBA for more than 10 days) would be exceeded. L.A. CEQA Threshold 3 (greater than 5 dBA at sensitive receptors during nighttime hours) may also be exceeded. For these two reasons, the potential for noise impacts would be significant, and Mitigation Measures **MM-NV-C1 through MM-NV-C11** are recommended to address these impacts. Nonetheless, even with implementation of these mitigation measures, construction impacts would remain significant and unavoidable.

Vibration

Less-than-significant impact with mitigation. Some activities, such as compaction, pavement breaking, and the use of excavators, could result in perceptible levels of groundborne vibration. However, these activities would be limited in duration, and below the thresholds for minor cosmetic building damage.

Damage

The FTA damage risk vibration limits are shown in Table 3.9-10. Typical streetcar construction activities, such as pavement breaking, soil compaction, or the use of a hoe ram and bulldozer, would not be expected to generate vibrations that would approach the limits shown in Table 3.9-10. However, because fragile buildings, which would be potentially susceptible to vibration damage (Category IV), may be present in the project area, the use of bulldozers and hoe rams would be restricted from operating any closer than 21 feet from the building (see Section 3.9.4.1). However, with implementation of Mitigation Measures **MM-NV-C12 through MM-NV-C16,** vibration levels would remain below the 0.12 inches for buildings that are extremely susceptible to vibration damage, and below 0.50 inches for reinforced concrete, steel, or timber (no plaster) buildings. Impacts would, therefore, be less-than-significant with mitigation.

Annoyance

The use of high-vibration construction equipment, such as hoe rams, large bulldozers, jack hammers, and load trucks, within 20 feet of Category 2 land uses and 16 feet of Category 3 land uses could exceed the FTA ground-borne noise impact thresholds for annoyance for transit operations (see Tables 3.9-7 and 3.9-8) inside the sensitive receivers. However, the noise from construction equipment is more likely to be higher than the groundborne noise generated by the vibration at the interior of these land uses. As noise from these construction activities would be limited to the noise level limits of the *Los Angeles Noise Ordinance* of 75 dBA during the hours of 7 a.m. to 9 p.m. weekdays, the vibration effects would be regarded as significant.

The use of hoe rams and bulldozers within 50 feet of "special" land uses, such as theaters and concert halls, may be audible as groundborne noise in the interior of buildings. As high-vibration construction equipment would be used only intermittently, its use can be scheduled so that it does not overlap with sensitive activities inside buildings, thereby ensuring that no significant impacts occur. Implementation of Mitigation Measures **MM-NV-C12 through MM-NV-C16** would reduce vibration levels from construction activities to less-than-significant levels.

Table 3.9-10. FTA Damage Risk Vibration Criteria

Building Category	Peak Particle Velocity (inch/second)	Approximated Vibration Level, VdB
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings that are extremely susceptible to vibration damage	0.12	90
Source: *FTA Guidance Manual* 2006.		

Operational Impacts

Operational noise impacts, taking into consideration both streetcar operations and MSF activities, were evaluated under three cases. In the first case, potential impacts only related to streetcar noise were considered. This case responds directly to the FTA criteria. In the second case, potential impacts from traffic noise were considered. L.A. CEQA Threshold 4 was used to assess these impacts. In the third case, combined streetcar and traffic noise were assessed and, again, L.A. CEQA Threshold 4 was used to determine impact significance. All three methods of impact evaluation are presented in the sections below. Detailed information supporting the impact determinations can be found in Appendix I.

Noise from Streetcar Operation

Potential noise impacts were evaluated for streetcar operations. Key assumptions for the noise impact assessment are as follows:

- The noise impact analysis of streetcar operations includes audible warning device noise at streetcar stops and stoplights but does not include warning horns. Warning horns would be used at the operators' discretion to alert pedestrians and motor vehicle drivers to potential safety risks, the same way that horns are used on buses.
- The maximum speed for the streetcars would be 30 mph on Figueroa Street and 25 mph on the rest of the alignment. The speed would be 20 mph as streetcars approach stations and stops.
- The streetcar would operate every 7 minutes during peak hours (6 a.m. to 9 a.m. and 3 p.m. to 6 p.m.), every 10 minutes between 9 a.m. and 3 p.m., and every 15 minutes from 6 p.m. to 2:30 a.m.
- Noise from streetcar operations would be similar to what has been observed at modern streetcar systems in other cities. Modeling of wayside noise for the Project was based upon actual measurements conducted on operations of both the Portland and Seattle streetcars. These two examples yielded the following reference levels (at 50 feet from the source): L_{max} = 74 dBA (at 20 mph); L_{max} = 75 dBA (at 25 mph); L_{max} = 77 dBA (at 30 mph).

Moderate impact (FTA analysis). Estimated noise impact calculations were made at 61 receptor locations. These results are presented in Appendix I and are also shown in Table 3.9-11 below. At 57 receptors, no impact was found. Four locations were identified as having a moderate impact (using FTA criteria) for Alternative 2, from streetcar operations. These impacts are discussed below.

- Moderate noise impacts are predicted outside the Disney Concert Hall (T2) associated with the Grand Avenue Extension (Alternatives 2 and 4). The higher noise levels are due to potential for wheel squeal noise on the Grand Avenue/First Street curve and a crossover. Mitigation is available to reduce the potential noise impact on Disney Hall by installing a "low impact frog" at the 1st Street and Hill Street intersection and wheel dampers, if required. See Mitigation Measure **MM-NV-O1** (Section 3.9.4.3) for additional information. As discussed in Section 3.9.1.1, *Federal Regulations*, predicted project noise level in the moderate noise impact range is considered worthy of mitigation, but FTA allows for discretion by the operator as to whether to commit such mitigation.
- Moderate noise impacts are predicted at two multi-family residential (MFR) buildings on West 11th Street between Grand Avenue and Hope Street (R23), which is associated with all four build alternatives. The building is at least 10 stories. Only the residential units on the 5th floor and lower would be affected, which includes 24 residential units with balconies. These areas are currently exposed to street traffic noise levels that are higher than the streetcar operations noise levels would be. When the predicted project noise level is in the FTA moderate noise impact range, discretion for mitigation is allowed. For moderate noise impacts, FTA guidance states that mitigation measures should be considered and other factors taken into account to determine the magnitude of the impact and the need for mitigation. Mitigation measures, such as sound walls at the edge of the trackwork, are not feasible for this receiver because they would impede the flow of traffic. As the multi-family residence is sound insulated with double pane windows, there is no other mitigation that would be feasible for this receiver. Above the 5th floor, the noise would be sufficiently attenuated by distance to be below the moderate level. This apartment building, and the Kawada Hotel discussed below, are the only residential land uses (FTA Category 2) where potential for noise impact from streetcar operations was identified.

  Moderate noise impacts are predicted at the Kawada Hotel (R35), which is also associated with all four build alternatives. This building is also at least 10 stories in height. The affected units would be 15 hotel rooms without balconies. There are no outdoor areas of human activity at this receiver that would be exposed to streetcar noise. Mitigation measures, such as sound walls at the edge of the trackwork are not feasible for this receiver because the sound walls would impede the flow of traffic. As the hotel building is sound insulated with double pane windows, there is no other mitigation that would be feasible for this receiver.
- Moderate noise impacts are predicted at the future Federal Courthouse to be located on 1st Street between Hill Street and Broadway, which is associated with all four build alternatives. The higher noise levels are due to potential for squeal noise on the Hill Street/1st Street curve and the diamond crossing. As discussed below, mitigation is available to eliminate the potential noise impact on the Federal Courthouse. Mitigation Measure **MM-NV-O1** would reduce this impact to less than significant.

  The results of the FTA noise analysis for Alternatives 2 through 5 are shown in Table 3.9-11. Because a substantial portion of the project alignment is common to all four build alternatives, the table is presented here and will be referred to in later sections. Where differences pertain to specific locations (i.e., 7th Street, 9th Street, Grand Avenue Extension) they are called out as such. The locations of the receivers are shown in Figure 3.9-4.

Table 3.9-11. Summary of FTA Noise Impacts and Mitigation

FTA Land Use Category	ID Number[a]	Alternative	Land Use	Expected FTA Impact		Number of Impacted Receptors[b]	Amount Exceeds Threshold[c] (dBA)	Mitigation Option[d]
				Moderate	Severe			
Streetcar Operations								
1	T2	2 & 4	Concert Hall	Yes	No	1	9	1, 2
2	R23	2, 3, 4 & 5	Multi-Family Residential	Yes	No	24	2	None[f]
	R35	2, 3, 4 & 5	Hotel	Yes	No	15	1	None[g]
3	I2A	2, 3, 4 & 5	Federal Courthouse	Yes	No	1	1	1 or 2
Maintenance and Storage Facility (MSF) Operations								
2	R22	M3	Multi-Family Residential	Yes	No	24	5	3, 4
2	R33	M2	Multi-Family Residential	Yes	No	10	0	3, 4
3	I3	M1	Guadalupe Wedding Chapel	Yes	No	1	5	3, 4

Source: ATS Consulting 2016.

[a] See Figure 3.9-4 for the receiver locations.

[b] Represents the number of residential units (Category 2 land uses) where the impact is predicted.

[c] The amount that predicted noise levels would exceed FTA moderate impact thresholds. At receiver R33 the predicted noise level is the same as the FTA threshold which is considered by FTA as an impact.

[d] Mitigation Option 1 is the use of a "low impact" frog at the nearest crossover.

Mitigation Option 2 is a combination of wheel damper and optimization of profiles to minimize wheel squeal.

Mitigation Option 3 is the use of wheel lubrication at tight radius track within the MSF yards.

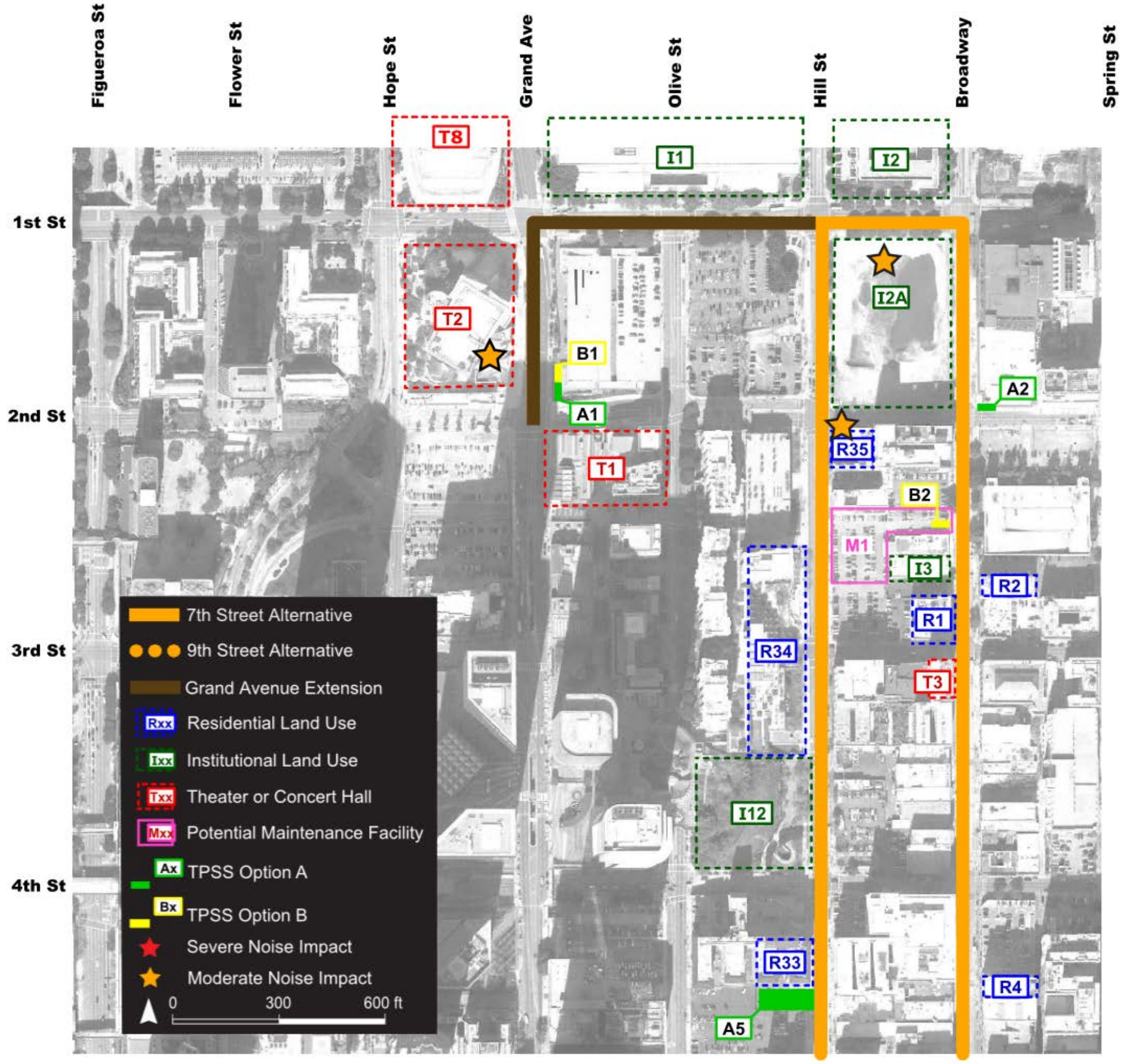
Mitigation Option 4 is the use of "low impact" frogs at all turnouts within the MSF yards.

[e] Existing noise levels would increase in the range of 3.0 to 3.1 dBA, depending on the alternative selected, for the Existing plus Project scenario.

[f] The only outdoor areas of human activity that would be exposed to streetcar noise would be the balconies of the residential units. These areas are currently exposed to street traffic noise levels that are higher than the noise levels from streetcar operations would be. Mitigation measures, such as sound walls at the edge of the trackwork, are not feasible for this receiver because they would impede the flow of traffic. As the multi-family residence is sound insulated with double pane windows, there is no other mitigation that would be feasible for this receiver.

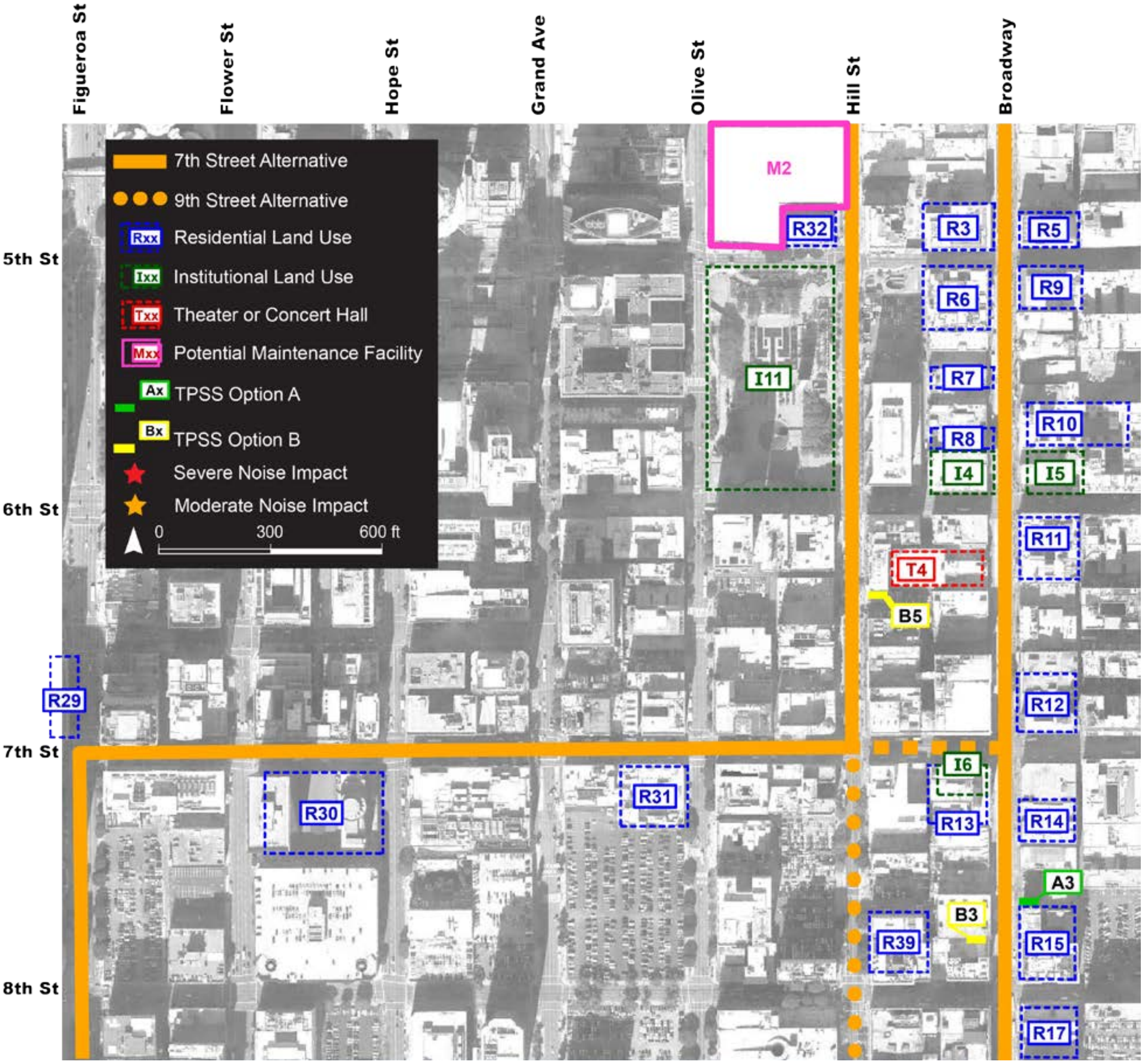
[g] There are no outdoor areas of human activity that would be exposed to streetcar noise. Mitigation measures, such as sound walls at the edge of the trackwork are not feasible for this receiver because the sound walls would impede the flow of traffic. As the hotel building is sound insulated with double pane windows, there is no other mitigation that would be feasible for this receiver

Figure 3.9-4a. Receiver Locations, Diagram 1



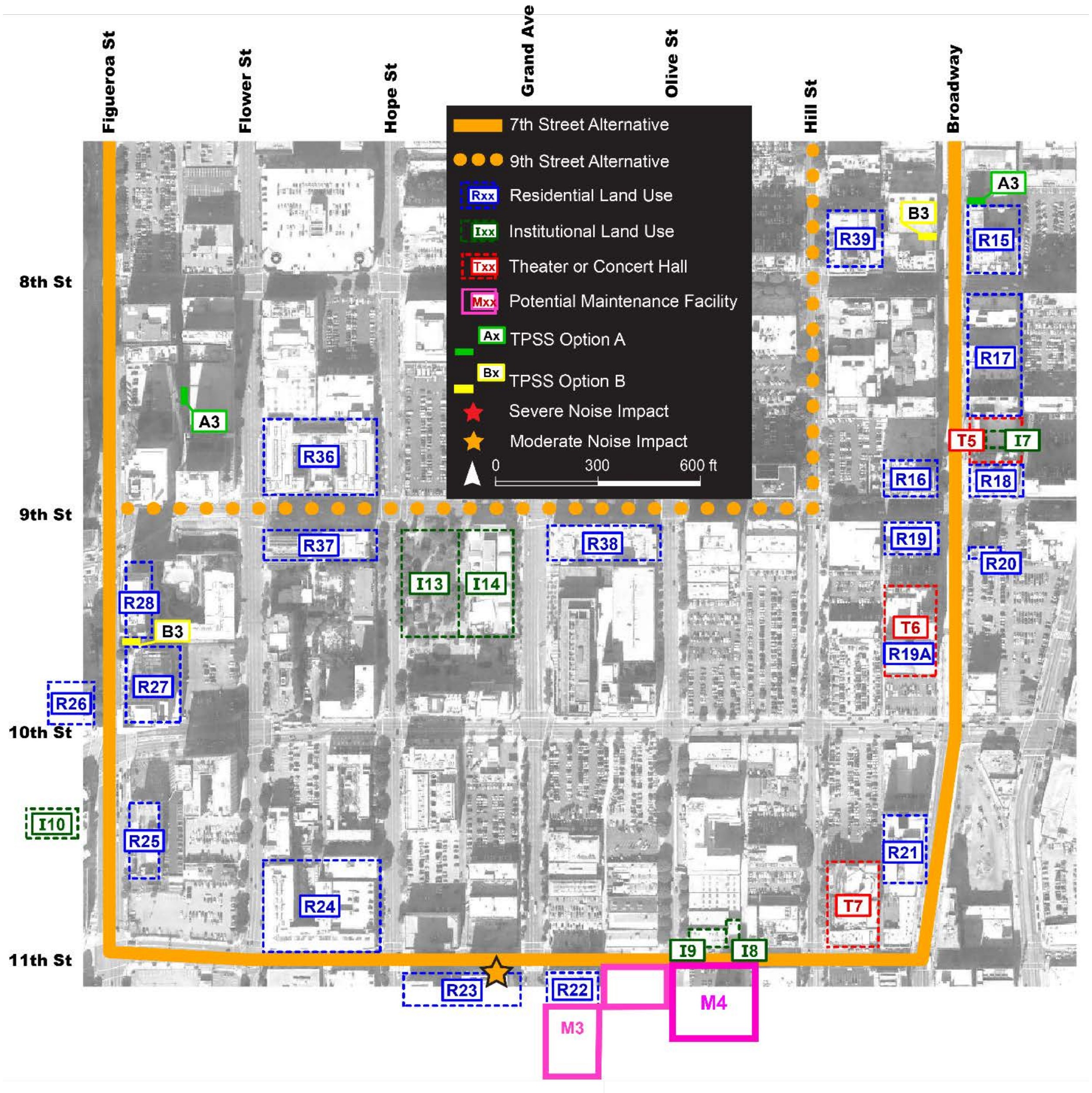
Source: ATS Consulting 2013.

Figure 3.9-4b. Receiver Locations, Diagram 2



Source: ATS Consulting 2013.

Figure 3.9-4c. Receiver Locations, Diagram 3



Source: ATS Consulting 2016.

Streetcar Noise (CEQA Analysis)

Less-than-significant impact. The CEQA determination for this Project compares the cumulative effects of the Project added to the existing conditions with to the Opening Year (2020) and the Horizon Year (2040). Detailed evaluation results are presented in Appendix I and are also shown in Tables 3.9-12, 3.9-13, and 3.9-14.

This page was intentionally left blank.

Table 3.9-12. CEQA Noise Impact Analysis for Category 1 Land Uses – Ldn (dBA)

Receiver ID	Receiver Name	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Existing (2014/2015) Noise[a,b]				Future (2020) Minus Existing (2014/2015) Noise[a,b]				Future (2040) Minus Existing (2014/2015) Noise[a,b]			
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
T1	Colburn School	67.2	67.5	67.5	67.5	67.5	67.8	68.6	68.6	68.6	68.6	68.2	69.0	69.4	69.4	69.4	0.3	0.3	0.3	0.3	1.4	1.4	1.4	1.4	1.8	2.2	2.2	2.2
T2	Disney Concert Hall	67.2	70.3	70.2	70.3	70.2	67.9	71.3	71.4	71.3	71.4	68.3	71.5	71.9	72.0	71.9	**3.1**	**3.0**	**3.1**	**3.0**	**4.1**	**4.2**	**4.1**	**4.2**	**4.3**	**4.7**	**4.8**	**4.7**
T3	Million Dollar Theater	74.4	74.8	74.8	74.8	74.8	74.5	74.8	75.0	75.0	75.0	75	75.5	75.7	75.9	75.9	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	1.1	1.3	1.5	1.5
T4	Los Angeles Theater	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.4	76.5	76.5	0.4	0.4	0.4	0.4	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
T5	Orpheum Theater	76.8	77.0	77.0	77.0	77.0	77.5	78.3	78.4	78.4	78.4	77.9	78.8	79.0	79.2	79.2	0.2	0.2	0.2	0.2	1.5	1.6	1.6	1.6	2.0	2.2	2.4	2.4
T6	United Artist Theater	76.8	77.1	77.1	77.1	77.1	77.6	78.5	78.6	78.6	78.6	78	79.0	79.3	79.4	79.4	0.3	0.3	0.3	0.3	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
T7	Belasco Theater	70.3	71.2	71.2	71.2	71.2	71.5	72.9	73.4	73.4	73.4	71.9	73.8	73.7	74.1	74.1	0.9	0.9	0.9	0.9	2.6	**3.1**	**3.1**	**3.1**	**3.5**	**3.4**	**3.8**	**3.8**
T8	Dorothy Chandler Pavilion	67.2	68.4	68.3	68.4	68.3	67.9	69.5	69.6	69.5	69.6	68.3	69.9	70.2	70.3	70.2	1.2	1.1	1.2	1.1	2.3	2.4	2.3	2.4	2.7	**3.0**	**3.1**	**3.0**

Source: ATS Consulting, January 2016.

Notes:

[a] A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.

[a] Bold fonts indicate that the predicted noise levels exceed the CEQA thresholds.

Table 3.9-13. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA)

			Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Existing (2014/2015) Noise[a,b]				Future (2020) Minus Existing (2014/2015) Noise[a,b]				Future (2040) Minus Existing (2014/2015) Noise[a,b]			
Receiver ID	Description	Location	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
All Build Alternatives																													
R1	MFR	Broadway/3rd St.	76.2	76.5	76.5	76.5	76.5	76.8	77.6	77.7	77.7	77.7	77.3	78.2	78.5	78.6	78.6	0.3	0.3	0.3	0.3	1.4	1.5	1.5	1.5	2.0	2.3	2.4	2.4
R2	MFR	Broadway/3rd St.	76.2	76.5	76.5	76.5	76.5	76.8	77.5	77.7	77.7	77.7	77.3	78.2	78.4	78.6	78.6	0.3	0.3	0.3	0.3	1.3	1.5	1.5	1.5	2.0	2.2	2.4	2.4
R3	MFR	Broadway/3rd St.	76.2	76.5	76.5	76.5	76.5	76.5	76.9	77.1	77.1	77.1	76.9	77.5	77.8	77.9	77.9	0.3	0.3	0.3	0.3	0.7	0.9	0.9	0.9	1.3	1.6	1.7	1.7
R4	MFR	Broadway/4th St.	74.4	74.7	74.7	74.7	74.7	74.7	75.1	75.2	75.2	75.2	75.1	75.6	75.9	76.0	76.0	0.3	0.3	0.3	0.3	0.7	0.8	0.8	0.8	1.2	1.5	1.6	1.6
R5	MFR	Broadway/5th St.	74.4	74.7	74.7	74.7	74.7	74.7	75.2	75.3	75.3	75.3	75.1	75.7	76.0	76.1	76.1	0.3	0.3	0.3	0.3	0.8	0.9	0.9	0.9	1.3	1.6	1.7	1.7
R6	MFR	Broadway/5th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.2	76.4	76.6	76.6	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.8	2.0	2.2	2.2
R7	MFR	Broadway/5th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.5	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.1	1.3	1.3	1.3	1.7	1.9	2.1	2.1
R8	MFR	Broadway/5th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.2	76.4	76.6	76.6	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.8	2.0	2.2	2.2
R9	MFR	Broadway/6th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.1	76.4	76.5	76.5	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.7	2.0	2.1	2.1
R10	MFR	Broadway/6th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.4	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
R11	MFR	Broadway/6th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1
R12	MFR	Broadway/7th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1
R13	MFR	Broadway/7th St.	75.6	75.9	75.9	75.9	75.9	76.4	77.3	77.5	77.5	77.5	76.9	78.0	78.2	78.3	78.3	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.7	2.7
R14	Hotel	Broadway/7th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.9	77.9	78.2	78.3	78.3	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.3	2.6	2.7	2.7
R15	MFR	Broadway/8th St.	75.6	75.9	75.9	75.9	75.9	76.4	77.3	77.5	77.5	77.5	76.9	78.0	78.2	78.4	78.4	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.8	2.8
R16	MFR	Broadway/9th St.	75.6	76.0	76.0	76.0	76.0	76.3	77.1	77.3	77.3	77.3	76.7	77.7	77.9	78.1	78.1	0.4	0.4	0.4	0.4	1.5	1.7	1.7	1.7	2.1	2.3	2.5	2.5
R17	MFR	Broadway/8th St.	75.6	75.8	75.8	75.8	75.8	76.3	77.1	77.2	77.2	77.2	76.7	77.6	77.8	78.0	78.0	0.2	0.2	0.2	0.2	1.5	1.6	1.6	1.6	2.0	2.2	2.4	2.4
R18	MFR	Broadway/9th St.	75.6	75.9	75.9	75.9	75.9	76.3	77.1	77.3	77.3	77.3	76.7	77.6	77.9	78.0	78.0	0.3	0.3	0.3	0.3	1.5	1.7	1.7	1.7	2.0	2.3	2.4	2.4
R19	MFR	Broadway/9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.1	78.2	78.2	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
R19A	MFR	Broadway/9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.1	78.2	78.2	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
R20	MFR	Broadway/9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.0	78.1	78.1	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.4	2.5	2.5
R21	MFR	Broadway/11th St.	75.6	75.8	75.8	75.8	75.8	76.7	77.8	77.9	77.9	77.9	77	78.2	78.5	78.6	78.6	0.2	0.2	0.2	0.2	2.2	2.3	2.3	2.3	2.6	2.9	**3.0**	**3.0**
R22	MFR	11th St./Grand Ave.	65.8	66.9	66.9	66.9	66.9	66.1	66.9	67.4	67.4	67.4	66.5	67.8	67.7	68.1	68.1	1.1	1.1	1.1	1.1	1.1	1.6	1.6	1.6	2.0	1.9	2.3	2.3
R23	MFR	11th St./Hope St.	65.8	68.2	68.2	68.2	68.2	66.3	68.5	68.9	68.9	68.9	66.7	69.2	69.1	69.6	69.6	2.4	2.4	2.4	2.4	2.7	**3.1**	**3.1**	**3.1**	**3.4**	**3.3**	**3.8**	**3.8**
R24	MFR	11th St./Flower St.	65.8	67.2	67.2	67.2	67.2	66.8	68.5	69.0	69.0	69.0	67.2	69.3	69.2	69.6	69.6	1.4	1.4	1.4	1.4	2.7	**3.2**	**3.2**	**3.2**	**3.5**	**3.4**	**3.8**	**3.8**
R25	Hotel	Figueroa/ 11th St.	73.3	73.6	73.6	73.6	73.6	73.5	73.9	74.0	74.0	74.0	74	74.5	74.8	74.9	74.9	0.3	0.3	0.3	0.3	0.6	0.7	0.7	0.7	1.2	1.5	1.6	1.6
R26	Hotel	Figueroa/Olympic St.	73.3	73.7	73.7	73.7	73.7	73.5	74.0	74.1	74.1	74.1	74	74.5	74.9	74.9	74.9	0.4	0.4	0.4	0.4	0.7	0.8	0.8	0.8	1.2	1.6	1.6	1.6
R27	MFR	Figueroa/Olympic St.	73.3	73.7	73.7	73.7	73.7	73.5	74.0	74.1	74.1	74.1	74	74.5	74.9	74.9	74.9	0.4	0.4	0.4	0.4	0.7	0.8	0.8	0.8	1.2	1.6	1.6	1.6
R28	MFR	Figueroa/9th St.	73.3	73.5	73.5	73.5	73.5	73.5	73.9	73.9	73.9	73.9	74	74.4	74.8	74.8	74.8	0.2	0.2	0.2	0.2	0.6	0.6	0.6	0.6	1.1	1.5	1.5	1.5
R32	MFR	Hill St./5th St.	68.1	68.6	68.6	68.6	68.6	68.5	69.3	69.3	69.3	69.3	68.9	69.7	70.0	70.1	70.1	0.5	0.5	0.5	0.5	1.2	1.2	1.2	1.2	1.6	1.9	2.0	2.0
R33	MFR	Hill St./4th St.	68.1	68.7	68.7	68.7	68.7	68.5	69.3	69.4	69.4	69.4	68.9	69.8	70.1	70.2	70.2	0.6	0.6	0.6	0.6	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
R34	MFR	Hill St./3rd St.	68.1	68.6	68.6	68.6	68.6	68.7	69.7	69.8	69.8	69.8	69.1	70.2	70.5	70.5	70.5	0.5	0.5	0.5	0.5	1.6	1.7	1.7	1.7	2.1	2.4	2.4	2.4
R35	Hotel	Hill St./2nd St.	68.1	69.4	69.4	69.4	69.4	68.7	70.4	70.5	70.5	70.5	69.1	70.8	71.1	71.2	71.2	1.3	1.3	1.3	1.3	2.3	2.4	2.4	2.4	2.7	**3.0**	**3.1**	**3.1**

Receiver ID	Description	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Existing (2014/2015) Noise[a,b]				Future (2020) Minus Existing (2014/2015) Noise[a,b]				Future (2040) Minus Existing (2014/2015) Noise[a,b]			
			Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
7th Street Alternatives 2 and 3																													
R29	Hotel	Figueroa/7th St.	71.6	71.9	71.9	71.9	71.9	71.7	72.1	72.1	72.1	72.1	72.2	72.6	73.0	73.0	73.0	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5	1.0	1.4	1.4	1.4
R30	Hotel	7th St./Flower St.	71.6	72.2	72.2	72.0	72.0	71.7	72.2	72.4	72.4	72.2	72.2	72.7	73.1	73.3	73.3	0.6	0.6	0.4	0.4	0.6	0.8	0.8	0.6	1.1	1.5	1.7	1.7
R31	MFR	7th St./Olive St.	71.6	72.2	72.2	72.0	72.0	71.7	72.2	72.4	72.4	72.2	72.2	72.7	73.1	73.3	73.3	0.6	0.6	0.4	0.4	0.6	0.8	0.8	0.6	1.1	1.5	1.7	1.7
9th Street Alternatives 4 and 5																													
R36	MFR	Hope St./Flower St.	72.1	72.4	72.4	72.6	72.6	73.5	75.1	75.1	75.1	75.2	73.8	75.5	75.7	75.7	75.7	0.3	0.3	0.5	0.5	**3.0**	**3.0**	**3.0**	**3.1**	**3.4**	**3.6**	**3.6**	**3.6**
R37	MFR	9th St./Flower St.	72.1	72.3	72.3	72.4	72.4	73.5	75.0	75.0	75.0	75.1	73.8	75.4	75.6	75.6	75.6	0.2	0.2	0.3	0.3	2.9	2.9	2.9	**3.0**	**3.3**	**3.5**	**3.5**	**3.5**
R38	MFR	9th St./Grand Ave.	72.1	72.3	72.3	72.4	72.4	72.9	73.9	73.9	73.9	74.0	73.3	74.4	74.7	74.7	74.7	0.2	0.2	0.3	0.3	1.8	1.8	1.8	1.9	2.3	2.6	2.6	2.6
R39	MFR	Hill St./8th St.	72.1	72.7	72.7	72.7	72.7	72.5	73.4	73.4	73.4	73.4	72.9	73.8	74.1	74.2	74.2	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.3	1.7	2.0	2.1	2.1

Source: ATS Consulting, January 2016.

Notes:

[a] A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.

[b] Bold fonts indicate that the predicted noise levels exceed the CEQA thresholds.

Table 3.9-14. CEQA Noise Impact Analysis for Category 3 Land Uses – Ldn (dBA)

Receiver ID	Receiver Name	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Existing (2014/2015) Noise[a,b]				Future (2020) Minus Existing (2014/2015) Noise[a,b]				Future (2040) Minus Existing (2014/2015) Noise[a,b]			
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
I1	Mosk Courthouse	71.6	73.6	73.5	73.6	73.5	71.9	73.9	74.0	73.9	74.0	72.3	74.2	74.6	74.7	74.6	2.0	1.9	2.0	1.9	2.3	2.4	2.3	2.4	2.6	**3.0**	**3.1**	**3.0**
I2	LA Law Library	71.6	72.9	72.8	72.9	72.8	71.8	73.2	73.2	73.2	73.2	72.3	73.5	74.0	74.0	74.0	1.3	1.2	1.3	1.2	1.6	1.6	1.6	1.6	1.9	2.4	2.4	2.4
I2A	Federal Courthouse	71.6	74.5	74.5	74.5	74.5	72.2	75.4	75.5	75.5	75.5	72.6	75.7	76.0	76.1	76.1	2.9	2.9	2.9	2.9	**3.8**	**3.9**	**3.9**	**3.9**	**4.1**	**4.4**	**4.5**	**4.5**
I3	Guadalupe Wedding Chapel	76.2	76.4	76.4	76.4	76.4	76.8	77.5	77.7	77.7	77.7	77.3	78.1	78.4	78.6	78.6	0.2	0.2	0.2	0.2	1.3	1.5	1.5	1.5	1.9	2.2	2.4	2.4
I4	Optometrist	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1
I5	Clinic	74.4	74.7	74.7	74.7	74.7	74.9	75.5	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.1	1.3	1.3	1.3	1.7	1.9	2.1	2.1
I6	Universal Church (Formerly The State Theater)	74.4	74.7	74.7	74.7	74.7	75.2	76.1	76.3	76.3	76.3	75.7	76.8	77.0	77.1	77.1	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.7	2.7
I7	Optometrist	74.4	74.7	74.7	74.7	74.7	75.1	75.9	76.0	76.0	76.0	75.5	76.4	76.7	76.8	76.8	0.3	0.3	0.3	0.3	1.5	1.6	1.6	1.6	2.0	2.3	2.4	2.4
I8	SIA Tech School	70.3	71.4	71.4	71.4	71.4	70.8	71.6	72.1	72.1	72.1	71.2	72.5	72.4	72.9	72.9	1.1	1.1	1.1	1.1	1.3	1.8	1.8	1.8	2.2	2.1	2.6	2.6
I9	YWCA Job Corps & SIA Tech School	70.3	71.3	71.3	71.3	71.3	70.8	71.6	72.1	72.1	72.1	71.2	72.5	72.4	72.8	72.8	1.0	1.0	1.0	1.0	1.3	1.8	1.8	1.8	2.2	2.1	2.5	2.5
I10	Grammy Museum	70.4	71.0	71.0	71.0	71.0	70.6	71.3	71.4	71.4	71.4	71.1	71.8	72.2	72.3	72.3	0.6	0.6	0.6	0.6	0.9	1.0	1.0	1.0	1.4	1.8	1.9	1.9
I11	Pershing Square	73.1	73.4	73.4	73.4	73.4	73.4	73.9	73.9	73.9	73.9	73.8	74.3	74.7	74.7	74.7	0.3	0.3	0.3	0.3	0.8	0.8	0.8	0.8	1.2	1.6	1.6	1.6
I12	Angels Knoll Park	73.1	73.3	73.3	73.3	73.3	73.5	74.0	74.1	74.1	74.1	73.9	74.5	74.8	74.9	74.9	0.2	0.2	0.2	0.2	0.9	1.0	1.0	1.0	1.4	1.7	1.8	1.8
9th Street Alternatives 4 and 5																												
13	Grand Hope Park	72.1	72.2	72.4	72.4	73.3	74.6	74.6	74.6	74.7	73.7	75.1	75.4	75.4	75.4	75.3	0.1	0.1	0.3	0.3	2.5	2.5	2.5	2.6	**3.0**	**3.3**	**3.3**	**3.3**
I14	FIDM	72.1	72.2	72.4	72.4	73.3	74.6	74.6	74.6	74.7	73.7	75.1	75.4	75.4	75.4	75.3	0.1	0.1	0.3	0.3	2.5	2.5	2.5	2.6	**3.0**	**3.3**	**3.3**	**3.3**

Source: ATS Consulting, January 2016.
Notes:
[a] A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.
[b] Bold fonts indicate that the predicted noise levels exceed the CEQA thresholds.

As shown in the above tables, the Project impact analyses concluded the following:

- The noise levels due to the Project were added to the existing noise levels to determine the cumulative effect of the Project for the 2014/2015 Year. The Project noise levels, without traffic, for the assessment of the Category 1 land uses presented in Table 3.9-12 range from an L_{dn} of 58 to 61 dBA with the exception of Site T2, Disney Concert Hall where the Project noise level is 67 dBA due to the streetcar passby noise, noise squeal, and turnout impact noise. The Category 1 Project noise levels at Sites T1, and T3 through T8 are less than the existing traffic noise; therefore, the Project noise would contribute to the additive noise, but, when viewed as an independent noise source, would not result in a significant impact at those receivers. At Site T2, Disney Concert Hall, the Project noise level is projected to be the same as the existing traffic noise. The Project noise levels at the Category 2 land uses presented in Table 3.9-13 range from an L_{eq} of 56 to 63 dBA, which are less than the existing traffic noise; the Project noise levels at the Category 3 land uses presented in Table 3.9-14 range from an L_{eq} of 56 to 63 dBA, which are less than the existing traffic noise. Therefore, the Project noise would contribute to the additive noise, but, when viewed as an independent noise source, would not result in a significant impact at those Category 2 and 3 receivers.
- Operational noise levels under Alternatives 2 and 4 would exceed the CEQA significance threshold of 3.0 dBA at the Disney Concert Hall (T2) for 2014/2015. However, the noise impact at this receiver can be mitigated to a less-than-significant level by a combination of “low impact” frogs at the turnout track in front of Disney Hall and wheel dampers that would reduce squeal noise at tight radii curves.
- Under all four build alternatives, future noise (2020 and 2040) would result in an increase in noise of more than 3.0 dBA at the Disney Concert Hall (T2). The use of “low impact” frogs at the turnout track in front of Disney Hall and rail lubricant or wheel dampers would reduce the wheel squeal and overall project noise to less-than-significant levels.
- Operational noise levels would not exceed the CEQA significance threshold of 3.0 dBA, for 2014/2015, at any other receiver.
- Future noise (2020 and/or 2040) would exceed the CEQA significance threshold of 3.0 dBA at the following receivers:
    - Belasco Theater (T7) – Alternatives 3, 4, and 5 (2020); all build alternatives (2040).
    - Dorothy Chandler Pavillion (T8) – Alternative 4 (2040).
    - Apartments at Hope/11th Streets (R23) – Alternatives 3, 4, and 5 (2020); all build alternatives (2040).
    - Metlofts at Flower/11th Streets (R24) – Alternatives 3, 4, and 5 (2020); all build alternatives (2040).
    - Kawada Hotel at Hill/2nd Streets (R35) – Alternatives 3, 4, and 5 (2040).
    - Apartments at Hope/Flower Streets (R36) – All build alternatives (2020 and 2040).
    - Skyline Apartments at Flower/9th Streets (R37) – Alternative 5 (2020); all build alternatives (2040).
    - Grand Hope Park (I13) – Alternatives 4 and 5 (2040).
    - FIDM (I14) – Alternatives 4 and 5 (2040).

The exceedances noted above, at receivers T7, T8, R23, R24, R35, R36, R37, I13, and I14, are all due to noise increases resulting from future traffic and not streetcar operations.

TPSS Locations

No impact. The cooling fans are the major noise source on TPSS units. However, low frequency transformer "hum" is usually inaudible except when a receptor is very close to the TPSS unit. The project specification will include a noise limit of 50 dBA at a distance of 50 feet from any part of the TPSS unit that should be met by the contractor. See Mitigation Measure **MM-NV-O3**. Based on this specified noise level limit there would be no noise impacts predicted for the TPSS.

MSF Sites

Less-than-significant impact with mitigation. The MSF would consist of an enclosed building for the maintenance shops and an open area for the storage yards. Pursuant to the City's CEQA Guidelines, consideration would be given to enclosing the yard with solid walls providing sound installation in the MSF building, and insulating sound attenuators on fans and ducts. The normal operations of vehicle repairs would occur within the maintenance shops and would not contribute to the outside noise of streetcar movements in the rail yards. Vehicle washing is expected to occur in an open ended structure with a roof and two side walls that would reduce the noise associated with this activity. Moderate impacts (following FTA methodology for rail impacts) are predicted for the MSF sites at receivers I3, R22, and R33 (see Table 3.9-11). The higher noise levels would be due to wheel squeal and turnout frog impacts in the storage yards. Rail lubrication for the tight radius tracks within the rail yards and the use of "low impact" frogs at the yard turnouts would mitigate the impact to these receivers to a less-than-significant level (Mitigation Measure **MM-NV-02**).

Vibration from Streetcar Operations

Less-than-significant impact with mitigation. The streetcar vibration impact analysis is based on the *FTA Guidance Manual.* Potential vibration impacts were assessed for streetcar operations. Key points from the impact assessment are as follows:

- It is assumed that vibration generated by operation of the streetcar vehicles in downtown Los Angeles would be similar to what was observed for the modern streetcar systems in other cities.
- It is assumed that the maximum speed for the streetcars would be 30 mph on Figueroa Street and 25 mph on the rest of the alignment. The speed would be 20 mph as the streetcars approach stations and stops.
- The ground propagation characteristics used for the predictions are based on four vibration propagation tests that were made in the project corridor. Three of the test sites were at theaters or concert halls. The fourth test site was a parking lot on 9th Street.

The streetcar operational vibration impact assessment for residential land uses is presented in Table 3.9-15 and for institutional land uses is presented in Table 3.9-16.

As shown in Table 3.9-15, there are two receivers (R22 and R35) where the predicted vibration levels at residential land uses would exceed the General Assessment impact threshold. The predicted indoor vibration levels, however, would not exceed the Detailed Assessment impact threshold at any of these receivers. Therefore, no vibration impacts from the streetcar operations are predicted at any Category 2 land uses.

The predicted vibration levels for Category 3 land uses are shown in Table 3.9-16. All of the predicted vibration levels except for the Federal Courthouse would be below the General Assessment impact threshold. The predicted indoor vibration levels would not exceed the Detailed Assessment impact threshold at the Federal Courthouse; therefore, no vibration impacts from streetcar operations are predicted at any Category 3 land uses.

No groundborne noise or groundborne vibration impacts are predicted at buildings that FTA defines as "special." This includes the Disney Concert Hall, the Colburn School, and the historic theaters in the corridor. However, the potential exists for vibration to be transmitted into structures because of the number of underground structures in the project area, such as basements, loading docks, and parking garages. Vibration could be transmitted as a result of the proximity of the underground structures to the concrete slab that would be constructed for the streetcar track. Mitigation measures, such as a resilient mat to break the direct connection, could be required if the track would be less than 1 foot from any part of a building foundation. Mitigation Measure **MM-NV-O4** would reduce operational vibration impacts to a less-than-significant level.

Table 3.9-15. Summary of Vibration Impact Assessment for Category 2 Residential Land Uses

					General Impact Assessment			Detailed Impact Assessment		
Receiver	Desc.[a]	NT Dist.[b] (feet)	Adjacent Street	Speed (mph)	Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[c] (VdB)	Impact Yes/No	# of Units[d]
Alternatives 2, 3, 4, and 5										
R1	MFR	35	Broadway	20	69	72	No	--	--	--
R2	MFR	55	Broadway	20	65	72	No	--	--	--
R3	MFR	35	Broadway	20	69	72	No	--	--	--
R4	MFR	50	Broadway	25	67	72	No	--	--	--
R5	MFR	50	Broadway	20	66	72	No	--	--	--
R6	MFR	35	Broadway	25	71	72	No	--	--	--
R7	MFR	35	Broadway	25	71	72	No	--	--	--
R8	MFR	35	Broadway	20	69	72	No	--	--	--
R9	MFR	50	Broadway	25	67	72	No	--	--	--
R10	MFR	50	Broadway	20	66	72	No	--	--	--
R11	MFR	50	Broadway	20	66	72	No	--	--	--
R12	MFR	50	Broadway	20	66	72	No	--	--	--
R13	MFR	35	Broadway	25	71	72	No	--	--	--
R14	Hotel	50	Broadway	25	67	72	No	--	--	--
R15	MFR	50	Broadway	20	66	72	No	--	--	--
R16	MFR	35	Broadway	25	71	72	No	--	--	--
R17	MFR	50	Broadway	20	66	72	No	--	--	--
R18	MFR	50	Broadway	20	66	72	No	--	--	--
R19	MFR	35	Broadway	25	71	72	No	--	--	--
R19A	MFR	35	Broadway	25	71	72	No	--	--	--
R20	MFR	50	Broadway	25	67	72	No	--	--	--
R21	MFR	35	Broadway	25	71	72	No	--	--	--
R22	MFR	25	11th	25	73	72	Yes	67	No	--
R23	MFR	25	11th	20	72	72	No	--	--	--
R24	MFR	30	11th	25	72	72	No	--	--	--

Receiver	Desc.[a]	NT Dist.[b] (feet)	Adjacent Street	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
					Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[c] (VdB)	Impact Yes/No	# of Units[d]
R25	Hotel	45	Figueroa	35	71	72	No	--	--	--
R26	Hotel	45	Figueroa	35	71	72	No	--	--	--
R27	MFR	40	Figueroa	25	69	72	No	--	--	--
R28	MFR	40	Figueroa	35	72	72	No	--	--	--
R32	MFR	45	Hill	25	68	72	No	--	--	--
R33	MFR	45	Hill	25	68	72	No	--	--	--
R34	MFR	80	Hill	25	62	72	No	--	--	--
R35	Hotel	25	Hill	25	73	72	Yes	67	No	--
Alternatives 2 and 3 only										
R29	Hotel	125	7th	20	54	72	No	--	--	--
R30	Hotel	35	7th	25	71	72	No	--	--	--
R31	MFR	35	7th	25	71	72	No	--	--	--
Alternatives 4 and 5 only										
R36	MFR	40	9th	25	69	72	No	--	--	--
R37	MFR	70	9th	25	64	72	No	--	--	--
R38	MFR	60	9th	25	65	72	No	--	--	--
R39	MFR	25	9th	25	73	72	Yes	67	No	--

[a] Desc. = Type of land use, MFR = multi-family residence.
[b] Distance to the streetcar track is rounded off to the nearest 5 feet.
[c] Maximum 1/3 octave band level in 8 to 80 Hz frequency range.
[d] Number of impacted dwelling units based on Detailed Assessment vibration criteria. Note that only units that are within the impact distance and where people sleep are counted for the vibration impacts.

Table 3.9-16. Summary of Vibration Impact Assessment for Category 3 Institutional Land Uses

Receiver #	Receiver Name	NT Dist.[a] (feet)	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
				Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[b] (VdB)	Impact Yes/No	# of Units
Alternatives 2, 3, 4, and 5									
I1	Mosk Courthouse	50	25	67[c,d]	75	No	--	--	--
I2	LA Law Library	125	20	64	75	No	--	--	--
I2A	Federal Courthouse	30	20	82	80	Yes	77	No	--
I3	Guadalupe Wedding Chapel	35	25	71	75	No	--	--	--
I4	Optometrist	35	20	69	75	No	--	--	--
I5	Clinic	50	20	66	75	No	--	--	--
I6	Universal Church (Formerly The State Theater)	35	25	71	75	No	--	--	--
I7	Optometrist	50	20	66	75	No	--	--	--
I8	SIA Tech School	30	25	72	75	No	--	--	--

Receiver #	Receiver Name	NT Dist.[a] (feet)	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
				Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[b] (VdB)	Impact Yes/No	# of Units
I9	YWCA Job Corps & SIA Tech School	30	20	70	75	No	--	--	--
I10	Grammy Museum	90	25	60	75	No	--	--	--
I11	Pershing Square	50	25	67	75	No	--	--	--
I12	Angels Knoll Park	70	25	64	75	No	--	--	--
Alternatives 4 and 5 Only									
I13	Grand Hope Park	60	25	65	75	No	--	--	--
I14	FIDM	60	25	65	75	No	--	--	--

Source: ATS Consulting 2013.

Notes: Receivers I1 through I12 are common to all the build alternatives. There are no additional Category 3 land uses for Alternatives 2 and 3.

[a] Distance to the near track (NT) is rounded off to the nearest 5 feet.

[b] Maximum 1/3 octave band level in 8 to 80 Hz frequency range.

[c] Includes both inbound and outbound tracks.

[d] Includes +10 dB for vibration amplification due to wheel impacts at special trackwork.

3.9.3.5 Alternative 3: 7th Street without Grand Avenue Extension

Construction Impacts

Less-than-significant impact with mitigation. Noise and vibration impacts during construction for Alternative 3 would be similar to those discussed for Alternative 2, although they would be slightly less due to the fact that the Grand Avenue Extension would not be included. All other impacts associated with Alternative 2 would remain as well as the associated mitigation. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on construction noise and vibration impacts.

Operational Impacts

Noise

Less-than-significant impact with mitigation. Operational noise impacts for Alternative 3 would be the same as those described for Alternative 2, with the exception that the Grand Avenue Extension would not be included. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on operational streetcar noise, traffic noise, combined streetcar and traffic noise, and vibration impacts.

Vibration

Less-than-significant impact with mitigation. As shown in Table 3.9-11, three Category 2 land uses (R29, R30, R33) would be adjacent to Alternatives 2 and 3 only. No vibration impacts at these locations were predicted.

3.9.3.6 Alternative 4: 9th Street with Grand Avenue Extension

Construction Impacts

Less-than-significant impact with mitigation. Noise and vibration impacts during construction for Alternative 4 would be similar to those discussed for Alternative 2, with the exception that construction would occur along 9th Street rather than 7th Street. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on construction noise and vibration impacts.

Operational Impacts

Noise

Less-than-significant impact with mitigation. Operational noise impacts for Alternative 4 would be the same as those described for Alternative 2, with the exception of the following discussion on combined streetcar and traffic noise. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on streetcar noise and traffic noise impacts.

Combined Streetcar and Traffic Noise

Less-than-significant impact with mitigation. Alternative 4 contains two additional receiver sites (R36 and R37) where predicted future noise levels are predicted to exceed the CEQA thresholds. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on combined streetcar and traffic noise impacts. As is noted in Section 3.9.3.4, the additional noise impacts would be attributable to growth in background traffic and not the Project. Additional mitigation would not be required.

Vibration

Less-than-significant impact with mitigation. Streetcar operational vibration impacts for Alternative 4, as presented in Tables 3.9-15 and 3.9-16, would be similar to those described for Alternative 2, with exceptions as follows. The predicted vibration levels are projected to exceed the General Assessment impact threshold at one additional receiver (R39). The conclusion remains that no vibration impacts from the streetcar operations are predicted at any Category 2 land uses, however, because the interior detailed assessment does not show an impact. Also, institutional uses I13 and I14 would be included but also show no impact. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information about vibration impacts.

3.9.3.7 Alternative 5: 9th Street without Grand Avenue Extension

Construction Impacts

Less-than-significant impact with mitigation. Noise and vibration impacts during construction for Alternative 5 would be similar to those discussed for Alternative 3, with the exception that construction would occur along 9th Street rather than 7th Street. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on noise and vibration impacts.

Operational Impacts

Noise

Less-than-significant impact with mitigation. Operational noise impacts for Alternative 5 would be similar to those described for Alternative 3, with the exception that streetcar operations would occur along 9th Street rather than 7th Street. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on streetcar noise, traffic noise, combined streetcar and traffic noise, and vibration impacts.

Vibration

Less-than-significant impact with mitigation. Streetcar operational vibration impacts for Alternative 5 would be the same as those described for Alternative 3 with the exception that streetcar operations would occur along 9th Street rather than 7th Street. See Section 3.9.3.4, *Alternative 2: 7th Street with Grand Avenue Extension*, for detailed information on operational vibration impacts.

3.9.4 Mitigation Measures

3.9.4.1 Construction Noise Mitigation

The measures listed below would reduce noise levels associated with the construction phase of the build alternatives.

MM-NV-C1: The contractor shall limit nighttime construction activities (during the hours from 10 p.m. to 7 a.m.) to generate lower noise levels, which may include, but not be limited to, concrete pouring, field welding, and underground utility work. The City of Los Angeles Department of Public Works (DPW), Bureau of Engineering (BOE), through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C2: The contractor shall use specialty equipment with enclosed engines and/or high-performance mufflers. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C3: The contractor shall locate equipment and staging areas as far from noise-sensitive receivers as practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C4: The contractor shall limit unnecessary idling of equipment. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C5: The contractor shall install temporary noise barriers to enclose stationary noise sources, such as compressors, generators, laydown and staging areas, and other noisy equipment. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C6: The contractor shall reroute construction-related truck traffic away from residential buildings to the extent practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C7: The contractor shall sequence the use of equipment so that simultaneous use of the loudest pieces of equipment is avoided as much as practicable. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector

MM-NV-C8: The contractor shall avoid the use of impact equipment and, where practicable, use non-impact equipment. Non-impact equipment could include electric or hydraulic-powered equipment rather than diesel and gasoline-powered equipment where feasible. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C9: The contractor shall use portable noise control enclosures for welding in the construction staging area. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C10: If a noise variance from Section 41.40(a) of the *Los Angeles Municipal Cod*e is sought, a noise limit shall be specified. The contractor shall employ a combination of the above-listed noise-reducing approaches to meet the noise limit. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C11: Specific measures to be employed to mitigate construction noise impacts shall be developed by the contractor and presented in the form of a Noise Control Plan. The Noise Control Plan shall be submitted for review and approval before the beginning of construction activities. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.9.4.2 Construction Vibration Mitigation

Construction-related vibration activities are unlikely to exceed the impact thresholds shown in Table 3.9-6. However, the following vibration mitigation measures are recommended to minimize the potential for damage to structures in the corridor. This is because of the age of several of the buildings and the vibration-sensitive nature of "special" land uses, such as theaters and concert halls.

MM-NV-C12: A preconstruction survey shall be conducted, including an inspection of building foundations and photographs of pre-existing conditions. The survey can be limited to (1) the first row of buildings along the selected alignment and will include the locations of the glass blocks and associated subterranean vaults and (2) buildings within approximately 200 feet of the construction zone that are deemed to be extremely susceptible to vibration, as determined by local authorities. These will be included in the survey.

The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector

MM-NV-C13: Per the *FTA Guidance Manual*, construction vibration shall be limited to the PPV, ranging from 0.12 inch per second for "buildings identifiable as being extremely susceptible to vibration damage" to 0.5 inch per second for "reinforced concrete, steel, or timber" buildings. The contract specifications shall establish appropriate damage risk vibration limits for historic properties within 200 feet of construction. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C14: The contractor shall be required to monitor vibration at any building where the lower vibration limit is applicable and at any location where complaints about vibration are received from building occupants. This shall include "special" land uses, such as the Disney Concert Hall and the Colburn School. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C15: If the contractor's plan calls for high-vibration construction activities being performed close to structures, the contractor may be required to use alternative procedures that produce lower vibration levels. Examples of high-vibration construction activities include the use of pavement breakers, vibratory compaction, and hoe rams next to sensitive buildings. Alternative procedures shall include the use of non-vibratory compaction in limited areas and concrete saws in place of jackhammers or pavement breakers for demolition. To avoid potential interference with "special" land uses caused by construction vibration, the contractor shall be required to coordinate with building owners to limit high-vibration construction activities to times when sensitive activities are not occurring inside the buildings. For example, the contractor could avoid the use of high-vibration construction equipment during a scheduled performance or recording at the Disney Concert Hall. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

MM-NV-C16: The Contractor shall hire a Mitigation Coordinator to provide notice to venues and sound-sensitive land uses along the corridor at least two weeks in advance of construction activities. The role of the Mitigation Coordinator will be to respond to concerns related to implementation of construction-related mitigation measures. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.9.4.3 Operational Noise Mitigation

The following mitigation measure is recommended for potential impacts on the Disney Concert Hall and the Federal Courthouse association with Alternatives 2 and 4:

MM-NV-O1: The contractor shall install a "low impact" frog, such as a "well designed" flange bearing frog with a ramp angle between 1:20 and 1:100, for special trackwork as well as wheel dampers if wheel squeal occurs. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

Maintenance and Storage Facility Noise Mitigation

Potential moderate noise impacts are predicted at the Guadalupe Wedding Chapel (I3), multi-family apartments (R33), and the Grand Lofts (R22) from MSF sites M1, M2, and M3, respectively. The following mitigation measure would reduce these impacts to less than significant.

MM-NV-O2: The contractor shall use a "low impact" frog, such as a "well designed" flange bearing frog with a ramp angle between 1:20 and 1:100, for all special trackwork within the MSF. Rail lubricators shall be installed at all tight radius curves within the MSF to reduce and control wheel squeal. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

Traction Power Substation Mitigation

MM-NV-O3: During pre-revenue testing, noise measurements shall be taken at the TPSS units to confirm compliance with the Contract Specification noise level limit of 50 dBA at 50 feet from any side of the TPSS unit. Should exceedances of the noise level limit be found to occur, mitigation options shall be identified and considered, including housing shielding or other suitable methods.

3.9.4.4 Operational Vibration Mitigation

There are no sensitive receivers in the project corridor where predicted vibration levels would exceed FTA's Detailed Vibration Assessment impact thresholds. However, it is recommended that vibration-sensitive facilities in the project corridor, such as theaters, concert halls, or recording studios within 100 feet of the streetcar alignment that have not been evaluated in detail, should be studied during final design. This includes the currently unoccupied Million Dollar Theater, Los Angeles Theater, and the United Artist Theater (recently renovated and opened as part of the Ace Hotel). The results of the four vibration tests for the current Project, although comparable, indicate that vibration propagation paths in the downtown area are not just in soil but in the numerous underground structures, the transmission efficiencies of which are not sufficiently straightforward to predict. Performing site-specific tests at these sensitive spaces will verify whether streetcar operations could result in vibration impacts inside sensitive spaces and require suitable mitigation to be designed. The following mitigation measure is recommended:

MM-NV-O4: If the track would be less than 1 foot from any part of a building foundation, mitigation measures, such as a resilient mat installed under the trackbed or comparable design measure, would be used. The DPW BOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contracts Administration Bureau Construction Inspector.

3.9.5 Cumulative Impacts

The study area for cumulative impacts includes the Bunker Hill, Civic Center, Center City/Historic Core, Central City East, Convention Center/Arena, Financial Core, Little Tokyo, South Markets, and South Park neighborhoods. Within the study area, several related projects (see Table 2-4 in Chapter 2, *Project Description*) would be in proximity to the Project and would have construction schedules that could overlap with that of the Project. To the extent that multiple construction projects would be simultaneously underway, significant cumulative impacts could occur. Cumulative noise impacts could also occur due to noise generated by the Project's construction activities in combination with increased noise from other activities in the vicinity. In addition to the related projects listed in Table 2-4, other activities could include construction noise generated by other noise sources such as increased traffic in the vicinity. Impacts related to increased traffic in the vicinity are discussed below. These cumulative impacts would be temporary, however, and the Project would implement the mitigation measures detailed above, which would reduce the Project's contribution to cumulative impacts. Nonetheless, the potential exists for the Project's construction to have a cumulatively considerable contribution to a significant, temporary, cumulative impact.

The Project's operational noise levels were evaluated to determine whether the Project would cause significant noise or vibration impacts on the environment. The noise levels due to the Project, when added to cumulative impacts from background traffic growth, would result in impacts at some locations exceeding thresholds. The Project would provide mitigation sufficient to reduce its contribution to noise and vibration impacts to below a level of significance for impacts directly associated with streetcar operations (see Section 3.9.4, *Mitigation Measures*). However, the noise analysis shows noise impacts exceeding CEQA significance thresholds in 2020 and 2040. These exceedances are attributable to growth in background vehicular traffic, not streetcar operations. Because the Project would act to reduce vehicular traffic, it would not have a cumulatively considerable contribution to cumulatively significant noise impacts in future years that would be primarily associated with vehicular traffic.

The Project would have less-than-significant vibration impacts during operations. It is possible that other related projects would produce vibration impacts, but whether this would occur and to what degree would be speculative. Vibrations will be attenuated as separation distance between projects occurs. For these reasons, the Project is determined to not have a cumulatively considerable contribution to a significant cumulative vibration impact.

This page was intentionally left blank.

3.10 Transportation and Traffic

This section summarizes the potential transportation and traffic impacts related to construction and operation of the Project based on the *Transportation Technical Study* prepared by Intueor Consulting, Inc. (2016). The *Transportation Technical Study* is included as Appendix J to this Draft EIR. This section provides a review of existing conditions, a summary of policies and regulations related to transportation and traffic, and an analysis of the potential environmental impacts that could result from project implementation.

3.10.1 Regulatory Setting

There are no federal or state regulations that outline quantitative measures with which the Project must comply because such standards are set at a local or regional level for roadways that are not under the state or federal highway systems.

With respect to rail safety, the California Public Utilities Commission's (CPUC's) Rail Transit Safety Section prescribes requirements for the design, construction, operation, and maintenance of heavy rail transit, light rail transit, trolleys, and funicular systems. CPUC ensures that all rail transit system extensions and new construction projects undergo a safety certification review and receive approval.

3.10.1.1 2010 Congestion Management Program

The Los Angeles County Metropolitan Transportation Authority (Metro) is responsible for maintaining the performance and standards of major roadways in Los Angeles County through the Congestion Management Program (CMP), which comprises approximately 500 miles of freeways, 400 miles of state-maintained arterials, and 100 miles of locally maintained arterials. None of the roadways or intersections discussed herein are part of the CMP transportation network.

3.10.1.2 Mobility Plan 2035

The City of Los Angeles City Council adopted the *Mobility Plan 2035* on January 20, 2016 (Los Angeles Department of City Planning 2016). The *Mobility Plan 2035* updates and replaces the *City of Los Angeles General Plan Transportation Element*, incorporates "Complete Streets" principles, and lays the policy foundation for how future City of Los Angeles generations will interact with streets. The "Complete Streets" concept takes into account the many community needs that streets fulfill. The plan identifies goals, objectives, policies and action items (programs and projects that serve as guiding tools for making sound transportation decisions). The *2010 Bicycle Plan* is a component of the *Mobility Plan 2035*. See Section 3.8 for an evaluation of the Project's consistency with other City plans and policies.

3.10.1.3 Traffic Study Policies and Procedures

LADOT publishes the *Traffic Study Policies and Procedures*, which establishes traffic impact significance thresholds to determine a project's impacts on the operational efficiency of intersections and roadway/freeway segments (City of Los Angeles; August 2014). The

Transportation Technical Study (Appendix J) used the *Traffic Study Policies and Procedures* thresholds for determining Project-related significant impacts.

3.10.2 Environmental Setting/Affected Environment

3.10.2.1 Study Area

The study area for the purposes of this section is defined by the 65 key signalized study intersections shown in Figures 3.10-1a and 3.10-1b. Study area intersections were identified in coordination with, and approved by, LADOT. The study area intersections are located along the streetcar alignment and adjacent parallel streets that are one block away from the alignment. The intersections along these parallel streets were included to capture potential traffic diversions that may occur due to the reduction in roadway capacity along the alignment and the proposed turn restrictions along Broadway that would result from implementation of the *Broadway Streetscape Master Plan* (BSMP) and also other programmed public improvement projects.

3.10.2.2 Roadway System

Freeways

Freeways provide major regional access to and from the study area and the surrounding areas. The freeways that serve the downtown Los Angeles area include the Santa Ana (Interstate [I] 5)/Hollywood Freeway (US 101), the Pasadena (Arroyo Seco Parkway)/Harbor Freeway (State Route [SR] 110/I-110), and the Santa Monica/San Bernardino Freeway (I-10). No freeways are included within the Project study area.

Arterials

The study area includes the north–south arterials between and including 1st Street and 11th Street, and the east–west arterials between and including Figueroa Street and Spring Street. Table 3.10-1 provides information about the arterials in the study area.

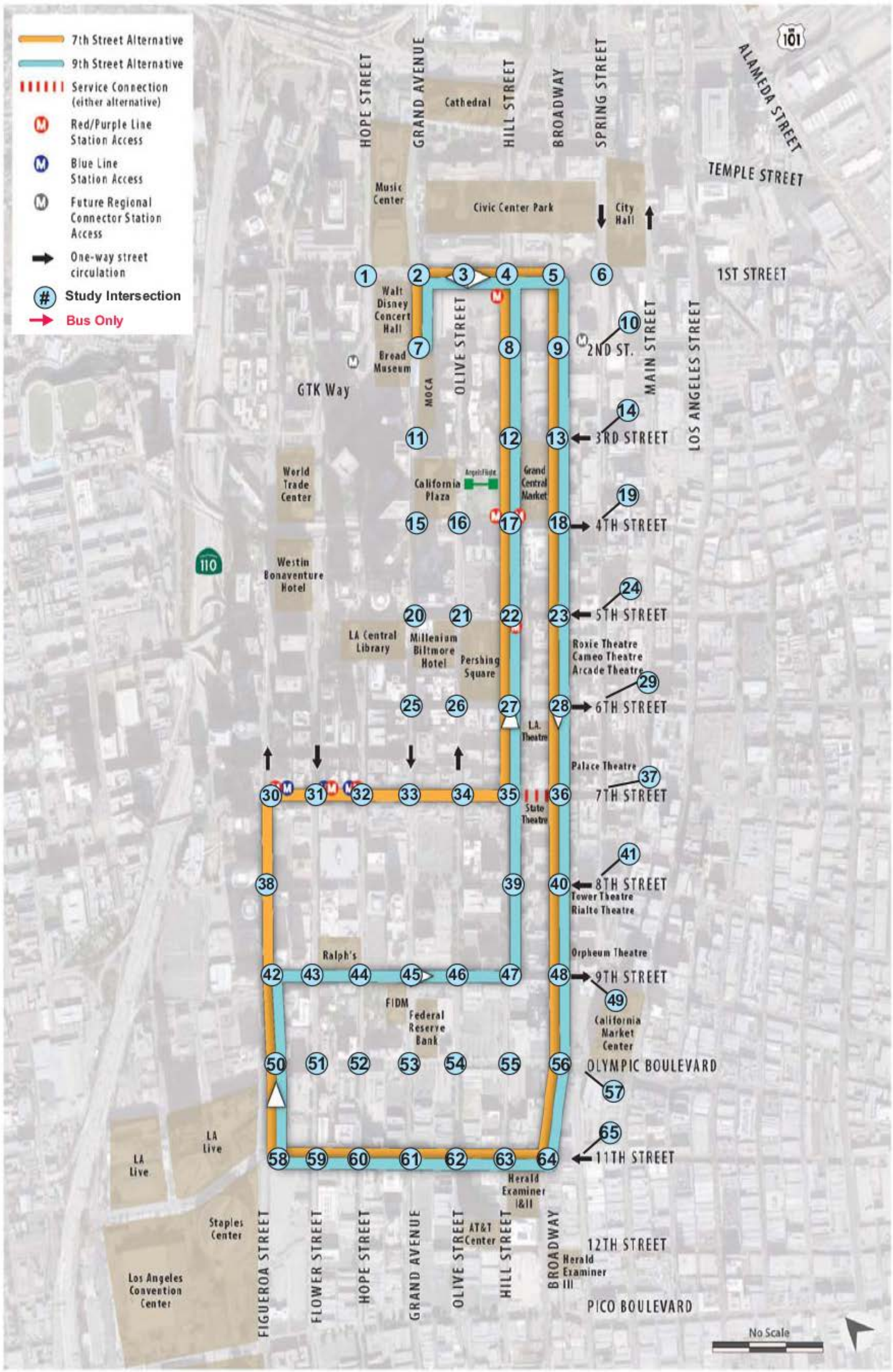
Table 3.10-1. Arterials in the Study Area

Arterial	Roadway Type	Direction of Travel	Vehicles per Day
Figueroa Street	Modified Avenue I	North and South	19,300 to 32,100
Flower Street	Modified Avenue II	North and South	6,700 to 17,600
Grand Avenue	Modified Avenue II	North and South	12,300 to 22,500
Olive Street	Modified Avenue II	North and South	13,300 to 17,300
Hill Street	Modified Avenue II	North and South	18,200 to 22,100
Broadway	Modified Avenue II	North and South	15,500 to 19,800
Spring Street	Modified Avenue II	South	14,500 to 17,800
1st Street	Modified Boulevard II	East and West	14,000 to 23,300
2nd Street	Modified Avenue III	East and West	11,700 to 17,100
3rd Street	Modified Avenue III	West	17,800 to 20,800
4th Street	Modified Avenue III	East	11,500 to 12,700
5th Street	Modified Avenue III	West	21,200 to 22,200

Arterial	Roadway Type	Direction of Travel	Vehicles per Day
6th Street	Modified Avenue III	East	14,100 to 21,000
7th Street	Modified Avenue II	East and West	16,700 to 19,700
8th Street	Modified Avenue III	West	12,500 to 15,300
9th Street	Modified Avenue II	East	13,400 to 21,600
Olympic Boulevard	Modified Avenue I	East and West	20,400 to 32,400
11th Street	Modified Avenue III	West	4,600 to 10,400
Source: Appendix J.			

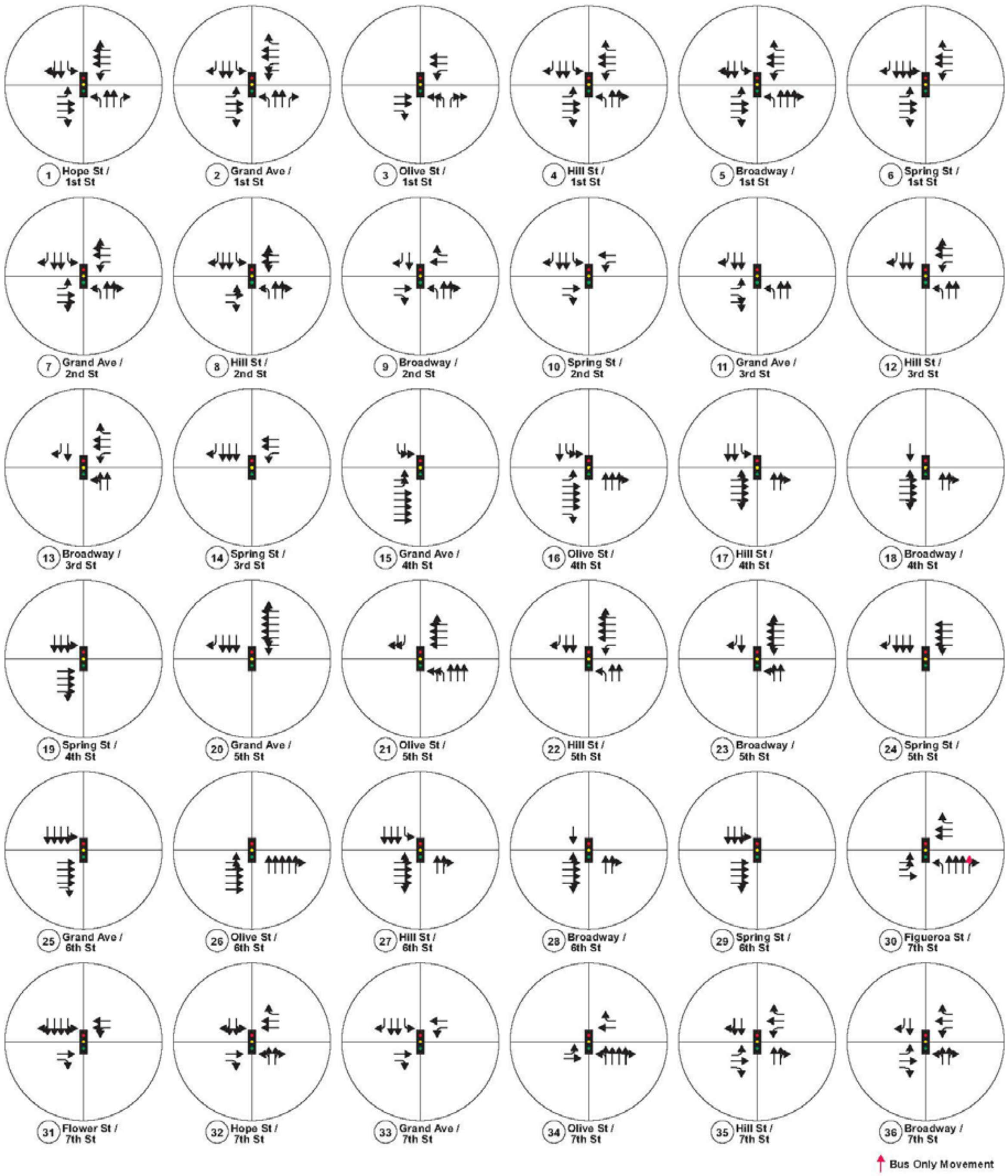
This page intentionally left blank.

Figure 3.10-1a. Study Area Intersections



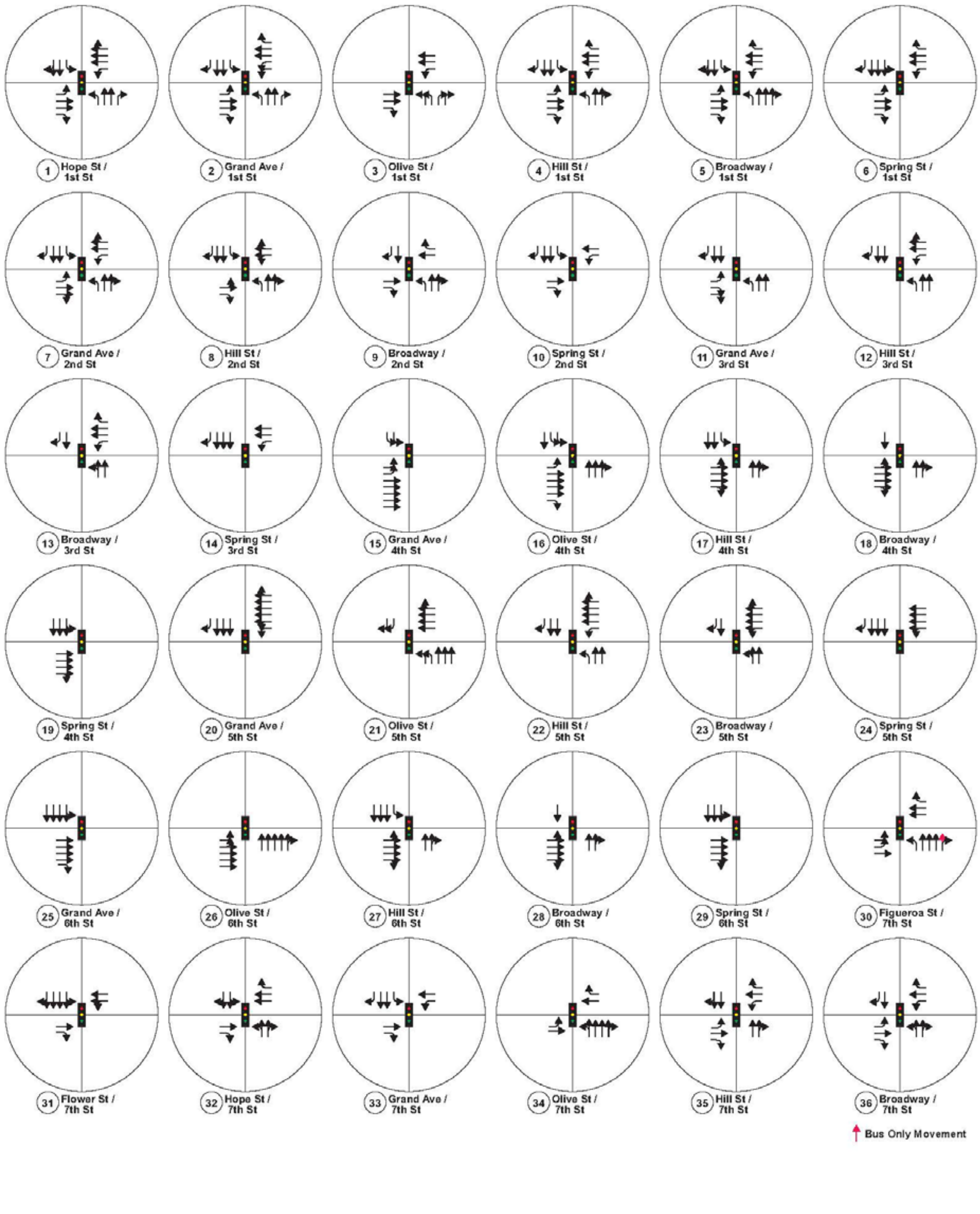
This page intentionally left blank.

Figure 3.10-1b. Existing Intersection Lane Configurations



This page intentionally left blank.

Figure 3.10-1c. Existing Intersection Lane Configurations (continued)



This page intentionally left blank.

3.10.2.3 Existing Traffic Conditions

Intersection Level of Service (LOS)

LOS is a scale used to determine the operational efficiency of intersections based on average delay experienced by vehicles. The levels range from A to F, with LOS A representing free-flowing traffic and LOS F representing severe traffic congestion. Intersections with LOS E are considered to have poor conditions with an average delay of 55 to 80 seconds, and may have long lines of waiting vehicles through several signal cycles. When traffic delays are greater than 80 seconds, operations are designated as LOS F and could have backups from nearby locations or on cross streets that may restrict or prevent movement of vehicles out of the intersection approaches. For more information about the LOS methodology, see Section 3.10.3.1, *Methodology*.

The vast majority (62) of the 65 study area intersections currently perform at LOS D or better during both AM and PM peak hours. However, during the AM peak hour, the Broadway/3rd Street intersection operates at LOS F and the Figueroa Street/Olympic Boulevard intersection operates at LOS E. During the PM peak hour, the Olive Street/9th Street intersection performs at LOS F and the Figueroa Street/Olympic Boulevard intersection performs at LOS E (see Table 3.10-2). Appendix J (Table 3-2) shows the LOS values and estimated delays for all 65 study area intersections.

Table 3.10-2. Existing (2014/2015) Intersection LOS Analysis

#	Intersection	AM		PM	
		LOS	Delay[a]	LOS	Delay[a]
1	Hope Street/1st Street	32.1	C	32.0	C
2	Grand Avenue/1st Street	50.4	D	30.4	C
3	Olive Street/1st Street	16.8	B	30.6	C
4	Hill Street/1st Street	23.9	C	29.3	C
5	Broadway/1st Street	22.4	C	22.8	C
6	Spring Street/1st Street	19.6	B	19.4	B
7	Grand Avenue/2nd Street	17.6	B	28.4	C
8	Hill Street/2nd Street	17.7	B	23.3	C
9	Broadway/2nd Street	26.3	C	23.6	C
10	Spring Street/2nd Street	15.2	B	20.0	B
11	Grand Avenue/3rd Street	2.9	A	18.1	B
12	Hill Street/3rd Street	46.7	D	38.3	D
13	Broadway/3rd Street	116.6	F	21.7	C
14	Spring Street/3rd Street	32.8	C	24.8	C
15	Grand Avenue/4th Street	4.0	A	5.2	A
16	Olive Street/4th Street	19.7	B	19.5	B
17	Hill Street/4th Street	18.3	B	10.8	B
18	Broadway/4th Street	22.0	C	13.0	B
19	Spring Street/4th Street	19.6	B	20.5	C
20	Grand Avenue/5th Street	15.9	B	27.0	C
21	Olive Street/5th Street	36.9	D	44.5	D

#	Intersection	AM		PM	
		LOS	Delay[a]	LOS	Delay[a]
22	Hill Street/5th Street	8.6	A	21.1	C
23	Broadway/5th Street	9.0	A	16.4	B
24	Spring Street/5th Street	16.8	B	12.0	B
25	Grand Avenue/6th Street	19.9	B	20.7	C
26	Olive Street/6th Street	13.1	B	14.1	B
27	Hill Street/6th Street	9.3	A	8.1	A
28	Broadway/6th Street	16.7	B	14.3	B
29	Spring Street/6th Street	7.7	A	10.4	B
30	Figueroa Street/7th Street	34.6	C	27.2	C
31	Flower Street/7th Street	18.7	B	16.3	B
32	Hope Street/7th Street	10.0	A	15.9	B
33	Grand Avenue/7th Street	17.0	B	37.4	D
34	Olive Street/7th Street	17.2	B	19.2	B
35	Hill Street/7th Street	17.0	B	28.6	C
36	Broadway/7th Street	14.3	B	16.9	B
37	Spring Street/7th Street	7.7	A	30.7	C
38	Figueroa Street/8th Street	19.2	B	42.3	D
39	Hill Street/8th Street	8.0	A	28.9	C
40	Broadway/8th Street	21.0	C	40.3	D
41	Spring Street/8th Street	8.6	A	22.2	C
42	Figueroa Street/9th Street	39.4	D	21.7	C
43	Flower Street/9th Street	28.7	C	24.8	C
44	Hope Street/9th Street	14.1	B	16.8	B
45	Grand Avenue/9th Street	15.5	B	16.3	B
46	Olive Street/9th Street	19.9	B	157.0	F
47	Hill Street/9th Street	21.8	C	20.4	C
48	Broadway/9th Street	6.6	A	13.8	B
49	Spring Street/9th Street	12.9	B	29.9	C
50	Figueroa Street/Olympic Boulevard	70.7	E	66.7	E
51	Flower Street/Olympic Boulevard	17.4	B	27.0	C
52	Hope Street/Olympic Boulevard	19.8	B	21.0	C
53	Grand Avenue/Olympic Boulevard	15.4	B	24.1	C
54	Olive Street/Olympic Boulevard	14.5	B	24.4	C
55	Hill Street/Olympic Boulevard	17.1	B	25.8	C
56	Broadway/Olympic Boulevard	20.7	C	19.4	B
57	Main Street/Olympic Boulevard	23.9	C	36.3	D
58	Figueroa Street/11th Street	19.7	B	26.4	C
59	Flower Street/11th Street	18.8	B	16.0	B
60	Hope Street/11th Street	14.9	B	30.4	C
61	Grand Avenue/11th Street	10.1	B	17.5	B

#	Intersection	AM		PM	
		LOS	Delay[a]	LOS	Delay[a]
62	Olive Street/11th Street	17.0	B	18.0	B
63	Hill Street/11th Street	5.5	A	25.7	C
64	Broadway/11th Street	15.8	B	21.0	C
65	Main Street/11th Street	10.9	B	15.3	B

Source: Appendix J.
[a] Average vehicle delay in seconds

Transit Service

The downtown area has the highest concentration of transit service of any area in Los Angeles County. At present, ten transit operators provide service within the downtown area, with the bulk of service provided by Metro. These operators are:

- Antelope Valley Transit Authority
- City of Gardena (Gardena Municipal Bus Lines)
- City of Santa Clarita Transit
- City of Santa Monica (Big Blue Bus)
- Foothill Transit
- City of Los Angeles Department of Transportation (LADOT)
- Los Angeles County Metropolitan Transportation Authority (Metro)
- City of Montebello (Montebello Bus Lines)
- Orange County Transportation Authority
- City of Torrance (Torrance Transit)

Many of these regional transit operators run mostly peak hour, peak direction commuter bus service in and out of the downtown area. LADOT provides frequent Downtown Area Short Hop (DASH) service along short, mostly circular, shuttle routes within the downtown area. These DASH routes provide connections to different destinations in downtown, and also to regional transit. In addition to public transit services, several high-rise office tenants within the downtown area offer private shuttle buses for their employees.

Los Angeles County Metropolitan Transportation Authority (Metro)

Metro provides rail service with the Red Line from Union Station to North Hollywood, the Purple Line from Union Station to Wilshire Center, the Blue Line from the 7th Street/Metro Center to Long Beach, the Expo Line from the 7th Street/Metro Center to Culver City, and the Gold Line from Union Station to Azusa and East Los Angeles. There are seven Metro rail stations within the downtown Los Angeles area.

The majority of bus transit service in the study area, as well as the Los Angeles region, is provided by Metro, which operates approximately 50 short- and long-distance bus lines, as well as cross-town service, express service, and even 24-hour “Owl” service on many routes. The most basic routes provide service to and from downtown along surface streets. Heavily traveled routes often have overlain limited-stop or Metro Rapid bus service.

Los Angeles Department of Transportation (LADOT)

LADOT provides Downtown Area Short Hop (DASH) and Commuter Express bus service. Downtown DASH includes five local circulation routes connecting the study area with Little Tokyo, Chinatown, the Fashion District, and the University of Southern California. Service is frequent and regular (approximately every 5–10 minutes), with service running from 6 a.m. to 7 p.m. on weekdays and some limited service on weekends.

Commuter Express buses provide commuter service from various communities in the region to high-employment centers. Nine routes connect outlying residential communities to downtown Los Angeles and seven routes connect residential communities to other high-employment areas in the region. Commuter Express operates during weekday peak periods, but does not operate outside of peak hours on weekdays or on weekends.

Bicycle and Pedestrian Facilities

The downtown Los Angeles area currently has several bicycle facilities in the form of Class II bike lanes and Class III bike routes.[1] In addition, future development of the network of bicycle facilities in the area is planned, as specified in the City of Los Angeles *2035 Mobility Plan*. Table 3.10-3 shows the existing and proposed bicycle facilities that would interface with the Project, either by sharing or crossing its alignment.

Table 3.10-3. Existing and Proposed Bicycle Facilities in the Study Area

Segment	From	To	Miles within Downtown Area	Facility Type	Existing/ Proposed
S Figueroa Street	Olympic Boulevard	I-10	0.66	Bike Route (Class III)	Existing
S Grand Avenue	7th Street	I-10	1.06	Bike Lane (Class II)	Existing
S Olive Street	7th Street	I-10	1.05	Bike Lane (Class II)	Existing
1st Street	I-110	San Pedro Street	0.91	Bike Lane (Class II)	Existing
7th Street	I-110	Main Street	0.78	Bike Lane (Class II)	Existing
Figueroa Street	US-101	Wilshire Boulevard	1.00	Bike Lane (Class II)	Existing
2nd Street	I-110	Spring Street	0.71	Bike Lane (Class II)	Existing
Spring Street	US-101	Main Street	1.30	Bike Lane (Class II)	Existing
Main Street	US-101	I-10	2.00	Bike Lane (Class II)	Existing
Flower Street	2nd Street	I-10	1.55	Bike Lane (Class II)	Proposed
Hope Street	6th Street	Pico Boulevard	0.87	Bike Friendly Street	Proposed

[1] According to the *California Streets and Highway Code* Section 890.4, a Class II Bikeway (Bike Lane) provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted. A Class III Bikeway (Bike Route) provides a right-of-way on-street or off-street, designated by signs or permanent markings, and is shared with pedestrians and motorists.

Segment	From	To	Miles within Downtown Area	Facility Type	Existing/ Proposed
				(Class III)	
Hill Street	4th Street	I-10	1.42	Bike Lane (Class II)	Proposed
11th Street	Broadway	Figueroa Street	0.45	Bike Lane (Class II)	Proposed
Spring Street	9th Street	Cesar E Chavez Avenue	1.44	Buffered Bike Lane	Existing
Main Street	9th Street	Cesar E Chavez Avenue	1.5	Buffered Bike Lane	Existing
Los Angeles Street	East 1st Street	North Alameda Street/Union Station Driveway	0.47	Buffered Bike Lane	Existing
Source: City of Los Angeles Active Transportation GIS map website 2016.					

According to the City's *Downtown Street Standards*, sidewalk widths vary by roadway width, proximity to traffic, and adjacent land use. In almost all cases, however, it is recommended that sidewalks be a minimum of 10 feet in width. The City's *Downtown Design Guide* also recommends a 6-foot-wide (minimum) continuous path of travel, with an 18- to 24-inch (minimum) space near the curb to provide a buffer against moving traffic.

Pedestrians circulate the study area via sidewalks, signalized crosswalks, and a small number of off-street paths, such as pedestrian bridges. The central downtown area experiences heavy pedestrian traffic on weekdays, particularly during the commute and lunch hours. Pedestrian activity is generally concentrated in areas with dense daytime employment, such as Bunker Hill, the Financial District, and the Historic Core. Some pedestrian activity occurs between the Civic Center and Little Tokyo along 1st and 2nd Streets. The Fashion District attracts many pedestrians during both weekdays and weekends, as does Broadway between 2nd Street and 7th Street. With the recent residential population growth in the downtown area, there are also large volumes of pedestrians outside of normal working hours. In general, redevelopment throughout downtown has increased the housing supply and retail services, which has increased the number of pedestrians visiting popular nighttime destinations. In addition, there are regularly scheduled monthly art walks along Gallery Row, just east of Broadway, and daily events at Staples Center and LA Live.

Parking

A total of 435 on-street parking and loading spaces have been inventoried along the combined project alignments; most of these spaces also occupy areas that are also travel lanes and do not allow parking during peak periods. The results of the parking inventory are summarized in Table 3-3 of Appendix J. Street segments along the project alignment were surveyed in 2013 to identify the existing number of on-street parking and loading spaces and associated peak period parking restriction information. The number of spaces by Alternative alignment are as follows: Alternative 2, 372 spaces; Alternative 3, 367 spaces; Alternative 4, 384 spaces; Alternative 5, 379 spaces.

With respect to the potential MSF sites (see Table 2-3 in Chapter 2, *Project Description*), there are currently the following estimated off-street parking spaces:

- 11th Street and Olive Street (West) – 350 spaces.

- 11th Street and Olive Street (East) – 140 spaces.
- Hill Street and 5th Street – 430 spaces.
- Broadway and 2nd Street – 240 spaces.

3.10.3 Environmental Impact Analysis

3.10.3.1 Methodology

A level of service traffic analysis was performed for the 65 study intersections (see Figures 3.10-1a and 3.10-1b) for the following scenarios:

- Alternative 1: Existing (2014/2015) Without Project
- Alternatives 2 & 3: Existing (2014/2015) 7th Street Alternative, With and Without Grand Avenue Extension[2]
- Alternatives 4 & 5: Existing (2014/2015) 9th Street Alternative, With and Without Grand Avenue Extension[3]
- Alternative 1: Opening Year (2020) Without Project
- Alternatives 2 & 3: Opening Year (2020) 7th Street Alternative, With and Without Grand Avenue Extension
- Alternatives 4 & 5: Opening Year (2020) 9th Street Alternative, With and Without Grand Avenue Extension
- Alternative 1: Horizon Year (2040) Without Project
- Alternatives 2 & 3: Horizon Year (2040) 7th Street Alternative, With and Without Grand Avenue Extension
- Alternatives 4 & 5: Horizon Year (2040) 9th Street Alternative, With and Without Grand Avenue Extension

Traffic Volumes

Weekday traffic volume counts were collected at the 65 study intersections during typical morning and afternoon peak commute periods pursuant to LADOT guidelines, which recommend that counts be collected on days with good weather, on days when schools are in session, and during weeks without a holiday. The traffic counts, which were collected between 2011 and 2015, were compiled from different sources, including LADOT's traffic count database and traffic impact studies for other projects. To check the validity of the older counts and assess potential changes in travel patterns resulting from the recent addition of on-street bike lanes in downtown, traffic counts were updated in 2014/2015 using a representative set of study intersections. To represent existing conditions, all traffic counts were normalized to 2014–2015.

---

[2] Although the project would not be constructed until a later date, the theoretical scenario of layering the project conditions on top of existing (2014/2015) conditions is provided to address State CEQA Guidelines Section 15125, which states that "physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published…will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

[3] Ibid.

Intersection Level of Service

Turning movement counts were collected at the 65 study area intersections in order to assess existing peak hour traffic operating conditions. None of the selected intersections are located on a CMP route and thus a focused CMP analysis is not required. In addition, the LADOT has entered into an agreement with Caltrans that establishes a screening filter used to determine if projects would require a focused Freeway Impact Analysis, which would be beyond the CMP analysis. The Project does not require a Freeway Impact Analysis, because there are no freeways within the study area and the Project is not expected to alter any traffic that would be directed onto the state highway system; therefore the need to engage the screening thresholds would not be triggered.

All of the study intersections are signalized. Each study intersection was analyzed to determine peak-hour operations and LOS. LOS for signalized intersections is generally based on delay values using the Transportation Research Board's 2010 *Highway Capacity Manual* methodology. These values are calculated using the average delay (in seconds) per approaching vehicle. Table 3.10-4 presents the LOS definitions for signalized intersections. *Synchro* software, version 8.0, was used to analyze peak-hour intersection traffic operating conditions. This is a widely accepted tool used to calculate LOS based on the delay methodology presented in the *Highway Capacity Manual*, which is the industry standard for analyzing traffic intersection operating conditions. Furthermore, this methodology approach was reviewed and approved by LADOT prior to initiating the traffic study analysis and evaluation.

Table 3.10-4. Signalized Intersections—LOS Definitions

LOS	Average Vehicle Delay (Seconds)	Definition
A	≤ 10.0	EXCELLENT. No vehicle waits longer than one red light and none of the approach signal phases are fully used.
B	> 10.0 and ≤ 20.0	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	> 20.0 and ≤ 35.0	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	> 35.0 and ≤ 55.0	FAIR. Delays may be substantial during portions of the peak hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	> 55.0 and ≤ 80.0	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 80	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Research Board, Circular No. 212 (January 1980) and Transportation Research Board, *Highway Capacity Manual* (2010).

Streetcar Characteristics

Streetcar vehicles would travel along the proposed alignment with vehicular traffic, predominantly in the curb lane of the roadway using a fixed rail guideway. The streetcar rails would be flush with the roadway surface so that vehicular traffic can also operate in the same lane. A literature review of streetcar studies in other parts of the country was conducted to inform how the physical and operational characteristics of a streetcar would affect roadway capacity. Included in this review were the following sources: *Kansas City Downtown Streetcar Project Transportation Technical Report*, *Portland Streetcar Loop Project Traffic Technical Memorandum*, *Seattle First Hill-Capitol Hill Streetcar Line* and *Seattle South Lake Union Streetcar Project Transportation Technical Report*. Based on this review, it was determined that a streetcar affects roadway capacity and operations in a manner similar to an articulated bus running in the travel lane. Because the streetcar operates on a fixed guideway, safe and reliable operating conditions would be maintained by complying with the applicable CPUC standards and guidelines.

In order to calculate vehicle trips, the streetcar vehicle must be converted to represent a type of vehicle in the traffic stream that operates in the same way as other vehicles, which, in the case of the Project streetcar, would be similar to that of an articulated bus. Then, a passenger car equivalency factor is used to convert the large streetcar vehicle in the traffic stream to the physical and operational characteristics that are similar to those of a passenger car. The estimated Project streetcar vehicle length (approximately 65–85 feet) would be up to 2.13 times the length of a standard 40-foot bus. Therefore, because operation of a standard bus in traffic flow is equivalent to two passenger cars, the operation of a streetcar would be equivalent to 4.26 passenger cars. This factor was then used to reflect both the physical and operational characteristics of a typical Project streetcar vehicle.

Based on the proposed seven-minute headway operation of the streetcar during the peak periods, a total of nine streetcar passbys would operate during the AM and PM peak hours. This is equivalent to approximately 39 additional vehicle trips during each AM and PM peak hour. The additional vehicle trips take into consideration the operating characteristics of a streetcar vehicle, including start-up delays.

Based on estimates from the Federal Transit Administration's STOPS model, streetcar service would result in a shift among travel modes, including auto, bus, rail, bicycle and pedestrian modes. Although revitalization of the study area may generate new trips that would utilize the streetcar during the off-peak weekday period and the weekend, it is anticipated that, during the AM and PM commute peak hours, the availability of streetcar service would result in a net mode shift of existing trips toward transit, which would attract patrons to use the streetcar. Commute trips would be generated by streetcar operators and MSF workers, but the few number of trips would not alter traffic operations in the project area due to their low volumes.

3.10.3.2 Thresholds of Significance

L.A. CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide* (2006) identifies thresholds of significance for transportation in several sub-categories. These include: intersection capacity, street segment capacity, freeway capacity, neighborhood intrusion, project access, transit system capacity, parking, and in-street construction impacts. Project access, which is intended to address development projects, is further defined as operational (i.e., level of service) and bicycle, pedestrian and vehicular safety. In addition, the State CEQA Guidelines require an analysis of consistency with adopted plans. The following sections further describe how these thresholds are addressed in this EIR.

Intersection Capacity

For intersection capacity, the thresholds of significance are based on the latest set of revised guidelines set forth by the LADOT in its *Traffic Study Policies and Procedures* (August 2014). These thresholds are defined as changes in per vehicle delay associated with intersection levels of service. Under this definition, a proposed project would have a significant impact on intersection capacity if the project traffic would result in the following delays at study area intersections, under the "with project" condition:

- If final LOS is C, an increase in average delay of ≥6.0 seconds.
- If final LOS is D, an increase in average delay of ≥4.0 seconds.
- If final LOS is E or F, an increase in average delay of ≥2.5 seconds.

Street Segment Capacity

Given the close proximity of intersections to one another in downtown Los Angeles, a street segment capacity analysis would yield similar results ass those produced by the intersection LOS analysis that was undertaken for the *Transportation Technical Study* (Appendix J). It was determined that a street segment capacity analysis would not yield additional information and therefore was not undertaken.

Freeway Capacity

No freeways or access ramps are located within the defined Project study area nor would the Project result in any changes affecting access to the nearby freeways; therefore, this threshold does not apply.

Neighborhood Intrusion Impacts

Based on the screening criteria for neighborhood intrusion impacts in the *L.A. CEQA Thresholds Guide*, a project that does not generate more than 120 daily vehicle trips on a local residential street would not normally have a significant impact. All trips generated by the Project would occur on roadways classified as a Modified Avenue I, II, or III, or a Modified Boulevard II, as specified in Table 3.10-1, none of which are considered local residential streets. Consequently, no further analysis is needed.

Project Access

As is noted above, this threshold would typically apply to development projects and includes components that address operational impacts and bicycle, pedestrian and vehicular safety. Only one component of the Project would be classified as a development project and that would be the MSF. The operational threshold is described as follows: A project would normally have a significant project access impact if the intersection(s) nearest the primary site access is/are projected to operate at LOS E or F during the AM or PM peak hour, under cumulative plus project conditions. Level of service impacts are addressed for each of the 65 downtown intersections included in the study area, some of which are in proximity to one or another MSF site.

The *L.A. CEQA Thresholds Guide* also include components that address bicycle, pedestrian and vehicular safety, as stated below.

Bicycle, Pedestrian and Vehicular Safety

The determination of significance shall be on a case-by-case basis, considering the following factors:

- The amount of pedestrian activity at project access points.
- Design features/physical configurations that affect the visibility of pedestrians and bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists or that could substantially increase hazards to pedestrians or bicyclists.
- The type of bicycle facility the project driveway(s) crosses and the level of utilization.
- The physical conditions of the site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle or vehicle/vehicle impacts.

Bicycle, pedestrian and vehicular safety are important considerations for the Project as a whole. They are addressed under each of the alternatives.

Transit System Capacity

The *L.A CEQA Thresholds Guide* states that the determination of significance related to transit system capacity is to be made on a case-by-case basis, considering the projected number of additional transit passengers expected with implementation of the Project and available transit capacity. The Project is, itself, a transit mode and it would provide additional capacity to the general public transit system operating in downtown Los Angeles. Since the Project would act to accommodate, rather than increase, transit demand, this threshold does not apply as stated. However, because the Project would contribute to transit services in downtown, its role in that context is described under each alternative.

Parking

Appendix G of the State CEQA Guidelines was amended in 2011 to no longer require an analysis of parking as an environmental impact. Therefore, effects related to parking are presented for informational purposes only.

In-Street Construction Impacts

The determination of significance is to be made on a case-by-case basis, considering temporary traffic impacts resulting in street or lane closures, temporary loss of access for vehicles or pedestrians, and temporary loss of bus stops or rerouting of bus lines. In-street construction impacts are discussed under the construction subsection for each alternative.

Plan Consistency

As stated in the State CEQA Guidelines, Appendix G, a project would have a significant impact if it conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all the modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Consistency with plans, including those that address transportation, is evaluated in Section 3.8 of this EIR.

3.10.3.3 Impacts

Alternative 1: No Project Alternative

Construction Impacts

No impact. The No Project Alternative would not result in streetcar-related construction activities. Due to the ongoing development of downtown, various projects will require construction that may encroach into portions of the street system. In a similar fashion, ongoing improvements to the downtown street system may occur over time, with associated construction activities affecting portions of the street system.

Operational Impacts

Intersection Capacity

No Impact. As is noted in Section 3.10.2.3, three study area intersections currently operate at poor levels of service; these are Broadway/3rd Street, Olive Street/9th Street and Figueroa Street/Olympic Boulevard.

In 2020, without the Project, 12 study area intersections would operate at poor levels of service.. These intersections are:

- Grand Avenue/1st Street (AM LOS D; delay = 61.4 sec. / PM LOS D; delay = 34.6 sec.)
- Broadway/2nd Street (AM LOS E; delay = 60.9 sec. / PM LOS C; delay = 33.1 sec.)
- Hill Street/3rd Street (AM LOS D; delay = 53.1 sec. / PM LOS E; delay = 56.9 sec.)
- Broadway/3rd Street (AM LOS F; delay = 121.4 sec. / PM LOS C; delay = 22.4 sec.)
- Figueroa Street/7th Street (AM LOS F; delay = 145.3 sec. / PM LOS F; delay = 84.0 sec.)
- Grand Avenue/7th Street (AM LOS B; delay = 17.8 sec. / PM LOS E; delay = 56.0 sec.)
- Figueroa Street/8th Street (AM LOS C; delay = 33.8 sec. / PM LOS F; delay = 148.4 sec.)
- Figueroa Street/9th Street (AM LOS F; delay = 142.1 sec. / PM LOS D; delay = 40.7 sec.)
- Olive Street/9th Street (AM LOS C; delay = 27.4 sec. / PM LOS F; delay = 227.4 sec.)
- Figueroa Street/Olympic Boulevard (AM LOS F; delay = 108.2 sec. / PM LOS F; delay = 86.2 sec.)
- Figueroa Street/11th Street (AM LOS F; delay = 114.6 sec. / PM LOS E; delay = 71.8 sec.)
- Broadway/11th Street (AM LOS C; delay = 21.1 sec. / PM LOS E; delay = 65.0 sec.)

In the horizon year of 2040, without the Project, the 12 study area intersections identified above would continue to operate at poor levels of service. Four additional study area intersections would also have these characteristics. These are:

- Hope Street/1st Street (AM LOS; delay = 64.0 sec. / PM LOS D; delay = 47.9 sec.)
- Spring Street/3rd Street (AM LOS; delay = 59.1 sec. / PM LOS C; delay = 30.0 sec.)
- Main Street/Olympic Boulevard (AM LOS D; delay = 38.9 sec. / PM LOS E; delay = 65.3 sec.)
- Hill Street/11th Street (AM LOS A; delay = 8.3 sec. / PM LOS E; delay = 55.4 sec.)

Because the impact significance threshold (see Section 3.10.3.2) is referenced to the "with project" condition, the above-described impacts would represent baseline conditions in 2020 and 2040.

Bicycle, Pedestrian and Vehicular Safety

Less than significant impact. Table 3.10-3 shows a number of existing and planned bicycle facilities in the Project study area. There has been a growing interest by the bicycle community to have access and improved facilities in many locations throughout the region, including downtown. With the approval of the *City of Los Angeles 2010 Bicycle Plan*, various projects will be implemented throughout the city, including the downtown, over time.

As is noted in section 3.10.2.3, downtown experiences heavy pedestrian traffic, particularly on weekdays and during the commute and lunch hours, but also during the evenings and on weekends. It is expected that pedestrian activity will increase over time, owing to the renewed interest and expected growth in downtown residential development. Accompanying this is a policy focus on improving the pedestrian environment in downtown, with several projects (e.g., *Broadway Streetscape Master Plan*) modifying portions of the sidewalk system to improve the pedestrian experience. Under the No Project Alternative, pedestrian safety will continue to be controlled via the downtown intersection signals and pedestrian improvements will continue to be implemented.

Vehicular safety in downtown is controlled through the downtown traffic signal system, which is continually maintained and improved by the LADOT. It is expected that the surveillance and improvement of the signal system will continue over time.

Transit System Capacity

Less than significant impact. As is noted earlier in this section, downtown is served by a variety of transit operators and includes both regional commuter and local circulator routes. A major component of this system is the continued development of Metro heavy and light rail service. By 2020, the Metro Regional Connector project will be in place, providing a new seamless connection between the 7thStreet/Metro Center Station and Union Station. Over time, additional improvements to both rail and bus service will be made in response to growing demand.

Parking

Less than significant impact. Parking in downtown is provided by both on-street parking spaces and off-street parking lots. As is noted in section 3.10.2.3, a total of 435 on-street parking spaces were inventoried along the collective Project routes (i.e., between 367 and 384 spaces, depending upon Alternative). In the absence of the Project, downtown parking availability will both continue to diminish as a result of ongoing development pressure to convert current off-street parking lots into office and residential projects, but also off-street parking spaces associated with those development projects will be created. In addition, policies at the state and local levels will likely continue to promote fewer parking opportunities in favor of higher use of transit.

Alternative 2: 7th Street Alternative With Grand Avenue Extension

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. Construction of Alternative 2 could temporarily reduce intersection capacity, as temporary lane closures would be required along the alignment for utility relocation, track-laying, and catenary system installation activities.

Construction activities would typically take place between the hours of 7 a.m. and 9 p.m., in accordance with *Los Angeles Municipal Code* (LAMC) Section 41.40(a). To expedite construction activities, certain construction activities may occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak hours (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with the Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which contain an exemption to the rush hour roadway construction prohibition for major public works projects with traffic management plans (see Section 3.10.4, *Mitigation Measures*). Construction would comply with applicable provisions of the LAMC, the latest *Standard Specifications for Public Works Construction*, the LABOE *BrownBook*, and the *Work Area Traffic Control Handbook.*

To the extent practicable, traffic lanes would be kept open in both directions on two-way roadways and in one direction on one-way roadways, particularly during periods of peak traffic operations. Where space is available, a minimum of one traffic lane and a left-turn pocket would be provided. Access to residences and businesses would be maintained throughout the construction period., by leaving at least one access point open to traffic. For businesses or residences with single access points, that access point would be maintained through the use of temporary detours, steel plates, and half-closures of driveways. To the extent feasible, full road closures, when and if required, would take place during the night hours.

Designated haul routes for trucks would be identified prior to construction. These routes would be selected to minimize noise, vibration, and other impacts. Because construction work would occur in the downtown area, it is anticipated that trucks would travel from the excavation site to the nearest freeway ramp and use the adjacent freeways to haul away the excavated material. During the construction period, approximately 10 to 15 trucks per day are currently estimated to be required to haul away materials or for utility relocation and MSF excavation.

The Project's *Construction Methods Technical Memorandum* (Appendix C) presents sketches of typical work zone and traffic control cross sections along the project alignment. Decreases in capacity due to temporary lane closures would result in an increase in delay and a deterioration in LOS, particularly when construction activities are close to intersections that are operating at LOS D or worse during the Project opening-year (2020). Impacts would be short term and generally limited to two to three weeks for each affected roadway, to accommodate the linear sequencing of utility relocation and track installation work. This impact would be significant prior to the implementation of Mitigation Measure **MM-TRAF-C1 and MM-TRAF-C2**. Subsequent to mitigation, a less than significant impact would be expected.

Bicycle, Pedestrian, and Vehicular Safety

Less-than-significant impact with mitigation. During construction, travel lanes would be kept open to the extent practicable, and the sidewalks would remain open to pedestrians. The work zone would be protected by pedestrian fencing on the sidewalk side. Pedestrian access would remain open along the sidewalk, and temporary ramps and walkways would be provided by the contractor to maintain *Americans with Disabilities Act* accessibility at intersections and crosswalks. Dedicated bicycle lanes that could be affected by work zones would be kept open, to the extent practicable and safe, as determined by the LADOT. Closure of such lanes, where needed, would be kept to a practical minimum and reopened when construction activity moves on to the next segment. Bicycle travel would be maintained during the construction period in the open traffic lanes, or in some cases through the use of temporary detours. This would be communicated as part of outreach efforts occurring as part of the Traffic Management Plan (TMP) prior to the initiation of construction work zones. Because bicycle and pedestrian facilities in the vicinity of the Alternative 2 alignment would remain open during the construction period and appropriate safety precautions would be followed, impacts would be less than significant.

With respect to vehicular safety, construction activities would require the use and temporary storage of equipment that would be incompatible with public roadways. Use and storage of such construction equipment would be limited to designated staging areas and the segment of the project alignment currently under construction. Equipment would occupy public roadways for brief periods and would be separated from vehicular traffic by a barrier and from pedestrian traffic by a fence. Installation of the Overhead Contact System (OCS) would include the use of small cranes, bucket trucks, and other equipment for installation of the wires along the project alignment. During the times that wires are strung at cross streets, partial street closures of a few hours duration would be anticipated. Overall, impacts related to transportation safety during the construction period would be less than significant because there would be physical buffers between construction activities and users of the transportation network.

Emergency service provider access to residences and businesses would be maintained throughout the construction period. To the extent feasible, full lane closures would take place during nighttime hours, but emergency access would be maintained by using adjacent streets. Although traffic operations at intersections adjacent to construction activities may temporarily deteriorate as a result of the reduced capacity, the TMP identified in **MM-TRAF-C1** would require prior notification of construction activities to emergency service providers, allowing first responders to access properties via alternate routes. Therefore, impacts related to emergency access during the construction of the Project would be less than significant.

Transit System Capacity

Less-than-significant impact with mitigation. Construction activities under Alternative 2 are not anticipated to result in additional passengers using transit modes in the project vicinity, because construction workers arrive and depart at irregular hours and also because they must transport equipment and tools, which is not compatible with public transit use. Although there would be temporary delays to buses associated with lane closures along the project alignment throughout the construction period, such impacts are not anticipated to result in additional passengers on the transit system such that capacity would be exceeded.

Bus lines that would be affected by lane closures due to construction activities would continue to operate, where feasible, in the remaining traffic lanes. When temporary full road closures must occur, bus lines would be rerouted to adjacent streets in a manner intended to minimize the inconvenience to bus passengers. If a block is closed that includes a bus stop, the bus stop would be temporarily relocated to the portion of the street segment that is open to bus service.

Before any major rerouting changes are made as result of the Project, fliers would be provided on buses or posted at stops at least two weeks in advance to notify riders of route modifications. In addition, hoods would be placed over bus stop signs, also notifying riders of what modifications have been made to the bus route. Delays associated with lane closures would affect public transit vehicles if services cannot be rerouted. Because the effects would be temporary, and because the TMP identified in Mitigation Measure **MM-TRAF-C1** would be used to keep the community informed of all construction activities affecting bus routes in the downtown Los Angeles area, the impact would be less than significant.

Parking

It may be necessary to prohibit on-street curb parking when traffic lanes are closed due to construction activities. Existing parking meters affected by construction would be removed or covered as directed by the LADOT. Contractors would be required to have employees park off-street at City-approved locations to minimize the temporary loss of on-street parking. There may be some inconvenience associated with a reduction of on-street parking spaces. The temporary removal of on-street parking along the project alignment would not substantially alter the overall availability of parking in downtown.

Operational Impacts

Intersection Capacity

Existing 2014/2015 Scenario

Significant impact. During the 2014/2015 AM peak hour under the Alternative 2 scenario, 26 of the 65 study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be determined significant at the Hill Street/1st Street and Hill Street/7th Street intersections, which is due to the addition of a protected signal phase for the streetcar to turn left from northbound Hill Street to westbound 1st Street and from eastbound 7th Street to northbound Hill Street.

During the 2014/2015 PM peak hour under the Alternative 2 scenario, 20 of the study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be significant at the Grand Avenue/1st Street intersection for the same reason as discussed above. Table 3.10-5 identifies the intersections that would experience significant delays under the 2014/2015 Alternative 2 scenario; delay and LOS for all other intersections are shown in Appendix J.

Physical traffic improvement options were evaluated for the above intersections in an attempt to identify potential mitigation for the impacts at the intersections that would experience significant delays during operation of Alternative 2; however, no feasible measures to mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the *Downtown Design Guide* and new street standards, roadway widths have been set along the majority of streets in downtown. Since nearly all of downtown has been built out, any improvements involving street widening would require new right of way, which could encroach onto fully developed property, and/or would necessitate the narrowing of existing sidewalks. Therefore, street widening is not feasible and the impacts would remain significant.

Table 3.10-5. Intersection LOS Comparison (2014/2015) (No Project and Alternative 2)

#	Intersection	2014/2015 No Project		2014/2015 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	51.7	D	1.3	NO
3	Olive Street / 1st Street	16.8	B	14.8	B	-2.0	NO
4	Hill Street / 1st Street	23.9	C	35.8	D	11.9	YES
5	Broadway / 1st Street	22.4	C	22.3	C	-0.1	NO
6	Spring Street / 1st Street	19.6	B	18.6	B	-1.0	NO
7	Grand Avenue / 2nd Street	17.6	B	17.6	B	0.0	NO
8	Hill Street / 2nd Street	17.7	B	22.9	C	5.2	NO
9	Broadway / 2nd Street	26.3	C	26.1	C	-0.2	NO
10	Spring Street / 2nd Street	15.2	B	15.2	B	0.0	NO
11	Grand Avenue / 3rd Street	2.9	A	2.9	A	0.0	NO
12	Hill Street / 3rd Street	46.7	D	46.8	D	0.1	NO
13	Broadway / 3rd Street	116.6	F	115.2	F	-1.4	NO
14	Spring Street / 3rd Street	32.8	C	32.8	C	0.0	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	19.7	B	19.7	B	0.0	NO
17	Hill Street / 4th Street	18.3	B	18.7	B	0.4	NO
18	Broadway / 4th Street	22.0	C	22.4	C	0.4	NO
19	Spring Street / 4th Street	19.6	B	19.6	B	0.0	NO
20	Grand Avenue / 5th Street	15.9	B	15.9	B	0.0	NO
21	Olive Street / 5th Street	36.9	D	37.6	D	0.7	NO
22	Hill Street / 5th Street	8.6	A	8.7	A	0.1	NO
23	Broadway / 5th Street	9.0	A	9.7	A	0.7	NO
24	Spring Street / 5th Street	16.8	B	16.8	B	0.0	NO
25	Grand Avenue / 6th Street	19.9	B	19.9	B	0.0	NO
26	Olive Street / 6th Street	13.1	B	15.1	B	2.0	NO
27	Hill Street / 6th Street	9.3	A	8.4	A	-0.9	NO
28	Broadway / 6th Street	16.7	B	16.0	B	-0.7	NO
29	Spring Street / 6th Street	7.7	A	7.8	A	0.1	NO
30	Figueroa Street / 7th Street	34.6	C	35.7	D	1.1	NO
31	Flower Street / 7th Street	18.7	B	18.7	B	0.0	NO
32	Hope Street / 7th Street	10.0	A	10.2	B	0.2	NO
33	Grand Avenue / 7th Street	17.0	B	16.9	B	-0.1	NO
34	Olive Street / 7th Street	17.2	B	16.2	B	-1.0	NO
35	Hill Street / 7th Street	17.0	B	45.6	D	28.6	YES

#	Intersection	2014/2015 No Project		2014/2015 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
36	Broadway / 7th Street	14.3	B	16.3	B	2.0	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO
38	Figueroa Street / 8th Street	19.2	B	17.8	B	-1.4	NO
39	Hill Street / 8th Street	8.0	A	4.1	A	-3.9	NO
40	Broadway / 8th Street	21.0	C	19.8	B	-1.2	NO
41	Spring Street / 8th Street	8.6	A	8.6	A	0.0	NO
42	Figueroa Street / 9th Street	39.4	D	40.4	D	1.0	NO
43	Flower Street / 9th Street	28.7	C	29.3	C	0.6	NO
44	Hope Street / 9th Street	14.1	B	14.1	B	0.0	NO
45	Grand Avenue / 9th Street	15.5	B	15.5	B	0.0	NO
46	Olive Street / 9th Street	19.9	B	19.9	B	0.0	NO
47	Hill Street / 9th Street	21.8	C	24.5	C	2.7	NO
48	Broadway / 9th Street	6.6	A	6.3	A	-0.3	NO
49	Spring Street / 9th Street	12.9	B	12.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	70.7	E	70.2	E	-0.5	NO
51	Flower Street / Olympic Boulevard	17.4	B	17.4	B	0.0	NO
52	Hope Street / Olympic Boulevard	19.8	B	19.8	B	0.0	NO
53	Grand Avenue / Olympic Boulevard	15.4	B	15.4	B	0.0	NO
54	Olive Street / Olympic Boulevard	14.5	B	14.6	B	0.1	NO
55	Hill Street / Olympic Boulevard	17.1	B	17.2	B	0.1	NO
56	Broadway / Olympic Boulevard	20.7	C	20.9	C	0.2	NO
57	Main Street / Olympic Boulevard	23.9	C	23.9	C	0.0	NO
58	Figueroa Street / 11th Street	19.7	B	20.0	B	0.3	NO
59	Flower Street / 11th Street	18.8	B	18.6	B	-0.2	NO
60	Hope Street / 11th Street	14.9	B	15.8	B	0.9	NO
61	Grand Avenue / 11th Street	10.1	B	9.8	A	-0.3	NO
62	Olive Street / 11th Street	17.0	B	17.4	B	0.4	NO
63	Hill Street / 11th Street	5.5	A	6.2	A	0.7	NO
64	Broadway / 11th Street	15.8	B	16.1	B	0.3	NO
65	Main Street / 11th Street	10.9	B	10.9	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	32.0	C	32.4	C	0.4	NO
2	Grand Avenue / 1st Street	30.4	C	39.0	D	8.6	YES
3	Olive Street / 1st Street	30.6	C	27.0	C	-3.6	NO
4	Hill Street / 1st Street	29.3	C	34.3	C	5.0	NO
5	Broadway / 1st Street	22.8	C	21.9	C	-0.9	NO
6	Spring Street / 1st Street	19.4	B	19.6	B	0.2	NO
7	Grand Avenue / 2nd Street	28.4	C	20.0	B	-8.4	NO
8	Hill Street / 2nd Street	23.3	C	18.8	B	-4.5	NO
9	Broadway / 2nd Street	23.6	C	23.9	C	0.3	NO

#	Intersection	2014/2015 No Project		2014/2015 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
10	Spring Street / 2nd Street	20.0	B	19.9	B	-0.1	NO
11	Grand Avenue / 3rd Street	18.1	B	17.2	B	-0.9	NO
12	Hill Street / 3rd Street	38.3	D	37.8	D	-0.5	NO
13	Broadway / 3rd Street	21.7	C	21.1	C	-0.6	NO
14	Spring Street / 3rd Street	24.8	C	24.8	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	19.5	B	19.5	B	0.0	NO
17	Hill Street / 4th Street	10.8	B	11.7	B	0.9	NO
18	Broadway / 4th Street	13.0	B	13.6	B	0.6	NO
19	Spring Street / 4th Street	20.5	C	20.4	C	-0.1	NO
20	Grand Avenue / 5th Street	27.0	C	26.9	C	-0.1	NO
21	Olive Street / 5th Street	44.5	D	45.0	D	0.5	NO
22	Hill Street / 5th Street	21.1	C	15.5	B	-5.6	NO
23	Broadway / 5th Street	16.4	B	17.0	B	0.6	NO
24	Spring Street / 5th Street	12.0	B	12.0	B	0.0	NO
25	Grand Avenue / 6th Street	20.7	C	20.7	C	0.0	NO
26	Olive Street / 6th Street	14.1	B	14.1	B	0.0	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	14.3	B	15.0	B	0.7	NO
29	Spring Street / 6th Street	10.4	B	10.3	B	-0.1	NO
30	Figueroa Street / 7th Street	27.2	C	25.0	C	-2.2	NO
31	Flower Street / 7th Street	16.3	B	16.4	B	0.1	NO
32	Hope Street / 7th Street	15.9	B	15.7	B	-0.2	NO
33	Grand Avenue / 7th Street	37.4	D	37.4	D	0.0	NO
34	Olive Street / 7th Street	19.2	B	19.0	B	-0.2	NO
35	Hill Street / 7th Street	28.6	C	33.9	C	5.3	NO
36	Broadway / 7th Street	16.9	B	18.9	B	2.0	NO
37	Spring Street / 7th Street	30.7	C	30.7	C	0.0	NO
38	Figueroa Street / 8th Street	42.3	D	31.6	C	-10.7	NO
39	Hill Street / 8th Street	28.9	C	27.3	C	-1.6	NO
40	Broadway / 8th Street	40.3	D	43.0	D	2.7	NO
41	Spring Street / 8th Street	22.2	C	22.2	C	0.0	NO
42	Figueroa Street / 9th Street	21.7	C	22.3	C	0.6	NO
43	Flower Street / 9th Street	24.8	C	25.2	C	0.4	NO
44	Hope Street / 9th Street	16.8	B	16.8	B	0.0	NO
45	Grand Avenue / 9th Street	16.3	B	16.3	B	0.0	NO
46	Olive Street / 9th Street	157.0	F	157.0	F	0.0	NO
47	Hill Street / 9th Street	20.4	C	20.2	C	-0.2	NO
48	Broadway / 9th Street	13.8	B	14.3	B	0.5	NO
49	Spring Street / 9th Street	29.9	C	29.9	C	0.0	NO

#	Intersection	2014/2015 No Project		2014/2015 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
50	Figueroa Street / Olympic Boulevard	66.7	E	66.6	E	-0.1	NO
51	Flower Street / Olympic Boulevard	27.0	C	26.9	C	-0.1	NO
52	Hope Street / Olympic Boulevard	21.0	C	21.0	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	24.1	C	24.1	C	0.0	NO
54	Olive Street / Olympic Boulevard	24.4	C	24.5	C	0.1	NO
55	Hill Street / Olympic Boulevard	25.8	C	24.8	C	-1.0	NO
56	Broadway / Olympic Boulevard	19.4	B	19.7	B	0.3	NO
57	Main Street / Olympic Boulevard	36.3	D	36.3	D	0.0	NO
58	Figueroa Street / 11th Street	26.4	C	26.4	C	0.0	NO
59	Flower Street / 11th Street	16.0	B	15.3	B	-0.7	NO
60	Hope Street / 11th Street	30.4	C	22.4	C	-8.0	NO
61	Grand Avenue / 11th Street	17.5	B	17.4	B	-0.1	NO
62	Olive Street / 11th Street	18.0	B	17.2	B	-0.8	NO
63	Hill Street / 11th Street	25.7	C	25.9	C	0.2	NO
64	Broadway / 11th Street	21.0	C	18.1	B	-2.9	NO
65	Main Street / 11th Street	15.3	B	15.3	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Opening Year 2020 Scenario

Significant impact. During the 2020 AM peak hour under the Alternative 2 scenario, 27 of the 65 study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be significant at the Hill Street/1st Street and Hill Street/7th Street intersections due to the addition of a protected signal phase for the streetcar to turn left from Hill Street to 1st Street and from 7th Street to Hill Street.

During the 2020 PM peak hour under the Alternative 2 scenario, 17 of the study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be significant at the Grand Avenue/1st Street, Hill Street/1st Street, and Hill Street/7th Street intersections due to the addition of a protected signal phase for the streetcar. Table 3.10-6 identifies the intersections that would experience significant delays under the 2020 Alternative 2 scenario; delay and LOS for all other intersections are shown in Appendix J. As discussed under the 2014/2015 Alternative 2 scenario, no feasible measures to mitigate these impacts were identified.

Table 3.10-6. Intersection LOS Comparison (2020) (No Project and Alternative 2)

#	Intersection	2020 No Project		2020 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	62.0	E	0.6	NO
3	Olive Street / 1st Street	17.4	B	15.2	B	-2.2	NO
4	Hill Street / 1st Street	27.9	C	41.2	D	13.3	YES
5	Broadway / 1st Street	22.9	C	22.7	C	-0.2	NO
6	Spring Street / 1st Street	20.1	C	19.3	B	-0.8	NO
7	Grand Avenue / 2nd Street	19.7	B	19.7	B	0.0	NO
8	Hill Street / 2nd Street	20.0	B	24.8	C	4.8	NO
9	Broadway / 2nd Street	60.9	E	51.8	D	-9.1	NO
10	Spring Street / 2nd Street	15.9	B	15.7	B	-0.2	NO
11	Grand Avenue / 3rd Street	3.1	A	3.1	A	0.0	NO
12	Hill Street / 3rd Street	53.1	D	53.2	D	0.1	NO
13	Broadway / 3rd Street	121.4	F	120.1	F	-1.3	NO
14	Spring Street / 3rd Street	38.0	D	38.1	D	0.1	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	20.5	C	20.5	C	0.0	NO
17	Hill Street / 4th Street	18.9	B	19.2	B	0.3	NO
18	Broadway / 4th Street	22.3	C	22.8	C	0.5	NO
19	Spring Street / 4th Street	21.3	C	21.3	C	0.0	NO
20	Grand Avenue / 5th Street	16.1	B	16.1	B	0.0	NO
21	Olive Street / 5th Street	37.5	D	38.1	D	0.6	NO
22	Hill Street / 5th Street	8.8	A	8.9	A	0.1	NO
23	Broadway / 5th Street	9.0	A	9.9	A	0.9	NO
24	Spring Street / 5th Street	17.0	B	17.1	B	0.1	NO
25	Grand Avenue / 6th Street	20.3	C	20.3	C	0.0	NO
26	Olive Street / 6th Street	15.2	B	17.0	B	1.8	NO
27	Hill Street / 6th Street	9.3	A	8.4	A	-0.9	NO
28	Broadway / 6th Street	17.6	B	16.7	B	-0.9	NO
29	Spring Street / 6th Street	8.6	A	8.7	A	0.1	NO
30	Figueroa Street / 7th Street	145.3	F	143.6	F	-1.7	NO
31	Flower Street / 7th Street	19.2	B	19.3	B	0.1	NO
32	Hope Street / 7th Street	11.3	B	11.4	B	0.1	NO
33	Grand Avenue / 7th Street	17.8	B	17.8	B	0.0	NO
34	Olive Street / 7th Street	17.4	B	16.6	B	-0.8	NO
35	Hill Street / 7th Street	17.5	B	48.6	D	31.1	YES
36	Broadway / 7th Street	13.3	B	15.8	B	2.5	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO
38	Figueroa Street / 8th Street	33.8	C	33.2	C	-0.6	NO
39	Hill Street / 8th Street	8.9	A	5.4	A	-3.5	NO
40	Broadway / 8th Street	19.8	B	18.8	B	-1.0	NO

#	Intersection	2020 No Project		2020 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
41	Spring Street / 8th Street	9.3	A	9.3	A	0.0	NO
42	Figueroa Street / 9th Street	142.1	F	116.2	F	-25.9	NO
43	Flower Street / 9th Street	30.4	C	30.8	C	0.4	NO
44	Hope Street / 9th Street	14.6	B	14.6	B	0.0	NO
45	Grand Avenue / 9th Street	16.4	B	16.4	B	0.0	NO
46	Olive Street / 9th Street	27.4	C	27.4	C	0.0	NO
47	Hill Street / 9th Street	23.0	C	25.4	C	2.4	NO
48	Broadway / 9th Street	7.9	A	7.6	A	-0.3	NO
49	Spring Street / 9th Street	13.9	B	13.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	108.2	F	108.4	F	0.2	NO
51	Flower Street / Olympic Boulevard	19.3	B	19.3	B	0.0	NO
52	Hope Street / Olympic Boulevard	23.6	C	23.6	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	16.8	B	16.8	B	0.0	NO
54	Olive Street / Olympic Boulevard	17.0	B	17.1	B	0.1	NO
55	Hill Street / Olympic Boulevard	18.1	B	18.3	B	0.2	NO
56	Broadway / Olympic Boulevard	21.9	C	22.4	C	0.5	NO
57	Main Street / Olympic Boulevard	31.0	C	31.0	C	0.0	NO
58	Figueroa Street / 11th Street	114.6	F	113.4	F	-1.2	NO
59	Flower Street / 11th Street	17.4	B	17.7	B	0.3	NO
60	Hope Street / 11th Street	19.7	B	24.3	C	4.6	NO
61	Grand Avenue / 11th Street	10.4	B	10.3	B	-0.1	NO
62	Olive Street / 11th Street	18.5	B	18.9	B	0.4	NO
63	Hill Street / 11th Street	7.8	A	8.9	A	1.1	NO
64	Broadway / 11th Street	21.1	C	18.5	B	-2.6	NO
65	Main Street / 11th Street	11.8	B	11.8	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	35.4	D	35.8	D	0.4	NO
2	Grand Avenue / 1st Street	34.6	C	56.8	E	22.2	YES
3	Olive Street / 1st Street	32.0	C	28.5	C	-3.5	NO
4	Hill Street / 1st Street	32.1	C	40.8	D	8.7	YES
5	Broadway / 1st Street	23.5	C	22.8	C	-0.7	NO
6	Spring Street / 1st Street	20.6	C	20.7	C	0.1	NO
7	Grand Avenue / 2nd Street	32.8	C	23.5	C	-9.3	NO
8	Hill Street / 2nd Street	32.8	C	27.9	C	-4.9	NO
9	Broadway / 2nd Street	33.1	C	30.3	C	-2.8	NO
10	Spring Street / 2nd Street	20.4	C	20.3	C	-0.1	NO
11	Grand Avenue / 3rd Street	18.8	B	17.5	B	-1.3	NO
12	Hill Street / 3rd Street	56.9	E	56.2	E	-0.7	NO
13	Broadway / 3rd Street	22.4	C	21.8	C	-0.6	NO
14	Spring Street / 3rd Street	26.3	C	26.3	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	26.6	C	26.6	C	0.0	NO

#	Intersection	2020 No Project		2020 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
17	Hill Street / 4th Street	10.7	B	11.6	B	0.9	NO
18	Broadway / 4th Street	13.3	B	13.9	B	0.6	NO
19	Spring Street / 4th Street	20.8	C	20.8	C	0.0	NO
20	Grand Avenue / 5th Street	29.0	C	28.9	C	-0.1	NO
21	Olive Street / 5th Street	45.2	D	45.6	D	0.4	NO
22	Hill Street / 5th Street	21.9	C	16.1	B	-5.8	NO
23	Broadway / 5th Street	17.2	B	17.2	B	0.0	NO
24	Spring Street / 5th Street	12.8	B	12.8	B	0.0	NO
25	Grand Avenue / 6th Street	21.6	C	21.6	C	0.0	NO
26	Olive Street / 6th Street	15.1	B	15.0	B	-0.1	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	15.3	B	15.9	B	0.6	NO
29	Spring Street / 6th Street	11.6	B	11.6	B	0.0	NO
30	Figueroa Street / 7th Street	84.0	F	83.2	F	-0.8	NO
31	Flower Street / 7th Street	17.8	B	17.9	B	0.1	NO
32	Hope Street / 7th Street	16.5	B	16.3	B	-0.2	NO
33	Grand Avenue / 7th Street	56.0	E	55.6	E	-0.4	NO
34	Olive Street / 7th Street	20.3	C	20.2	C	-0.1	NO
35	Hill Street / 7th Street	35.1	D	40.3	D	5.2	YES
36	Broadway / 7th Street	19.0	B	22.8	C	3.8	NO
37	Spring Street / 7th Street	30.8	C	30.8	C	0.0	NO
38	Figueroa Street / 8th Street	148.4	F	101.5	F	-46.9	NO
39	Hill Street / 8th Street	30.3	C	27.9	C	-2.4	NO
40	Broadway / 8th Street	42.1	D	44.4	D	2.3	NO
41	Spring Street / 8th Street	23.5	C	23.5	C	0.0	NO
42	Figueroa Street / 9th Street	40.7	D	32.5	C	-8.2	NO
43	Flower Street / 9th Street	27.8	C	28.0	C	0.2	NO
44	Hope Street / 9th Street	24.4	C	24.4	C	0.0	NO
45	Grand Avenue / 9th Street	23.5	C	23.5	C	0.0	NO
46	Olive Street / 9th Street	227.4	F	227.4	F	0.0	NO
47	Hill Street / 9th Street	28.9	C	28.7	C	-0.2	NO
48	Broadway / 9th Street	16.8	B	17.1	B	0.3	NO
49	Spring Street / 9th Street	31.8	C	31.8	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	86.2	F	85.6	F	-0.6	NO
51	Flower Street / Olympic Boulevard	27.5	C	27.4	C	-0.1	NO
52	Hope Street / Olympic Boulevard	25.3	C	25.3	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	27.8	C	27.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	36.1	D	36.0	D	-0.1	NO
55	Hill Street / Olympic Boulevard	28.1	C	26.8	C	-1.3	NO
56	Broadway / Olympic Boulevard	24.0	C	26.6	C	2.6	NO
57	Main Street / Olympic Boulevard	50.9	D	50.9	D	0.0	NO
58	Figueroa Street / 11th Street	71.8	E	71.6	E	-0.2	NO

#	Intersection	2020 No Project		2020 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
59	Flower Street / 11th Street	42.6	D	40.9	D	-1.7	NO
60	Hope Street / 11th Street	38.7	D	28.1	C	-10.6	NO
61	Grand Avenue / 11th Street	18.3	B	18.5	B	0.2	NO
62	Olive Street / 11th Street	21.1	C	24.5	C	3.4	NO
63	Hill Street / 11th Street	40.3	D	37.4	D	-2.9	NO
64	Broadway / 11th Street	65.0	E	31.3	C	-33.7	NO
65	Main Street / 11th Street	14.8	B	14.8	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Horizon Year 2040 Scenario

Significant impact. During the 2040 AM peak hour under the Alternative 2 scenario, 24 of the 65 study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be significant at the Hill Street/1st Street and Hill Street/7th Street intersections due to the addition of a protected signal phase for the streetcar to turn left from Hill Street to 1st Street and from 7th Street to Hill Street.

During the 2040 PM peak hour under the Alternative 2 scenario, 20 of the study area intersections would operate with greater delay than under the Alternative 1 (No Project) scenario. However, delays, as determined by City significance thresholds, would only be significant at the Grand Avenue/1st Street, Hill Street/1st Street, and Hill Street/7th Street intersections due to the addition of a protected signal phase for the streetcar. Table 3.10-7 identifies the intersections that would experience significant delays under the 2040 Alternative 2 scenario; delay and LOS for all other intersections are shown in Appendix J. As discussed under the 2014/2015 Alternative 2 scenario, no feasible measures to mitigate these impacts were identified.

Table 3.10-7. Intersection LOS Comparison (2040) (No Project and Alternative 2)

#	Intersection	2040 No Project		2040 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	80.2	F	0.4	NO
3	Olive Street / 1st Street	18.0	B	15.9	B	-2.1	NO
4	Hill Street / 1st Street	38.4	D	59.1	E	20.7	YES
5	Broadway / 1st Street	25.1	C	25.0	C	-0.1	NO
6	Spring Street / 1st Street	21.4	C	20.6	C	-0.8	NO
7	Grand Avenue / 2nd Street	29.1	C	29.1	C	0.0	NO
8	Hill Street / 2nd Street	24.6	C	30.5	C	5.9	NO
9	Broadway / 2nd Street	79.3	E	74.0	E	-5.3	NO
10	Spring Street / 2nd Street	19.5	B	18.7	B	-0.8	NO

#	Intersection	2040 No Project		2040 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
11	Grand Avenue / 3rd Street	3.4	A	3.4	A	0.0	NO
12	Hill Street / 3rd Street	79.1	E	78.5	E	-0.6	NO
13	Broadway / 3rd Street	157.4	F	156.3	F	-1.1	NO
14	Spring Street / 3rd Street	59.1	E	59.1	E	0.0	NO
15	Grand Avenue / 4th Street	4.3	A	4.3	A	0.0	NO
16	Olive Street / 4th Street	21.2	C	21.2	C	0.0	NO
17	Hill Street / 4th Street	20.2	C	20.6	C	0.4	NO
18	Broadway / 4th Street	23.3	C	24.6	C	1.3	NO
19	Spring Street / 4th Street	26.8	C	26.8	C	0.0	NO
20	Grand Avenue / 5th Street	17.1	B	17.2	B	0.1	NO
21	Olive Street / 5th Street	52.8	D	53.2	D	0.4	NO
22	Hill Street / 5th Street	9.8	A	9.9	A	0.1	NO
23	Broadway / 5th Street	9.7	A	10.6	B	0.9	NO
24	Spring Street / 5th Street	17.7	B	17.7	B	0.0	NO
25	Grand Avenue / 6th Street	20.9	C	21.0	C	0.1	NO
26	Olive Street / 6th Street	15.8	B	17.4	B	1.6	NO
27	Hill Street / 6th Street	9.4	A	8.5	A	-0.9	NO
28	Broadway / 6th Street	17.8	B	17.0	B	-0.8	NO
29	Spring Street / 6th Street	10.4	B	10.5	B	0.1	NO
30	Figueroa Street / 7th Street	183.9	F	181.9	F	-2.0	NO
31	Flower Street / 7th Street	20.1	C	20.2	C	0.1	NO
32	Hope Street / 7th Street	11.8	B	12.0	B	0.2	NO
33	Grand Avenue / 7th Street	19.9	B	19.9	B	0.0	NO
34	Olive Street / 7th Street	19.0	B	17.8	B	-1.2	NO
35	Hill Street / 7th Street	19.8	B	63.3	E	43.5	YES
36	Broadway / 7th Street	14.5	B	17.2	B	2.7	NO
37	Spring Street / 7th Street	8.3	A	8.3	A	0.0	NO
38	Figueroa Street / 8th Street	56.4	E	55.5	E	-0.9	NO
39	Hill Street / 8th Street	9.7	A	6.3	A	-3.4	NO
40	Broadway / 8th Street	20.4	C	19.2	B	-1.2	NO
41	Spring Street / 8th Street	9.7	A	9.7	A	0.0	NO
42	Figueroa Street / 9th Street	179.1	F	160.2	F	-18.9	NO
43	Flower Street / 9th Street	33.3	C	33.1	C	-0.2	NO
44	Hope Street / 9th Street	15.2	B	15.2	B	0.0	NO
45	Grand Avenue / 9th Street	17.4	B	17.4	B	0.0	NO
46	Olive Street / 9th Street	47.9	D	47.9	D	0.0	NO
47	Hill Street / 9th Street	23.8	C	26.1	C	2.3	NO
48	Broadway / 9th Street	9.4	A	9.0	A	-0.4	NO
49	Spring Street / 9th Street	14.7	B	14.7	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	143.5	F	133.6	F	-9.9	NO

#	Intersection	2040 No Project Delay[a]	2040 No Project LOS	2040 Alternative 2 Delay[a]	2040 Alternative 2 LOS	Change in Delay	Significant Impact
51	Flower Street / Olympic Boulevard	21.9	C	21.9	C	0.0	NO
52	Hope Street / Olympic Boulevard	32.2	C	32.2	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	18.0	B	18.0	B	0.0	NO
54	Olive Street / Olympic Boulevard	24.2	C	24.2	C	0.0	NO
55	Hill Street / Olympic Boulevard	18.9	B	19.0	B	0.1	NO
56	Broadway / Olympic Boulevard	24.1	C	24.9	C	0.8	NO
57	Main Street / Olympic Boulevard	38.9	D	38.9	D	0.0	NO
58	Figueroa Street / 11th Street	185.3	F	186.5	F	1.2	NO
59	Flower Street / 11th Street	17.8	B	18.1	B	0.3	NO
60	Hope Street / 11th Street	21.6	C	24.4	C	2.8	NO
61	Grand Avenue / 11th Street	10.6	B	10.5	B	-0.1	NO
62	Olive Street / 11th Street	20.5	C	20.9	C	0.4	NO
63	Hill Street / 11th Street	8.3	A	9.6	A	1.3	NO
64	Broadway / 11th Street	23.5	C	19.4	B	-4.1	NO
65	Main Street / 11th Street	12.3	B	12.3	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	47.9	D	48.1	D	0.2	NO
2	Grand Avenue / 1st Street	44.7	D	73.6	E	28.9	YES
3	Olive Street / 1st Street	35.9	D	32.6	C	-3.3	NO
4	Hill Street / 1st Street	37.7	D	56.9	E	19.2	YES
5	Broadway / 1st Street	25.4	C	24.7	C	-0.7	NO
6	Spring Street / 1st Street	22.3	C	22.4	C	0.1	NO
7	Grand Avenue / 2nd Street	45.6	D	36.4	D	-9.2	NO
8	Hill Street / 2nd Street	38.0	D	32.2	C	-5.8	NO
9	Broadway / 2nd Street	43.9	D	41.4	D	-2.5	NO
10	Spring Street / 2nd Street	23.1	C	22.8	C	-0.3	NO
11	Grand Avenue / 3rd Street	19.5	B	18.2	B	-1.3	NO
12	Hill Street / 3rd Street	85.6	F	84.7	F	-0.9	NO
13	Broadway / 3rd Street	26.9	C	26.3	C	-0.6	NO
14	Spring Street / 3rd Street	30.0	C	30.0	C	0.0	NO
15	Grand Avenue / 4th Street	5.4	A	5.4	A	0.0	NO
16	Olive Street / 4th Street	42.8	D	42.8	D	0.0	NO
17	Hill Street / 4th Street	12.0	B	12.8	B	0.8	NO
18	Broadway / 4th Street	15.3	B	15.9	B	0.6	NO
19	Spring Street / 4th Street	23.0	C	23.0	C	0.0	NO
20	Grand Avenue / 5th Street	33.9	C	33.8	C	-0.1	NO

#	Intersection	2040 No Project		2040 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
21	Olive Street / 5th Street	41.1	D	41.7	D	0.6	NO
22	Hill Street / 5th Street	23.0	C	16.9	B	-6.1	NO
23	Broadway / 5th Street	17.5	B	18.0	B	0.5	NO
24	Spring Street / 5th Street	13.5	B	13.5	B	0.0	NO
25	Grand Avenue / 6th Street	22.9	C	22.9	C	0.0	NO
26	Olive Street / 6th Street	17.6	B	17.6	B	0.0	NO
27	Hill Street / 6th Street	8.7	A	6.3	A	-2.4	NO
28	Broadway / 6th Street	15.6	B	16.2	B	0.6	NO
29	Spring Street / 6th Street	12.6	B	12.5	B	-0.1	NO
30	Figueroa Street / 7th Street	115.0	F	113.9	F	-1.1	NO
31	Flower Street / 7th Street	18.9	B	19.0	B	0.1	NO
32	Hope Street / 7th Street	16.9	B	16.7	B	-0.2	NO
33	Grand Avenue / 7th Street	75.4	E	74.8	E	-0.6	NO
34	Olive Street / 7th Street	22.4	C	22.3	C	-0.1	NO
35	Hill Street / 7th Street	46.0	D	51.1	D	5.1	YES
36	Broadway / 7th Street	22.1	C	26.4	C	4.3	NO
37	Spring Street / 7th Street	31.4	C	31.3	C	-0.1	NO
38	Figueroa Street / 8th Street	184.9	F	144.7	F	-40.2	NO
39	Hill Street / 8th Street	32.1	C	29.4	C	-2.7	NO
40	Broadway / 8th Street	45.6	D	47.4	D	1.8	NO
41	Spring Street / 8th Street	24.4	C	24.4	C	0.0	NO
42	Figueroa Street / 9th Street	59.4	E	45.6	D	-13.8	NO
43	Flower Street / 9th Street	28.2	C	28.4	C	0.2	NO
44	Hope Street / 9th Street	27.0	C	27.0	C	0.0	NO
45	Grand Avenue / 9th Street	33.4	C	33.4	C	0.0	NO
46	Olive Street / 9th Street	278.6	F	278.6	F	0.0	NO
47	Hill Street / 9th Street	45.7	D	45.6	D	-0.1	NO
48	Broadway / 9th Street	18.3	B	19.0	B	0.7	NO
49	Spring Street / 9th Street	33.9	C	33.9	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	111.1	F	106.5	F	-4.6	NO
51	Flower Street / Olympic Boulevard	32.1	C	32.1	C	0.0	NO
52	Hope Street / Olympic Boulevard	35.3	D	35.3	D	0.0	NO

#	Intersection	2040 No Project		2040 Alternative 2		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
53	Grand Avenue / Olympic Boulevard	34.8	C	34.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	52.4	D	52.5	D	0.1	NO
55	Hill Street / Olympic Boulevard	30.7	C	29.3	C	-1.4	NO
56	Broadway / Olympic Boulevard	29.8	C	33.4	C	3.6	NO
57	Main Street / Olympic Boulevard	65.3	E	65.3	E	0.0	NO
58	Figueroa Street / 11th Street	105.1	F	104.7	F	-0.4	NO
59	Flower Street / 11th Street	39.8	D	41.5	D	1.7	NO
60	Hope Street / 11th Street	46.6	D	29.8	C	-16.8	NO
61	Grand Avenue / 11th Street	20.0	B	20.5	C	0.5	NO
62	Olive Street / 11th Street	23.6	C	29.1	C	5.5	NO
63	Hill Street / 11th Street	55.4	E	47.3	D	-8.1	NO
64	Broadway / 11th Street	93.8	F	45.1	D	-48.7	NO
65	Main Street / 11th Street	15.8	B	15.8	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Bicycle Safety

Significant impact. Implementation of Alternative 2 would involve the installation of a fixed rail guideway within the roadway, which may present hazards for cyclists traveling parallel to, or across, the railway. Although the rail itself would be vertically flush with the road surface, there would be a horizontal gap between the track and the surrounding pavement, which is known as the "flangeway." The flangeway may be wider than the width of a typical bicycle tire, particularly the tires used on road bicycles, and therefore bicycle tires can be caught in the flangeway if the bicycle is traveling too close to and parallel, or close to parallel, to the flangeway. Bicycles crossing the rails at right angles (or similar) would not experience this problem. This "tire-in-track" issue would be a potential hazard for bicyclists using streets where: (a) the streetcar would be travelling in the right hand curb lane and (b) also would not have existing or planned separated bicycle lanes. Under Alternative 2, these streets would include Broadway (from 1st to 11th Streets) and Hill Street (from 4th to 1st Streets). In all instances in which the fixed guideway would occupy the same roadway as an existing or planned bike lane (and cyclists would be traveling parallel to the fixed guideway), designated bike lanes and the guideway would be sufficiently separated to alleviate this potential issue.

Roadways with bicycle lanes are expected to experience the highest volume of cyclists, but implementation of Alternative 2 would not prohibit cyclists from using any part of the alignment, in accordance with the *California Vehicle Code* (Article 4; par. 12202 & 21208). With the implementation of **MM-TRAF-O1**, which would include signage, pavement markings instructing cyclists how to cross tracks safely and other potential safety measures, safety hazards for cyclists would be lessened but would be considered significant.

Pedestrian Safety

Less-than-significant impact. Under Alternative 2, streetcars would operate in mixed-flow traffic, traveling in the same direction as other motor vehicles and stopping at designated stops along the route. The streetcar vehicles would operate at speeds no greater than the posted speed limits. Except for the fact that the streetcars would run on a fixed guideway and electricity would be supplied by an OCS, operation of Alternative 2 would be similar to the operation of local buses.

Platforms would be located either in the center of the roadway or adjacent to the sidewalk. The platforms would be 8 to 14 inches high to match, or nearly match, the floor height of the streetcar vehicles. Horizontal gaps between the curb and the vehicles would be small so that those with wheelchairs or other mobility devices could board without difficulty. Vehicles would be designed to be fully compliant with the *Americans with Disabilities Act* and associated regulations and guidance. Pedestrian access to the streetcar would be either from a curbside location or a median platform reached from a mid-block crosswalk. Following the construction period, there would be no impediments to pedestrians because sidewalks and crosswalks in the study area would not be obstructed. Impacts on pedestrians would be less than significant.

Vehicular Safety

Less-than-significant impact. Streetcar vehicles are unable to make lateral movements because of the fixed guideway, which reduces the ability of the operators to avoid hazards, such as vehicles, pedestrians, bicycles, or debris in the roadway. However, operating speeds would be the same as or slower than adjacent traffic, owing to the relatively short distances between stops and the presence of numerous traffic lights along the project alignment. In addition, the streetcars would have a braking system that would be capable of bringing the vehicles to a stop within distances comparable to buses. Streetcar vehicles would be equipped with audible warning devices, a train-to-wayside communication system, and signs for safety and wayfinding. Furthermore, operators would undergo extensive training and continuing evaluation to ensure the safety of streetcar operations. The City would also implement transit safety programs with the goal of raising streetcar safety awareness in the community. Consequently, risks related to vehicular collisions are not anticipated to increase under Alternative 2. Impacts related to vehicular safety would be less than significant.

Transit System Capacity

Less-than-significant impact. Operation of Alternative 2 would provide an additional public transit option in the study area, with an emphasis on short-distance trips among the various districts within downtown Los Angeles and to/from regional transit stations and stops. Underground and grade-separated services, such as the existing Red, Purple, Blue, and Expo lines, would not be affected by implementation of Alternative 2. Bus service along the project alignment would remain and would operate alongside the streetcars. Some of the streetcar platforms could be shared by Metro, LADOT DASH, and other regional buses.

Because bus service would operate within the same traffic conditions as other vehicular traffic, transit users would experience similar time delays at the intersections projected to experience significant impacts, as identified above. If any modifications to the bus operations or stop locations are needed, they would be evaluated by the appropriate transit agencies and adjusted accordingly. Impacts related to transit system capacity would be less than significant, as project operation would supplement both regional transit services and local circulators in the study area.

Parking

Implementation of Alternative 2 is expected to result in the loss of an estimated 19 on-street parking spaces. The Project aims to support non-motorized modes of travel in the area, and is consistent with LADOT's policies in developing transportation demand management measures that reduce single-occupancy vehicle (SOV) trips and encourage ridesharing and transit use (see Section 3.8). Therefore, the reduction of vehicular trips offsets the need to replace lost on-street parking spaces.

Alternative 3: 7th Street Alternative Without Grand Avenue Extension

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 3 related to intersection capacity would be similar to those identified under Alternative 2 with the exception that there would be no construction activities on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Bicycle, Pedestrian and Vehicular Safety

Less than significant impact with mitigation. Construction-period impacts under Alternative 3 related to safety would be similar to those identified under Alternative 2 with the exception that there would be no construction activities on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue. During construction, travel lanes would be kept open to the extent feasible, and the sidewalks would remain open to pedestrians, except where nearby construction activities would create potential temporary safety hazards.

Transit System Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 3 related to transit system capacity would be similar to those identified under Alternative 2 with the exception that there would be no construction activities on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue. Delays associated with lane closures would affect public transit vehicles if services are not rerouted. This is a potentially significant impact prior to implementation of mitigation. The TMP identified in Mitigation Measure **MM-TRAF-C1** would reduce impacts to less-than-significant levels.

Parking

Construction-period temporary on-street parking losses under Alternative 3 would be similar to those identified under Alternative 2 with the exception that there would be no construction activities on Grand Avenue and on the portion of 1st Street between Hill Street and Grand Avenue.

Operational Impacts

Intersection Capacity

Existing 2014/2015 Scenario

Significant impact. Intersection capacity impacts under Alternative 3 in the 2014/2015 scenario would be similar to those that would occur under Alternative 2 with the exception that Alternative 3 would not result in a significant impact at the Hill Street/1st Street intersection or the Grand Avenue/1st Street intersection. The only remaining significant impact in the existing scenario would be at the Hill Street/7th Street intersection. Delays at the Hill Street/7th Street intersection would be identical to those identified above. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 3, but none were found to be feasible.

Opening Year 2020 Scenario

Significant impact. Intersection capacity impacts under Alternative 3 in the 2020 scenario would be similar to those that would occur under Alternative 2 with the exception that Alternative 3 would only result in significant impacts at the Hill Street/7th Street intersection (both AM and PM peak hours). Delays at the Hill Street/7th Street intersection would be identical to those identified above. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 3, but none were found to be feasible.

Horizon Year 2040 Scenario

Significant impact. Intersection capacity impacts under Alternative 3 in the 2040 scenario would be similar to those that would occur under Alternative 2 with the exception that Alternative 3 would only result in significant impacts at the Hill Street/7th Street intersection (both AM and PM peak hours). Delays at the Hill Street/7th Street intersection would be identical to those identified above. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 3, but none were found to be feasible.

Bicycle, Pedestrian and Vehicular Safety

Significant impact. Impacts related to bicycle, pedestrian, and vehicular safety would be similar to those described under Alternative 2, with the exception that potential impacts related to the Grand Avenue extension would not occur. Impacts related to pedestrians and vehicles would be less than significant and impacts related to bicycle safety would be significant due to the potential for tire-in-track incidents, as discussed above. With the implementation of **MM-TRAF-O1**, impacts related to bicycle safety would remain significant.

Transit System Capacity

Less-than-significant impact. As discussed under Alternative 2, operation of Alternative 3 would provide an additional public transit option in the study area. Existing bus services in the project vicinity would experience delays at the intersections projected to experience significant impacts, as identified above, but project implementation would supplement existing transit services and would not reduce transit system capacity. Impacts would be less than significant.

Parking

Alternative 3 is expected to result in the loss of an estimated 19 on-street parking spaces, the same as Alternative 2. No spaces would be affected by the removal of the Grand Avenue extension.

Alternative 4: 9th Street Alternative With Grand Avenue Extension

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 4 related to intersection capacity would be similar to those identified under Alternative 2 with the exception that construction activities would take place along 9th Street instead of 7th Street. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Bicycle, Pedestrian and Vehicular Safety

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 4 related to safety would be similar to those identified under Alternative 2 with the exception that construction activities would take place along 9th Street instead of 7th Street. During construction, travel lanes would be kept open to the extent practicable, and the sidewalks would remain open to pedestrians. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Transit System Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 4 related to transit system capacity would be similar to those identified under Alternative 2 with the exception that construction activities would take place along 9th Street instead of 7th Street. Delays associated with lane closures would affect public transit vehicles if services are not rerouted. This is a potentially significant impact prior to implementation of mitigation. The TMP identified in Mitigation Measure **MM-TRAF-C1** would reduce impacts to less-than-significant levels.

Parking

Construction-period temporary losses of on-street parking spaces under Alternative 4 would be similar to those identified under Alternative 2 with the exception that construction activities would take place along 9th Street instead of 7th Street.

Operational Impacts

Intersection Capacity

Existing 2014/2015 Scenario

Significant impact. During the 2014/2015 AM and PM peak hours under the Alternative 4 scenario, impacts would be similar to those under Alternative 2, with the exception that the Hill Street/ 7th Street intersection would not be affected. Table 3.10-8 identifies the intersections that would experience significant delays under the 2014/2015 Alternative 4 scenario; delay and LOS for all other intersections are shown in Appendix J. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 4, but none were found to be feasible.

Table 3.10-8. Intersection LOS Comparison (2014/2015) (No Project and Alternative 4)

#	Intersection	2014/2015 No Project		2014/2015 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	51.7	D	1.3	NO
3	Olive Street / 1st Street	16.8	B	14.8	B	-2.0	NO
4	Hill Street / 1st Street	23.9	C	35.8	D	11.9	YES
5	Broadway / 1st Street	22.4	C	22.3	C	-0.1	NO
6	Spring Street / 1st Street	19.6	B	18.6	B	-1.0	NO
7	Grand Avenue / 2nd Street	17.6	B	17.6	B	0.0	NO
8	Hill Street / 2nd Street	17.7	B	22.9	C	5.2	NO
9	Broadway / 2nd Street	26.3	C	26.1	C	-0.2	NO
10	Spring Street / 2nd Street	15.2	B	15.2	B	0.0	NO
11	Grand Avenue / 3rd Street	2.9	A	2.9	A	0.0	NO
12	Hill Street / 3rd Street	46.7	D	46.8	D	0.1	NO
13	Broadway / 3rd Street	116.6	F	115.2	F	-1.4	NO
14	Spring Street / 3rd Street	32.8	C	32.8	C	0.0	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	19.7	B	19.7	B	0.0	NO
17	Hill Street / 4th Street	18.3	B	18.7	B	0.4	NO
18	Broadway / 4th Street	22.0	C	22.4	C	0.4	NO
19	Spring Street / 4th Street	19.6	B	19.6	B	0.0	NO
20	Grand Avenue / 5th Street	15.9	B	15.9	B	0.0	NO
21	Olive Street / 5th Street	36.9	D	36.9	D	0.0	NO
22	Hill Street / 5th Street	8.6	A	8.8	A	0.2	NO
23	Broadway / 5th Street	9.0	A	9.7	A	0.7	NO
24	Spring Street / 5th Street	16.8	B	16.8	B	0.0	NO
25	Grand Avenue / 6th Street	19.9	B	19.9	B	0.0	NO
26	Olive Street / 6th Street	13.1	B	13.1	B	0.0	NO
27	Hill Street / 6th Street	9.3	A	9.7	A	0.4	NO
28	Broadway / 6th Street	16.7	B	15.9	B	-0.8	NO
29	Spring Street / 6th Street	7.7	A	7.8	A	0.1	NO
30	Figueroa Street / 7th Street	34.6	C	34.7	C	0.1	NO
31	Flower Street / 7th Street	18.7	B	18.7	B	0.0	NO
32	Hope Street / 7th Street	10.0	A	10.1	B	0.1	NO
33	Grand Avenue / 7th Street	17.0	B	17.0	B	0.0	NO
34	Olive Street / 7th Street	17.2	B	15.7	B	-1.5	NO
35	Hill Street / 7th Street	17.0	B	16.7	B	-0.3	NO
36	Broadway / 7th Street	14.3	B	15.6	B	1.3	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO

#	Intersection	2014/2015 No Project		2014/2015 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
38	Figueroa Street / 8th Street	19.2	B	17.5	B	-1.7	NO
39	Hill Street / 8th Street	8.0	A	7.5	A	-0.5	NO
40	Broadway / 8th Street	21.0	C	19.8	B	-1.2	NO
41	Spring Street / 8th Street	8.6	A	8.6	A	0.0	NO
42	Figueroa Street / 9th Street	39.4	D	40.0	D	0.6	NO
43	Flower Street / 9th Street	28.7	C	29.3	C	0.6	NO
44	Hope Street / 9th Street	14.1	B	14.2	B	0.1	NO
45	Grand Avenue / 9th Street	15.5	B	15.9	B	0.4	NO
46	Olive Street / 9th Street	19.9	B	18.5	B	-1.4	NO
47	Hill Street / 9th Street	21.8	C	21.8	C	0.0	NO
48	Broadway / 9th Street	6.6	A	6.0	A	-0.6	NO
49	Spring Street / 9th Street	12.9	B	12.8	B	-0.1	NO
50	Figueroa Street / Olympic Boulevard	70.7	E	70.2	E	-0.5	NO
51	Flower Street / Olympic Boulevard	17.4	B	17.4	B	0.0	NO
52	Hope Street / Olympic Boulevard	19.8	B	19.8	B	0.0	NO
53	Grand Avenue / Olympic Boulevard	15.4	B	15.4	B	0.0	NO
54	Olive Street / Olympic Boulevard	14.5	B	14.5	B	0.0	NO
55	Hill Street / Olympic Boulevard	17.1	B	17.1	B	0.0	NO
56	Broadway / Olympic Boulevard	20.7	C	21.0	C	0.3	NO
57	Main Street / Olympic Boulevard	23.9	C	23.9	C	0.0	NO
58	Figueroa Street / 11th Street	19.7	B	20.0	B	0.3	NO
59	Flower Street / 11th Street	18.8	B	18.6	B	-0.2	NO
60	Hope Street / 11th Street	14.9	B	15.8	B	0.9	NO
61	Grand Avenue / 11th Street	10.1	B	9.8	A	-0.3	NO
62	Olive Street / 11th Street	17.0	B	17.4	B	0.4	NO
63	Hill Street / 11th Street	5.5	A	6.1	A	0.6	NO
64	Broadway / 11th Street	15.8	B	16.1	B	0.3	NO
65	Main Street / 11th Street	10.9	B	10.9	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	32.0	C	32.4	C	0.4	NO
2	Grand Avenue / 1st Street	30.4	C	39.0	D	8.6	YES
3	Olive Street / 1st Street	30.6	C	27.0	C	-3.6	NO
4	Hill Street / 1st Street	29.3	C	34.3	C	5.0	NO
5	Broadway / 1st Street	22.8	C	21.9	C	-0.9	NO
6	Spring Street / 1st Street	19.4	B	19.6	B	0.2	NO
7	Grand Avenue / 2nd Street	28.4	C	20.0	B	-8.4	NO
8	Hill Street / 2nd Street	23.3	C	18.8	B	-4.5	NO
9	Broadway / 2nd Street	23.6	C	23.9	C	0.3	NO
10	Spring Street / 2nd Street	20.0	B	19.9	B	-0.1	NO
11	Grand Avenue / 3rd Street	18.1	B	17.2	B	-0.9	NO

#	Intersection	2014/2015 No Project		2014/2015 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
12	Hill Street / 3rd Street	38.3	D	37.8	D	-0.5	NO
13	Broadway / 3rd Street	21.7	C	21.1	C	-0.6	NO
14	Spring Street / 3rd Street	24.8	C	24.8	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	19.5	B	19.5	B	0.0	NO
17	Hill Street / 4th Street	10.8	B	11.7	B	0.9	NO
18	Broadway / 4th Street	13.0	B	13.6	B	0.6	NO
19	Spring Street / 4th Street	20.5	C	20.4	C	-0.1	NO
20	Grand Avenue / 5th Street	27.0	C	26.9	C	-0.1	NO
21	Olive Street / 5th Street	44.5	D	45.0	D	0.5	NO
22	Hill Street / 5th Street	21.1	C	16.6	B	-4.5	NO
23	Broadway / 5th Street	16.4	B	17.0	B	0.6	NO
24	Spring Street / 5th Street	12.0	B	12.0	B	0.0	NO
25	Grand Avenue / 6th Street	20.7	C	20.7	C	0.0	NO
26	Olive Street / 6th Street	14.1	B	14.1	B	0.0	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	14.3	B	14.8	B	0.5	NO
29	Spring Street / 6th Street	10.4	B	10.3	B	-0.1	NO
30	Figueroa Street / 7th Street	27.2	C	27.3	C	0.1	NO
31	Flower Street / 7th Street	16.3	B	16.3	B	0.0	NO
32	Hope Street / 7th Street	15.9	B	15.3	B	-0.6	NO
33	Grand Avenue / 7th Street	37.4	D	37.5	D	0.1	NO
34	Olive Street / 7th Street	19.2	B	24.0	C	4.8	NO
35	Hill Street / 7th Street	28.6	C	26.3	C	-2.3	NO
36	Broadway / 7th Street	16.9	B	19.2	B	2.3	NO
37	Spring Street / 7th Street	30.7	C	30.7	C	0.0	NO
38	Figueroa Street / 8th Street	42.3	D	43.1	D	0.8	NO
39	Hill Street / 8th Street	28.9	C	30.1	C	1.2	NO
40	Broadway / 8th Street	40.3	D	43.0	D	2.7	NO
41	Spring Street / 8th Street	22.2	C	22.2	C	0.0	NO
42	Figueroa Street / 9th Street	21.7	C	22.3	C	0.6	NO
43	Flower Street / 9th Street	24.8	C	25.3	C	0.5	NO
44	Hope Street / 9th Street	16.8	B	12.3	B	-4.5	NO
45	Grand Avenue / 9th Street	16.3	B	15.5	B	-0.8	NO
46	Olive Street / 9th Street	157.0	F	120.8	F	-36.2	NO
47	Hill Street / 9th Street	20.4	C	17.4	B	-3.0	NO
48	Broadway / 9th Street	13.8	B	14.1	B	0.3	NO
49	Spring Street / 9th Street	29.9	C	29.8	C	-0.1	NO
50	Figueroa Street / Olympic Boulevard	66.7	E	66.6	E	-0.1	NO
51	Flower Street / Olympic Boulevard	27.0	C	26.9	C	-0.1	NO

#	Intersection	2014/2015 No Project		2014/2015 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
52	Hope Street / Olympic Boulevard	21.0	C	21.0	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	24.1	C	24.1	C	0.0	NO
54	Olive Street / Olympic Boulevard	24.4	C	24.3	C	-0.1	NO
55	Hill Street / Olympic Boulevard	25.8	C	23.9	C	-1.9	NO
56	Broadway / Olympic Boulevard	19.4	B	19.8	B	0.4	NO
57	Main Street / Olympic Boulevard	36.3	D	36.3	D	0.0	NO
58	Figueroa Street / 11th Street	26.4	C	26.4	C	0.0	NO
59	Flower Street / 11th Street	16.0	B	15.3	B	-0.7	NO
60	Hope Street / 11th Street	30.4	C	22.4	C	-8.0	NO
61	Grand Avenue / 11th Street	17.5	B	17.4	B	-0.1	NO
62	Olive Street / 11th Street	18.0	B	17.2	B	-0.8	NO
63	Hill Street / 11th Street	25.7	C	25.9	C	0.2	NO
64	Broadway / 11th Street	21.0	C	18.1	B	-2.9	NO
65	Main Street / 11th Street	15.3	B	15.3	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Opening Year 2020 Scenario

Significant impact. During the 2020 AM and PM peak hours under the Alternative 4 scenario, impacts would be similar to those under Alternative 2, with the exception that the Hill Street/ 7th Street intersection would not be affected. Table 3.10-9 identifies the intersections that would experience significant delays under the 2020 Alternative 4 scenario; delay and LOS for all other intersections are shown in Appendix J. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 4, but none were found to be feasible.

Table 3.10-9. Intersection LOS Comparison (2020) (No Project and Alternative 4)

#	Intersection	2020 No Project		2020 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	62.0	E	0.6	NO
3	Olive Street / 1st Street	17.4	B	15.2	B	-2.2	NO
4	Hill Street / 1st Street	27.9	C	41.2	D	13.3	YES
5	Broadway / 1st Street	22.9	C	22.7	C	-0.2	NO
6	Spring Street / 1st Street	20.1	C	19.3	B	-0.8	NO
7	Grand Avenue / 2nd Street	19.7	B	19.7	B	0.0	NO
8	Hill Street / 2nd Street	20.0	B	24.8	C	4.8	NO
9	Broadway / 2nd Street	60.9	E	51.8	D	-9.1	NO
10	Spring Street / 2nd Street	15.9	B	15.7	B	-0.2	NO

#	Intersection	2020 No Project		2020 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
11	Grand Avenue / 3rd Street	3.1	A	3.1	A	0.0	NO
12	Hill Street / 3rd Street	53.1	D	53.2	D	0.1	NO
13	Broadway / 3rd Street	121.4	F	120.1	F	-1.3	NO
14	Spring Street / 3rd Street	38.0	D	38.1	D	0.1	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	20.5	C	20.5	C	0.0	NO
17	Hill Street / 4th Street	18.9	B	19.2	B	0.3	NO
18	Broadway / 4th Street	22.3	C	22.8	C	0.5	NO
19	Spring Street / 4th Street	21.3	C	21.3	C	0.0	NO
20	Grand Avenue / 5th Street	16.1	B	16.1	B	0.0	NO
21	Olive Street / 5th Street	37.5	D	37.5	D	0.0	NO
22	Hill Street / 5th Street	8.8	A	9.0	A	0.2	NO
23	Broadway / 5th Street	9.0	A	9.9	A	0.9	NO
24	Spring Street / 5th Street	17.0	B	17.1	B	0.1	NO
25	Grand Avenue / 6th Street	20.3	C	20.3	C	0.0	NO
26	Olive Street / 6th Street	15.2	B	15.2	B	0.0	NO
27	Hill Street / 6th Street	9.3	A	9.6	A	0.3	NO
28	Broadway / 6th Street	17.6	B	16.6	B	-1.0	NO
29	Spring Street / 6th Street	8.6	A	8.7	A	0.1	NO
30	Figueroa Street / 7th Street	145.3	F	145.3	F	0.0	NO
31	Flower Street / 7th Street	19.2	B	19.2	B	0.0	NO
32	Hope Street / 7th Street	11.3	B	11.3	B	0.0	NO
33	Grand Avenue / 7th Street	17.8	B	17.8	B	0.0	NO
34	Olive Street / 7th Street	17.4	B	15.8	B	-1.6	NO
35	Hill Street / 7th Street	17.5	B	17.3	B	-0.2	NO
36	Broadway / 7th Street	13.3	B	15.1	B	1.8	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO
38	Figueroa Street / 8th Street	33.8	C	34.1	C	0.3	NO
39	Hill Street / 8th Street	8.9	A	8.6	A	-0.3	NO
40	Broadway / 8th Street	19.8	B	18.8	B	-1.0	NO
41	Spring Street / 8th Street	9.3	A	9.3	A	0.0	NO
42	Figueroa Street / 9th Street	142.1	F	109.7	F	-32.4	NO
43	Flower Street / 9th Street	30.4	C	31.1	C	0.7	NO
44	Hope Street / 9th Street	14.6	B	14.7	B	0.1	NO
45	Grand Avenue / 9th Street	16.4	B	16.8	B	0.4	NO
46	Olive Street / 9th Street	27.4	C	19.3	B	-8.1	NO
47	Hill Street / 9th Street	23.0	C	22.9	C	-0.1	NO
48	Broadway / 9th Street	7.9	A	7.5	A	-0.4	NO
49	Spring Street / 9th Street	13.9	B	13.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	108.2	F	108.4	F	0.2	NO

#	Intersection	2020 No Project		2020 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
51	Flower Street / Olympic Boulevard	19.3	B	19.3	B	0.0	NO
52	Hope Street / Olympic Boulevard	23.6	C	23.6	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	16.8	B	16.8	B	0.0	NO
54	Olive Street / Olympic Boulevard	17.0	B	17.0	B	0.0	NO
55	Hill Street / Olympic Boulevard	18.1	B	18.1	B	0.0	NO
56	Broadway / Olympic Boulevard	21.9	C	22.5	C	0.6	NO
57	Main Street / Olympic Boulevard	31.0	C	31.0	C	0.0	NO
58	Figueroa Street / 11th Street	114.6	F	113.4	F	-1.2	NO
59	Flower Street / 11th Street	17.4	B	17.7	B	0.3	NO
60	Hope Street / 11th Street	19.7	B	24.3	C	4.6	NO
61	Grand Avenue / 11th Street	10.4	B	10.3	B	-0.1	NO
62	Olive Street / 11th Street	18.5	B	18.9	B	0.4	NO
63	Hill Street / 11th Street	7.8	A	8.7	A	0.9	NO
64	Broadway / 11th Street	21.1	C	18.5	B	-2.6	NO
65	Main Street / 11th Street	11.8	B	11.8	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	35.4	D	35.8	D	0.4	NO
2	Grand Avenue / 1st Street	34.6	C	56.8	E	22.2	YES
3	Olive Street / 1st Street	32.0	C	28.5	C	-3.5	NO
4	Hill Street / 1st Street	32.1	C	40.8	D	8.7	YES
5	Broadway / 1st Street	23.5	C	22.8	C	-0.7	NO
6	Spring Street / 1st Street	20.6	C	20.7	C	0.1	NO
7	Grand Avenue / 2nd Street	32.8	C	23.5	C	-9.3	NO
8	Hill Street / 2nd Street	32.8	C	27.9	C	-4.9	NO
9	Broadway / 2nd Street	33.1	C	30.3	C	-2.8	NO
10	Spring Street / 2nd Street	20.4	C	20.3	C	-0.1	NO
11	Grand Avenue / 3rd Street	18.8	B	17.5	B	-1.3	NO
12	Hill Street / 3rd Street	56.9	E	56.2	E	-0.7	NO
13	Broadway / 3rd Street	22.4	C	21.8	C	-0.6	NO
14	Spring Street / 3rd Street	26.3	C	26.3	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	26.6	C	26.6	C	0.0	NO
17	Hill Street / 4th Street	10.7	B	11.6	B	0.9	NO
18	Broadway / 4th Street	13.3	B	13.9	B	0.6	NO
19	Spring Street / 4th Street	20.8	C	20.9	C	0.1	NO
20	Grand Avenue / 5th Street	29.0	C	28.9	C	-0.1	NO
21	Olive Street / 5th Street	45.2	D	45.7	D	0.5	NO
22	Hill Street / 5th Street	21.9	C	17.1	B	-4.8	NO
23	Broadway / 5th Street	17.2	B	17.7	B	0.5	NO
24	Spring Street / 5th Street	12.8	B	12.8	B	0.0	NO

#	Intersection	2020 No Project		2020 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
25	Grand Avenue / 6th Street	21.6	C	21.6	C	0.0	NO
26	Olive Street / 6th Street	15.1	B	15.0	B	-0.1	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	15.3	B	15.8	B	0.5	NO
29	Spring Street / 6th Street	11.6	B	11.6	B	0.0	NO
30	Figueroa Street / 7th Street	84.0	F	84.0	F	0.0	NO
31	Flower Street / 7th Street	17.8	B	17.8	B	0.0	NO
32	Hope Street / 7th Street	16.5	B	15.7	B	-0.8	NO
33	Grand Avenue / 7th Street	56.0	E	56.0	E	0.0	NO
34	Olive Street / 7th Street	20.3	C	24.7	C	4.4	NO
35	Hill Street / 7th Street	35.1	D	33.0	C	-2.1	NO
36	Broadway / 7th Street	19.0	B	23.1	C	4.1	NO
37	Spring Street / 7th Street	30.8	C	30.8	C	0.0	NO
38	Figueroa Street / 8th Street	148.4	F	148.5	F	0.1	NO
39	Hill Street / 8th Street	30.3	C	30.6	C	0.3	NO
40	Broadway / 8th Street	42.1	D	44.3	D	2.2	NO
41	Spring Street / 8th Street	23.5	C	23.5	C	0.0	NO
42	Figueroa Street / 9th Street	40.7	D	31.2	C	-9.5	NO
43	Flower Street / 9th Street	27.8	C	28.1	C	0.3	NO
44	Hope Street / 9th Street	24.4	C	18.9	B	-5.5	NO
45	Grand Avenue / 9th Street	23.5	C	24.6	C	1.1	NO
46	Olive Street / 9th Street	227.4	F	180.4	F	-47.0	NO
47	Hill Street / 9th Street	28.9	C	19.1	B	-9.8	NO
48	Broadway / 9th Street	16.8	B	17.1	B	0.3	NO
49	Spring Street / 9th Street	31.8	C	31.8	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	86.2	F	85.6	F	-0.6	NO
51	Flower Street / Olympic Boulevard	27.5	C	27.5	C	0.0	NO
52	Hope Street / Olympic Boulevard	25.3	C	25.3	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	27.8	C	27.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	36.1	D	35.9	D	-0.2	NO
55	Hill Street / Olympic Boulevard	28.1	C	25.8	C	-2.3	NO
56	Broadway / Olympic Boulevard	24.0	C	26.6	C	2.6	NO
57	Main Street / Olympic Boulevard	50.9	D	50.9	D	0.0	NO
58	Figueroa Street / 11th Street	71.8	E	71.6	E	-0.2	NO
59	Flower Street / 11th Street	42.6	D	40.9	D	-1.7	NO
60	Hope Street / 11th Street	38.7	D	28.1	C	-10.6	NO
61	Grand Avenue / 11th Street	18.3	B	18.5	B	0.2	NO
62	Olive Street / 11th Street	21.1	C	24.5	C	3.4	NO
63	Hill Street / 11th Street	40.3	D	37.4	D	-2.9	NO
64	Broadway / 11th Street	65.0	E	31.3	C	-33.7	NO

#	Intersection	2020 No Project		2020 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
65	Main Street / 11th Street	14.8	B	14.8	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Horizon Year 2040 Scenario

Significant impact. During the 2040 AM and PM peak hours under the Alternative 4 scenario, impacts would be similar to those under Alternative 2, with the exception that the Hill Street/ 7th Street intersection would not be affected. Table 3.10-10 identifies the intersections that would experience significant delays under the 2040 Alternative 4 scenario; delay and LOS for all other intersections are shown in Appendix J. Physical traffic improvement options were evaluated in an attempt to mitigate the impacts under Alternative 4, but none were found to be feasible.

Table 3.10-10. Intersection LOS Comparison (2040) (No Project and Alternative 4)

#	Intersection	2040 No Project		2040 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
AM Peak Hour							
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	80.2	F	0.4	NO
3	Olive Street / 1st Street	18.0	B	15.9	B	-2.1	NO
4	Hill Street / 1st Street	38.4	D	59.1	E	20.7	YES
5	Broadway / 1st Street	25.1	C	25.0	C	-0.1	NO
6	Spring Street / 1st Street	21.4	C	20.6	C	-0.8	NO
7	Grand Avenue / 2nd Street	29.1	C	29.1	C	0.0	NO
8	Hill Street / 2nd Street	24.6	C	30.5	C	5.9	NO
9	Broadway / 2nd Street	79.3	E	74.0	E	-5.3	NO
10	Spring Street / 2nd Street	19.5	B	18.7	B	-0.8	NO
11	Grand Avenue / 3rd Street	3.4	A	3.4	A	0.0	NO
12	Hill Street / 3rd Street	79.1	E	78.5	E	-0.6	NO
13	Broadway / 3rd Street	157.4	F	156.3	F	-1.1	NO
14	Spring Street / 3rd Street	59.1	E	59.1	E	0.0	NO
15	Grand Avenue / 4th Street	4.3	A	4.3	A	0.0	NO
16	Olive Street / 4th Street	21.2	C	21.2	C	0.0	NO
17	Hill Street / 4th Street	20.2	C	20.6	C	0.4	NO
18	Broadway / 4th Street	23.3	C	24.6	C	1.3	NO
19	Spring Street / 4th Street	26.8	C	26.8	C	0.0	NO
20	Grand Avenue / 5th Street	17.1	B	17.1	B	0.0	NO
21	Olive Street / 5th Street	52.8	D	52.8	D	0.0	NO
22	Hill Street / 5th Street	9.8	A	9.9	A	0.1	NO

#	Intersection	2040 No Project		2040 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
23	Broadway / 5th Street	9.7	A	10.6	B	0.9	NO
24	Spring Street / 5th Street	17.7	B	17.7	B	0.0	NO
25	Grand Avenue / 6th Street	20.9	C	20.9	C	0.0	NO
26	Olive Street / 6th Street	15.8	B	15.8	B	0.0	NO
27	Hill Street / 6th Street	9.4	A	9.5	A	0.1	NO
28	Broadway / 6th Street	17.8	B	16.9	B	-0.9	NO
29	Spring Street / 6th Street	10.4	B	10.5	B	0.1	NO
30	Figueroa Street / 7th Street	183.9	F	183.9	F	0.0	NO
31	Flower Street / 7th Street	20.1	C	20.1	C	0.0	NO
32	Hope Street / 7th Street	11.8	B	11.9	B	0.1	NO
33	Grand Avenue / 7th Street	19.9	B	19.9	B	0.0	NO
34	Olive Street / 7th Street	19.0	B	17.3	B	-1.7	NO
35	Hill Street / 7th Street	19.8	B	19.6	B	-0.2	NO
36	Broadway / 7th Street	14.5	B	16.5	B	2.0	NO
37	Spring Street / 7th Street	8.3	A	8.3	A	0.0	NO
38	Figueroa Street / 8th Street	56.4	E	56.7	E	0.3	NO
39	Hill Street / 8th Street	9.7	A	9.4	A	-0.3	NO
40	Broadway / 8th Street	20.4	C	19.3	B	-1.1	NO
41	Spring Street / 8th Street	9.7	A	9.7	A	0.0	NO
42	Figueroa Street / 9th Street	179.1	F	153.2	F	-25.9	NO
43	Flower Street / 9th Street	33.3	C	34.2	C	0.9	NO
44	Hope Street / 9th Street	15.2	B	15.3	B	0.1	NO
45	Grand Avenue / 9th Street	17.4	B	17.9	B	0.5	NO
46	Olive Street / 9th Street	47.9	D	24.6	C	-23.3	NO
47	Hill Street / 9th Street	23.8	C	23.8	C	0.0	NO
48	Broadway / 9th Street	9.4	A	9.1	A	-0.3	NO
49	Spring Street / 9th Street	14.7	B	14.6	B	-0.1	NO
50	Figueroa Street / Olympic Boulevard	143.5	F	133.6	F	-9.9	NO
51	Flower Street / Olympic Boulevard	21.9	C	21.9	C	0.0	NO
52	Hope Street / Olympic Boulevard	32.2	C	32.2	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	18.0	B	18.0	B	0.0	NO
54	Olive Street / Olympic Boulevard	24.2	C	24.2	C	0.0	NO
55	Hill Street / Olympic Boulevard	18.9	B	18.8	B	-0.1	NO
56	Broadway / Olympic Boulevard	24.1	C	25.0	C	0.9	NO
57	Main Street / Olympic Boulevard	38.9	D	38.9	D	0.0	NO
58	Figueroa Street / 11th Street	185.3	F	186.5	F	1.2	NO
59	Flower Street / 11th Street	17.8	B	18.1	B	0.3	NO
60	Hope Street / 11th Street	21.6	C	24.4	C	2.8	NO
61	Grand Avenue / 11th Street	10.6	B	10.5	B	-0.1	NO
62	Olive Street / 11th Street	20.5	C	20.9	C	0.4	NO

#	Intersection	2040 No Project		2040 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
63	Hill Street / 11th Street	8.3	A	9.4	A	1.1	NO
64	Broadway / 11th Street	23.5	C	19.4	B	-4.1	NO
65	Main Street / 11th Street	12.3	B	12.3	B	0.0	NO
PM Peak Hour							
1	Hope Street / 1st Street	47.9	D	48.1	D	0.2	NO
2	Grand Avenue / 1st Street	44.7	D	73.6	E	28.9	YES
3	Olive Street / 1st Street	35.9	D	32.6	C	-3.3	NO
4	Hill Street / 1st Street	37.7	D	56.9	E	19.2	YES
5	Broadway / 1st Street	25.4	C	24.7	C	-0.7	NO
6	Spring Street / 1st Street	22.3	C	22.4	C	0.1	NO
7	Grand Avenue / 2nd Street	45.6	D	36.4	D	-9.2	NO
8	Hill Street / 2nd Street	38.0	D	32.2	C	-5.8	NO
9	Broadway / 2nd Street	43.9	D	41.4	D	-2.5	NO
10	Spring Street / 2nd Street	23.1	C	22.8	C	-0.3	NO
11	Grand Avenue / 3rd Street	19.5	B	18.2	B	-1.3	NO
12	Hill Street / 3rd Street	85.6	F	84.8	F	-0.8	NO
13	Broadway / 3rd Street	26.9	C	26.3	C	-0.6	NO
14	Spring Street / 3rd Street	30.0	C	30.0	C	0.0	NO
15	Grand Avenue / 4th Street	5.4	A	5.4	A	0.0	NO
16	Olive Street / 4th Street	42.8	D	42.8	D	0.0	NO
17	Hill Street / 4th Street	12.0	B	12.9	B	0.9	NO
18	Broadway / 4th Street	15.3	B	15.9	B	0.6	NO
19	Spring Street / 4th Street	23.0	C	23.0	C	0.0	NO
20	Grand Avenue / 5th Street	33.9	C	33.8	C	-0.1	NO
21	Olive Street / 5th Street	41.1	D	41.7	D	0.6	NO
22	Hill Street / 5th Street	23.0	C	17.8	B	-5.2	NO
23	Broadway / 5th Street	17.5	B	18.0	B	0.5	NO
24	Spring Street / 5th Street	13.5	B	13.5	B	0.0	NO
25	Grand Avenue / 6th Street	22.9	C	22.9	C	0.0	NO
26	Olive Street / 6th Street	17.6	B	17.6	B	0.0	NO
27	Hill Street / 6th Street	8.7	A	6.3	A	-2.4	NO
28	Broadway / 6th Street	15.6	B	16.0	B	0.4	NO
29	Spring Street / 6th Street	12.6	B	12.5	B	-0.1	NO
30	Figueroa Street / 7th Street	115.0	F	115.0	F	0.0	NO
31	Flower Street / 7th Street	18.9	B	18.9	B	0.0	NO
32	Hope Street / 7th Street	16.9	B	16.1	B	-0.8	NO
33	Grand Avenue / 7th Street	75.4	E	75.4	E	0.0	NO
34	Olive Street / 7th Street	22.4	C	26.0	C	3.6	NO
35	Hill Street / 7th Street	46.0	D	43.4	D	-2.6	NO
36	Broadway / 7th Street	22.1	C	26.7	C	4.6	NO

#	Intersection	2040 No Project		2040 Alternative 4		Change in Delay	Significant Impact
		Delay[a]	LOS	Delay[a]	LOS		
37	Spring Street / 7th Street	31.4	C	31.4	C	0.0	NO
38	Figueroa Street / 8th Street	184.9	F	185.0	F	0.1	NO
39	Hill Street / 8th Street	32.1	C	31.9	C	-0.2	NO
40	Broadway / 8th Street	45.6	D	47.4	D	1.8	NO
41	Spring Street / 8th Street	24.4	C	24.4	C	0.0	NO
42	Figueroa Street / 9th Street	59.4	E	40.8	D	-18.6	NO
43	Flower Street / 9th Street	28.2	C	28.5	C	0.3	NO
44	Hope Street / 9th Street	27.0	C	20.7	C	-6.3	NO
45	Grand Avenue / 9th Street	33.4	C	36.5	D	3.1	NO
46	Olive Street / 9th Street	278.6	F	233.9	F	-44.7	NO
47	Hill Street / 9th Street	45.7	D	20.4	C	-25.3	NO
48	Broadway / 9th Street	18.3	B	19.6	B	1.3	NO
49	Spring Street / 9th Street	33.9	C	33.9	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	111.1	F	106.5	F	-4.6	NO
51	Flower Street / Olympic Boulevard	32.1	C	32.1	C	0.0	NO
52	Hope Street / Olympic Boulevard	35.3	D	35.3	D	0.0	NO
53	Grand Avenue / Olympic Boulevard	34.8	C	34.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	52.4	D	52.4	D	0.0	NO
55	Hill Street / Olympic Boulevard	30.7	C	28.0	C	-2.7	NO
56	Broadway / Olympic Boulevard	29.8	C	33.4	C	3.6	NO
57	Main Street / Olympic Boulevard	65.3	E	65.3	E	0.0	NO
58	Figueroa Street / 11th Street	105.1	F	104.7	F	-0.4	NO
59	Flower Street / 11th Street	39.8	D	41.5	D	1.7	NO
60	Hope Street / 11th Street	46.6	D	29.8	C	-16.8	NO
61	Grand Avenue / 11th Street	20.0	B	20.5	C	0.5	NO
62	Olive Street / 11th Street	23.6	C	29.1	C	5.5	NO
63	Hill Street / 11th Street	55.4	E	47.3	D	-8.1	NO
64	Broadway / 11th Street	93.8	F	45.1	D	-48.7	NO
65	Main Street / 11th Street	15.8	B	15.8	B	0.0	NO

[a] Average vehicle delay in seconds
Source: Appendix J

Bicycle, Pedestrian and Vehicular Safety

Significant impact. Impacts related to bicycle, pedestrian, and vehicular safety would be similar to those described under Alternative 2, except that potential impacts would occur on 9th Street instead of on 7th Street. Impacts related to pedestrians and vehicles would be less than significant and impacts related to bicycle safety would be significant due to the potential for tire-in-track incidents, as discussed above. A slightly increased level of potential safety concern for bicyclists would be associated with this alternative, because there is currently not an existing or planned bicycle facility on 9th Street. With the implementation of **MM-TRAF-O1**, impacts related to bicycle safety would remain significant.

Transit System Capacity

Less-than-significant impact. As discussed under Alternative 2, operation of Alternative 4 would provide an additional public transit option in the study area. Existing bus services in the project vicinity would experience delays at the intersections projected to experience significant impacts, as identified above, but project implementation would supplement existing transit services and would not reduce transit system capacity. 9th Street has less transit service than 7th Street, and therefore impacts related to transit system capacity under Alternative 4 would be less than under Alternatives 2 and 3. Impacts would be less than significant.

Parking

Alternative 4 is expected to result in the loss of an estimated 41 on-street parking spaces. The project objectives support reductions in SOV trips, thereby decreasing the demand for parking.

Alternative 5: 9th Street Alternative Without Grand Avenue Extension

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 5 related to intersection capacity would be similar to those identified under Alternative 2 with the exception that under Alternative 5, construction activities would take place along 9th Street instead of 7th Street and would not include the Grand Avenue and 1st Street segments that would be part of the Grand Avenue extension. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Bicycle, Pedestrian and Vehicular Safety

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 5 related to safety would be similar to those identified under Alternative 2 with the exception that under Alternative 5, construction activities would take place along 9th Street instead of 7th Street and would not include the Grand Avenue and 1st Street segments that would be part of the Grand Avenue extension. During construction, travel lanes would be kept open as much as practicable, and the sidewalks would remain open to pedestrians. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Transit System Capacity

Less-than-significant impact with mitigation. Construction-period impacts under Alternative 5 related to transit system capacity would be similar to those identified under Alternative 2 with the exception that under Alternative 5, construction activities would take place along 9th Street instead of 7th Street and would not include the Grand Avenue and 1st Street segments that would be part of the Grand Avenue extension. Delays associated with lane closures would affect public transit vehicles if services are not rerouted. This is a potentially significant impact prior to implementation of mitigation. The TMP identified in Mitigation Measure **MM-TRAF-C1** would reduce impacts to less-than-significant levels.

Parking

Construction-period temporary losses of on-street parking spaces under Alternative 5 would be similar to those identified under Alternative 2 with the exception that under Alternative 5, construction activities would take place along 9th Street instead of 7th Street and would not include the Grand Avenue and 1st Street segments that would be part of the Grand Avenue extension.

Operational Impacts

Intersection Capacity

Less-than-significant impact. As shown in the *Traffic Technical Study* (Appendix J), none of the 65 study area intersections would exhibit a significant impact under Alternative 5, in either the AM or PM peak hour for 2014/2015, 2020, and 2040 conditions. Removal of the Grand Avenue extension, under Alternative 5, would reduce delays and significant impacts at the Grand Avenue/ 1st Street and Hill Street/1st Street intersections that would occur under Alternative 4. As such, impacts related to intersection capacity under Alternative 5 would be less than significant.

Bicycle, Pedestrian and Vehicular Safety

Significant impact. Impacts related to bicycle, pedestrian, and vehicular safety would be similar to those described under Alternative 4. Impacts related to pedestrians and vehicles would be less than significant and impacts related to bicycle safety would be significant due to the potential for tire-in-track incidents, as discussed above. A slightly increased level of potential safety concern for bicyclists would be associated with this alternative, as well as Alternative 4, because there is currently not an existing or planned bicycle facility on 9th Street. With the implementation of **MM-TRAF-O1**, impacts related to bicycle safety would remain significant.

Transit System Capacity

Less-than-significant impact. As discussed under Alternative 2, operation of Alternative 5 would provide an additional public transit option in the study area. Existing bus services in the project vicinity would not experience significant delays, as no study area intersections would experience impacts. Project implementation would supplement existing transit services and would not reduce transit system capacity. Impacts would be less than significant.

Parking

Alternative 5 is expected to result in the loss of an estimated 41 on-street parking spaces, similar to Alternative 4. The project objectives support reductions in SOV trips, thereby decreasing the demand for parking. Off-street parking impacts are addressed in the MSF section below.

Traction Power Substations (TPSS)

The analysis presented in this section applies to all build alternatives.

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. With the exception of one location on Grand Avenue to the north of 2nd Street, all TPSS sites would be installed at off-street locations. During the installation period, worker equipment and vehicles may require temporary lane closures, resulting in temporary effects on roadway capacity, including at intersections. Impacts would be similar to those described under Alternative 2 and would be less than significant with implementation of **MM-TRAF-C1 and MM-TRAF-C2**.

Bicycle, Pedestrian and Vehicular Safety

Less-than-significant impact with mitigation. As discussed under Alternative 2, travel lanes would be kept open to the extent feasible, and the sidewalks would remain open to pedestrians. Nearly all activities related to the TPSS installation would be located off-street, but worker equipment and vehicles may require temporary lane closures. Such potential closures would be of short duration such that significant impacts related to bicycle, pedestrian, and vehicular safety would not occur. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Transit System Capacity

Less-than-significant impact with mitigation. No additional transit passengers would result from installation of the TPSS units. Although nearly all of the construction activities would be off-street, worker equipment and vehicles may require temporary lane closures, which has the potential to affect bus operations. Potential lane closures would be of short duration and impacts on overall transit system capacity would not occur. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, impacts would be less than significant.

Parking

Construction-period effects related to parking are discussed under Alternative 2 above. Installation of the TPSS units would not have a material effect on on-street parking.

Operational Impacts

Intersection Capacity

No impact. With the exception of the TPSS unit that would be installed on Grand Avenue (under Alternatives 2 and 4), all TPSS units would be located out of the roadway and would therefore have no effect on intersection capacity.

Bicycle, Pedestrian and Vehicular Safety

Less-than-significant impact. All TPSS units would be located out of the public right-of-way with the exception of the TPSS unit at 2nd Street and Grand Avenue. The units would be installed in a manner that would not obstruct pedestrian access. Bicycle and vehicular safety would be unaffected by placement of the TPSS units on a portion of the sidewalk.

Transit System Capacity

No impact. All TPSS units would be located out of the roadway, with the exception of the unit that would be installed on Grand Avenue (under Alternatives 2 and 4) and would therefore not have an effect on transit capacity.

Parking

All TPSS units would be located out of the roadway, with the exception of the unit that would be installed on Grand Avenue (under Alternatives 2 and 4). This unit would not affect parking as there is no parking permitted on lower Grand Avenue.

Maintenance and Storage Facility (MSF)

The analysis presented in this section applies to all build alternatives. With the exception of effects on off-street parking supply, each of the MSF sites would have similar effects related to traffic and transportation and are therefore evaluated together. Where differences in impacts would occur, those differences are discussed.

Construction Impacts

Intersection Capacity

Less-than-significant impact with mitigation. During the construction of the MSF, vehicle trips would be made for construction worker commutes, material deliveries, and off-hauling of excavated materials. Although the majority of commute trips by construction workers would be made outside of the peak commute periods, some may coincide with peak-period traffic, adding to intersection delays. As discussed under Alternative 2 above, approximately 10 to 15 trucks per day would occur as part of utility relocation, track-laying activities, and MSF excavation. Most of the activities associated with MSF construction would occur off-street, but there may be periods in which lane closures would be required to allow for the MSF to connect to the fixed guideway within the roadway. Such closures would be limited in duration and would not have a permanent effect on intersection capacity. With the implementation of **MM-TRAF-C1 and MM-TRAF-C2**, MSF construction-period impacts related to intersection capacity would be less than significant.

Bicycle, Pedestrian and Vehicular Safety

Less-than-significant impact with mitigation. As discussed under Alternative 2, travel lanes would be kept open to the extent practicable. In order to integrate the MSF with the fixed guideway, short-term sidewalk closures on the sidewalks adjacent to the MSF site may be required, which has the potential to temporarily reduce pedestrian access. However, with implementation of **MM-TRAF-C1 and MM-TRAF-C2**, MSF construction-period impacts related to project access would be less than significant.

Transit System Capacity

Less-than-significant impact. MSF construction workers would not rely heavily on transit for commute trips because their work hours would be irregular and the transport of equipment and tools to the work site would normally require the use of personal vehicles.

Parking

The MSF would require the acquisition of properties that currently serve as surface parking lots. Permanent loss of off-street parking spaces in the following estimated amounts would occur when construction commences, depending on the MSF site selected:

- 11th Street and Olive Street (West) – 350 spaces

- 11th Street and Olive Street (East) – 140 spaces
- Hill Street and 5th Street – 430 spaces
- Broadway and 2nd Street – 240 spaces

Although the loss of off-street parking may be an inconvenience to those currently using the surface parking lot that would be acquired, additional options for off-street parking exist in downtown Los Angeles and would remain available to the driving public. This loss of parking would represent a small percentage of the total parking resources in downtown Los Angeles.

Operational Impacts

Intersection Capacity

Less-than-significant impact. Trips generated by streetcar employees (i.e., operators, supervisors, maintenance staff) reporting to or working at the MSF site were not included in the estimate of additional trips because it is anticipated that their work hours would be outside the AM and PM peak hours commute periods. Normal streetcar operations would be distributed over the course of the day and would require employees to be available: (a) prior to the beginning of daily operations, (b) during off-peak periods when some vehicles would be taken out of service, and (c) at the end of daily operations. Consequently, trips generated by MSF employees at the MSF site would be distributed over the course of the day and would be minimal, if any, during the AM or PM peak hours. The number of trips generated by the employees would also be below the minimum threshold (25 vehicles per hour) set forth by the LADOT for evaluating traffic impacts.

Intersections nearby to the MSF sites would be potentially affected as follows:

The Broadway and 2nd Street MSF site is bounded by 2nd Street, 3rd Street, Broadway and Hill Street. The Broadway/2nd Street intersection is expected to experience a significant impact in both 2020 and 2040, due to growth in background traffic. The Broadway/3rd Street intersection has, and is expected to experience, a significant impact in 2015 and in both 2020 and 2040, due to existing and growth in background traffic. The 2nd/Hill Street and 3rd/Hill Street intersections are not projected to have significant impacts in 2015, 2020 or 2040.

The Hill and 5th Street MSF site is bounded by 4th, 5th Hill and Olive Streets. No significant impacts are projected at any of the four intersections.

The 11th and Olive Street (East) MSF site is bounded by 11th, 12th, Hill and Olive Streets. The 11th/ Hill Street intersection is projected to have a significant impact in 2040, due to growth in background traffic.

The 11th and Olive (West) MSF site is bounded by 11th, 12th and Olive Streets, and Grand Avenue. No significant impacts are projected at any of the four intersections.

Bicycle, Pedestrian and Vehicular Safety

Significant impact. Impacts related to bicycle, pedestrian, and vehicular safety would be similar to those described under Alternative 2. Impacts related to pedestrians and vehicles would be less than significant. Impacts related to bicycle safety would be significant due to the potential for tire-in-track incidents resulting from the fixed guideway's connection to the MSF, as discussed above. Following the implementation of **MM-TRAF-O1**, impacts related to bicycle safety would remain significant. Each of the four MSF sites would be designed to provide driveway access that would not result in an increased hazard to bicyclists. Adjacent sidewalks to each of the sites would be provided to allow for pedestrian flow. Vehicle access into and out of each of the MSF sites would be designed to LADOT requirements regarding placement of driveways within the site, proximity to the nearest intersection and permitted turning movements.

Transit System Capacity

Less-than-significant impact. Operation of the MSF would provide the supporting facilities for an additional public transit option in the study area. The implementation of the Project would supplement existing transit services and is not expected to generate additional transit demand such that transit system capacity would be exceeded.

Parking

As discussed above, MSF operation would result in the permanent loss of up to an estimated 430 off-street parking spaces. Although the loss of off-street parking may be an inconvenience to those drivers currently using the surface parking lot that would be acquired, additional options for off-street parking in downtown Los Angeles would remain available to the driving public. Once built, the facility would provide adequate parking spaces to accommodate its employees that are working on site, as required by the LAMC.

3.10.4 Mitigation Measures

3.10.4.1 Construction

Construction-related traffic impacts would be mitigated by the following measures.

MM-TRAF-C1: Develop a Construction Traffic Management Plan. The Los Angeles Department of Transportation (LADOT) shall develop and implement a Traffic Management Plan (TMP) to reduce construction-related traffic impacts on public services, community facilities, utilities, bicycle circulation, and pedestrian circulation. The TMP shall be prepared during final design for implementation during construction to mitigate the traffic impacts caused by construction of the Project. The TMP shall identify potential measures such as public awareness and changeable message signs. The TMP shall be developed in consultation with emergency service providers (i.e., local police and fire departments).

The TMP shall address construction duration and activities and include measures such as a temporary traffic signal, bicycle lane detours, or flagmen adjacent to construction activities. The TMP shall also coordinate review of construction activities along cross and parallel streets accordingly. A community affairs entity shall be established to administer a construction impact mitigation program for the benefit of the community. This program shall keep the community informed of all construction activities, with special emphasis on activities that affect the public. The program shall also set up a hotline number with a direct connection to staff familiar with the community and the Project. This entity shall offer individual consultation for residents, facilities, and businesses for remedies appropriate to the impacts encountered. The program shall identify community/business needs prior to and during the construction period through the use of surveys and community meetings. LADOT and the City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE), through the construction contractor per bid specifications, shall be the responsible party. Access to businesses will be maintained during construction. Enforcement shall be achieved through the City of Los Angeles Department of Public Works Contracts Administration Bureau Construction Inspector.

MM-TRAF-C2: Construction Mitigation Monitoring. A construction mitigation program shall be established with participation of City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE), Bureau of Contracts Administration, and the construction contractor. All mitigation measures shall be monitored and reported to LABOE on a quarterly basis. The Los Angeles Department of Transportation and LABOE, through the construction contractor per bid specifications, shall be the responsible party. Enforcement shall be achieved through the City of Los Angeles Department of Public Works Contracts Administration Bureau Construction Inspector.

3.10.4.2 Operation

Bicycle Safety

The following measure would reduce the impacts for the Project related to bicycle safety.

MM-TRAF-O1: Mitigation to be considered would include:

- Signage and pavement markings to alert bicyclists to the presence of streetcar tracks.
- Instruct cyclists to cross tracks perpendicular to the direction of the rails. For left-turning cyclists, pavement markings shall be provided to encourage perpendicular bicycle turning movements, such as "Copenhagen Left" turns.[4] The signage and/or pavement markings would also clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway.
- Alert bicyclists to use parallel bike routes (or Class II bike facilities) where available, such as Spring Street as an alternative to southbound Broadway."
- Recommend alternate routes.

Intersection Capacity

With regard to mitigation for impacts on study area intersections, with the adoption of the *Downtown Design Guide* and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening is not feasible either due to these new standards or because it was not considered practical or desirable to widen the street at the expense of reduced sidewalk widths. Therefore, no feasible measures would mitigate significant impacts on study area intersections. Significant and unavoidable intersection impacts would occur at each of the intersections identified below.

[4] A Copenhagen Left turn is a two-staged left turn wherein the bicyclist crosses the intersection ahead, stops on the opposite side in the direction he/she wishes to turn, awaits a green light, and crosses the intersection to complete the left turn.

Table 3.10-11. Significant and Unavoidable Intersection Impacts

Alternative	Grand Avenue/ 1st Street	Hill Street/ 1st Street	Hill Street/7th Street
Alternative 2			
Existing (2014/2015)	PM Peak (LOS D)	AM Peak (LOS D)	AM Peak (LOS D)
Opening Year (2020)	PM Peak (LOS E)	AM/PM Peak (LOS D)	AM/PM Peak (LOS D)
Horizon Year (2040)	PM Peak (LOS E)	AM/PM Peak (LOS E)	AM Peak (LOS E); PM Peak (LOS D)
Alternative 3			
Existing (2014/2015)	LTS	LTS	AM Peak (LOS D)
Opening Year (2020)	LTS	LTS	AM/PM Peak (LOS D)
Horizon Year (2040)	LTS	LTS	AM Peak (LOS E); PM Peak (LOS D)
Alternative 4			
Existing (2014/2015)	PM Peak (LOS D)	AM Peak (LOS D)	LTS
Opening Year (2020)	AM Peak (LOS E)	AM/PM Peak (LOS D)	LTS
Horizon Year (2040)	AM Peak (LOS E)	AM/PM Peak (LOS E)	LTS
Alternative 5			
Existing (2014/2015)	LTS	LTS	LTS
Opening Year (2020)	LTS	LTS	LTS
Horizon Year (2040)	LTS	LTS	LTS
LTS: Less-than-significant impact Source: Appendix J			

3.10.5 Cumulative Impacts

The selection of study area intersections was based on intersections where the streetcar would pass through, as well as nearby intersections that would account for potential traffic diversions that could occur due to reductions in the roadway capacity along the project alignment as a result of the *Broadway Streetscape Master Plan*, the *Figueroa Corridor Streetscape Project*, and new bicycle infrastructure contained in *Mobility Plan 2035.* In addition to these related roadway projects, the traffic model accounted for all projects listed in Table 2-5 of Chapter 2, *Project Description*. Based on this information, the study area for the purpose of cumulative impacts is the same study area as that analyzed in the *Transportation Technical Study* (Appendix J).

3.10.5.1 Construction

As discussed in Section 3.10.3.3, project-level impacts during construction activities would result in lane closures, commute trips by construction workers, and material hauling trips. Because other projects in the vicinity of the proposed Project could be under construction or in operation as the proposed Project is being constructed, the impacts of related projects could also occur in the project vicinity. However, the linear components of the Project would be short term for each affected roadway segment. MSF construction and TPSS installation would also be site specific and would require little in the way of lane closures or other traffic impacts. Furthermore, the implementation of **MM-TRAF-C1 and MM-TRAF-C2** would reduce Project-level impacts to less-than-significant levels. As such, the Project's contribution to cumulatively considerable construction-period impacts would not be significant.

3.10.5.2 Intersection Capacity

As discussed in Section 3.10.3.3, there would be significant unavoidable impacts associated with implementation of the Project at as many as three intersections for Alternatives 2, 3, and 4. Therefore, the Project would result in a cumulatively considerable contribution to a significant cumulative impact at these locations for these alternatives. For all other intersections, however, impacts of the Project in combination with related projects identified in Table 2-5 would not be cumulatively considerable. Because no significant unavoidable impacts related to intersection capacity would occur under Alternative 5, no cumulatively considerable effects would occur under Alternative 5.

3.10.5.3 Bicycle, Pedestrian, and Vehicular Safety

In terms of pedestrian circulation and safety, the Project would be consistent with the City's *Broadway Streetscape Master Plan*, the *Downtown Street Standards*, and the *Downtown Design Guide* because they would not conflict with recommended sidewalk widths or interfere with existing pedestrian patterns. Because these plans were formulated to ensure a safe pedestrian environment in the study area, impacts of the Project would not be cumulatively considerable.

Bicycle infrastructure in the study area is governed by the *City of Los Angeles 2010 Bicycle Plan*, a component of *Mobility Plan 2035*. As discussed above, the Project could result in tire-in-track accidents for cyclists who travel parallel or close to parallel to the fixed guideway. With the implementation of pavement markings and signage identified in **MM-TRAF-O1**, the risks would be reduced, but would remain potentially significant. Because significant project-level impacts related to bicycle safety have been identified, the Project would also result in cumulatively considerable impacts.

Increased delays relative to existing conditions would have implications with respect to response times to Project-related emergencies. Because of the increase in the number of intersections operating at LOS E or F during peak hours attributable to the Project, related projects, and growth, the effects on emergency service providers would be cumulatively considerable. However, the contribution from implementation of the Project would be minor, as evidenced by comparing traffic operations under the Project with the No Project Alternative. Although delays would occur as a result of implementation of any of the project alternatives, the low number of substantially affected intersections and the grid layout of downtown roadways would allow emergency service providers to reach emergency sites from alternative routes and avoid intersections with long delays. Therefore, the Project would not result in a cumulatively considerable contribution to cumulative effects related to emergency services.

3.10.5.4 Transit System Capacity

Implementation of the proposed Project, in combination with the projects identified in Table 2-5, is likely to result in additional demand for transit services in the project area, as people would shift from other modes of transportation. Given that the Project would create additional transit system capacity and that additional projects, such as the Regional Connector project, are also increasing transit system capacity in the project vicinity, impacts would not be cumulatively considerable.

This page was intentionally left blank.

Chapter 4
Alternatives to the Project

4.1 Introduction

CEQA requires an EIR to describe a range of reasonable alternatives to a project, or an alternative location of a project, that could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives.

This chapter discusses the process that was followed to consider alternatives. It documents those alternatives that were considered but eliminated from further consideration as well as the reasons for their dismissal. It also discusses the alternatives that have been carried forward for analysis and the reasons for their retention.

Key provisions of the State CEQA Guidelines (Section 15126.6) pertaining to the alternatives analysis are summarized below.

- The discussion of alternatives should focus on alternatives to a project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if the alternatives impede, to some degree, attainment of the project objectives or are more costly.
- The No Project Alternative must be evaluated along with its impact. The No Project analysis should discuss existing conditions as well as the reasonably expected outcome in the foreseeable future from not approving the project, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a "rule of reason"; therefore, the EIR need evaluate only those alternatives that are necessary to permit a reasoned choice.
- An EIR need not consider an alternative with effects that cannot be reasonably ascertained, an implementation plan that is remote and speculative, or a design that would not achieve the basic project objectives.

The range of feasible alternatives should be selected and discussed in a manner that fosters meaningful public participation and informed decision-making. Among the factors that may be taken into account when considering the feasibility of alternatives, as described in State CEQA Guidelines Section 15126.6(f)(1), are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to the alternative site.

4.2 Project Objectives

As presented in Chapter 2, *Project Description*, the Project has the following objectives.

- **Land Use and Economic Development: Support the growth and revitalization of downtown Los Angeles, including its historic districts.**
  - Revitalize geographically isolated, underutilized areas.
  - Promote smart, sustainable growth that helps to reduce sprawl.
  - Implement transit policies that support the City's General Plan.
  - Integrate transit and land use within the study area.
  - Encourage historic restoration and transit-oriented development.
  - Strengthen downtown's economic competitiveness.
  - Foster a more livable downtown.
  - Create a distinctive tourist draw that would expand the economic base of the City and maximize tax revenue.
  - Improve transit access to existing and planned developments.
  - Improve interconnectivity between residential areas, employment and activity centers and retail services.
  - Help to create a vibrant outdoor ambience that would attract residents and visitors to the streets of downtown Los Angeles.
- **Mobility: Enhance mobility and transit circulation in downtown Los Angeles.**
  - Connect major districts, destinations, and activity centers.
  - Improve transit coverage and circulation.
  - Provide easy to use, localized, high-frequency service.
  - Serve transit-dependent populations.
  - Improve transit accessibility and operational efficiency.
- **Congestion Relief: Create pedestrian-oriented amenities interconnected with sidewalks and public space that will enhance downtown Los Angeles' distinct identity.**
  - Reduce dependency on automobiles by implementing transit services and improving walkability.
  - Increase mobility and accessibility for visitors and people who live and work in downtown.
- **Environmental Benefits: Protect and improve aspects of the downtown core.**
  - Preserve the area's historic significance and revitalize the Historic Core.
  - Reduce automobile trips within downtown.

4.3 Alternatives Considered but Eliminated from Further Discussion

Section 15126.6(c) of the State CEQA Guidelines states that alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or are unable to avoid any significant environmental effects. The sections that follow provide the following information: (1) a summary description of a formal Alternatives Analysis process that was carried out, (2) an identification of the alternatives that were eliminated from further consideration as a result of that process, (3) summary of an alternative mode that was considered and the reasons for it not being considered further, (4) a discussion of alternatives that were raised during the scoping process and their disposition, and (5) a discussion of recently considered modifications to the project alternatives.

4.3.1 Alternatives Analysis

A formal Alternatives Analysis process (Metro 2012) was conducted to develop and evaluate potential alternatives for restoring historic streetcar service in downtown Los Angeles. This process was carried out with the cooperation of the Community Redevelopment Agency of the City of Los Angeles (CRA/LA), Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles Streetcar, Inc. (LASI), and the Federal Transit Administration (FTA). The Alternatives Analysis was the culmination of several planning and feasibility studies that were conducted between 1995 and 2010; it was completed in 2012.

The Alternatives Analysis process developed a range of routing and operating options and evaluated them using a two-step screening process. The initial screening was a conceptual-level evaluation of the advantages and disadvantages of the alternatives considered. It included an analysis of alternatives that were developed cooperatively by Metro, CRA/LA, the “Bringing Back Broadway” initiative, and LASI. The purpose of the initial screening was to narrow down the range of alternatives considered for more detailed analysis in a subsequent final screening phase. The initial screening evaluation criteria were qualitative in nature and sought to eliminate alternatives having “fatal flaws” or that did not meet project goals or have public support.

The final screening evaluation criteria were more quantitative than those used in the initial screening and addressed additional topics such as ridership potential, operational characteristics, costs, system configuration, design issues, environmental issues, land use and economic development opportunities, and community support. Below is a summary of the alternatives that were considered in the Alternatives Analysis and the results of the initial and final screening evaluations.

4.3.1.1 Initial Screening of Alternatives

The alternatives were initially screened according to evaluation criteria developed by CRA/LA and Metro. The evaluation criteria correlated to the Project’s first two objectives stated above, which were originally generated during public workshops, meetings, and open houses intended to reflect input from public agencies, community groups, and stakeholders.

To evaluate the range of alternatives and reduce the number of potential combinations of alternatives, the initial screening alternatives were divided into three geographic segments, within which a range of alternative alignments was analyzed. Use of Broadway in the southbound direction was common to each initial screening alternative. The following initial screening evaluation criteria were developed and a rating system of High (1), best score; Medium (2); or Low (3), least score, was used for each criterion:

- Length (shorter alternatives received higher ratings due to reduced capital costs).
- Connectivity among downtown's various districts.
- Missed destinations (alternatives not reaching major destinations received lower ratings).
- Required connections (alternatives that required transfers, walking, or stairs/escalators to reach major destinations received lower ratings).
- Street grade (alternatives that use streets with a grade above 9 percent received lower ratings).
- Out of direction travel (travel that increases time required).
- Ridership potential.
- Capital costs.
- Operation and maintenance costs.
- Transit system integration (how well each alternative would connect to the existing transit system).
- Expandability (flexibility for future expansion of the streetcar service).
- Historic integrity (using streets that historically had streetcar service).
- Traffic delay.
- Travel and parking (alternatives requiring elimination of travel and/or parking lanes received lower ratings).
- Risks (major risks such as schedule, design, or construction).
- Economic development (ability of an alternative to serve areas with economic development potential).
- Local funding potential.
- Consistency with adopted plans and guidelines.
- Community support.
- Fatal flaws.

Table 4-1 provides the range of alternatives analyzed in the initial screening analysis and the individual scores resulting from the analysis.

Table 4-1. Initial Alternatives Screening by Segment

Alternative	Description	Details	Overall Score[a]
Segment A – North of 5th Street			
A1	Northbound on Hill Street between 5th Street and 1st Street, westbound on 1st Street between Hill Street and Hope Street, two-way on Hope Street between 1st Street and Hope Place, and eastbound on 1st Street between Hope Street and Broadway.	• Uses Broadway/Hill Street couplet. • Uses 1st Street and Hope Street to access Bunker Hill. • Two-way segment on Hope Street between 1st Street and Hope Street could be single track. • Serves Bunker Hill. • Does not serve Union Station.	34
A2	Northbound on Hill Street between 5th Street and 1st Street, westbound on 1st Street between Hill Street and Grand Avenue, southbound on Grand Avenue between 1st Street and 3rd Street, westbound on 3rd Street between Grand Avenue and Hope Street, northbound on Hope Street between 3rd Street and 1st Street, and eastbound on 1st Street between Hope Street and Broadway.	• Uses Broadway/Hill Street couplet. • Uses 1st Street and a Grand Avenue/3rd Street/Hope Street clockwise loop to access Bunker Hill. • Serves Bunker Hill. • Does not serve Union Station.	34
A3	Northbound on Olive Street between 5th Street and General Thad Kosciuszko (GTK) Way, westbound on GTK Way between Olive Street and Hope Street, northbound on Hope Street between GTK Way and 1st Street, and eastbound on 1st Street between Hope Street and Broadway.	• Uses Olive Street and GTK Way to access Bunker Hill. • GTK Way passes under Grand Avenue bridge deck. • Serves Bunker Hill. • Does not serve Union Station. • Forms a continuous loop.	49
A4	Westbound on 5th Street between Hill Street or Olive Street to Grand Avenue, northbound on Grand Avenue between 5th Street and 1st Street, and eastbound on 1st Street between Grand Avenue and Broadway.	• Uses Grand Avenue (14% grade). • Requires custom vehicle technology and operation because of 14% grade on Grand Avenue. • Risk regarding grade (feasibility cannot be determined until final design). • Creates one-way clockwise loop. • Serves Bunker Hill. • Does not serve Union Station. • Forms a continuous loop.	32
A5	Northbound on Hill Street between 5th Street and Temple Street, westbound on Temple Street between Hill Street and Grand Avenue, two-way on Grand Avenue between Temple Street and 1st Street, eastbound on Temple Street between Grand Avenue and	• Uses Broadway/Hill Street couplet. • Uses Temple Street and Grand Avenue to access Bunker Hill. • Two-way segment on Grand Avenue between Temple Street and 1st Street could be single track. • Serves Bunker Hill.	34

Alternative	Description	Details	Overall Score[a]
	Broadway, and southbound on Broadway between Temple Street and 1st Street.	• Does not serve Union Station.	
A6	Northbound on Hill Street between 5th Street and 1st Street, westbound on 1st Street between Hill Street and Grand Avenue, two-way on Grand Avenue between 1st Street and the Grand Avenue bridge deck north of 2nd Street, and eastbound on 1st Street between Grand Avenue and Broadway.	• Uses Broadway/Hill Street couplet. • Uses 1st Street and Grand Avenue to access Bunker Hill. • Two-way segment on Grand Avenue could be single track, as could the track on 1st Street. • Serves Bunker Hill. • Does not serve Union Station.	25
A7	Eastbound on 1st Street between Hill Street and Main Street, northbound on Main Street between 1st Street and Paseo de la Plaza, southbound on Los Angeles Street between Paseo de la Plaza and 1st Street, and westbound on 1st Street between Los Angeles Street and Broadway.	• Uses Broadway/Hill Street couplet. • Uses Main Street/Los Angeles Street couplet to access Union Station. • Crosses US 101. • Serves Union Station. • Does not serve Bunker Hill. • Forms a continuous loop.	28
Segment B – Between 5th and 9th Streets			
B1	Southbound on Broadway, northbound on Hill Street between 9th Street and 5th Street.	• Uses Broadway/Hill Street couplet. • Uses peak-hour travel lane/off-peak parking lane on Hill Street (one or the other would need to be eliminated because they currently share the same travel lane).	23
B2	Southbound on Broadway, northbound on Olive Street between 9th Street and 5th Street.	• Uses Broadway/Olive Street couplet.	25
Segment C – South of 9th Street			
C1	Southbound on Broadway, westbound on Pico Boulevard, northbound on Figueroa Street, eastbound on 9th Street.	• Can use Broadway/Hill Street or Broadway/Olive Street couplet. • Crosses Blue Line at grade at Pico Boulevard.	30
C2	Southbound on Broadway, westbound on Pico Boulevard, northbound on Hope Street, westbound on 11th Street, northbound on Figueroa Street, eastbound on 9th Street.	• Can use Broadway/Hill Street or Broadway/Olive Street couplet. • Does not cross Blue Line at grade.	32
C3	Southbound on Broadway, westbound on 11th Street, northbound on Figueroa Street, eastbound on 9th Street.	• Can use Broadway/Hill Street or Broadway/Olive Street couplet. • Does not cross Blue Line at grade.	27

Source: Metro 2012.
[a] Lower scores denote better alternative performance.

The initial screening evaluation yielded the following recommendations: (1) within Segment A, Alternatives A4, A6, and A7 should be advanced; (2) both Segment B alternatives should be advanced; and (3) within Segment C, Alternatives C1 and C3 should be advanced, with Alternative C2 being reserved as a variation of Alternative C1.

4.3.1.2 Final Screening of Alternatives

Prior to moving forward with the final screening, the alternatives were refined, added, or replaced, as follows:

- Alternative A4 was modified to accommodate the 14 percent grade on Grand Avenue by including an elevated bridge structure, starting north of 6th Street and crossing over 5th Street. To accommodate this change, a new Alternative B3 was added to connect Alternative A4 with Segments B and C.
- Alternative C1 was ultimately replaced by C2 to avoid the at-grade Metro Blue Line/Expo Line crossing on Pico Boulevard.
- Alternative B4 was added, which would use Figueroa Street between 7th Street and 9th Street and Hill Street between 5th Street and 7th Street. This addition was made in response to public and stakeholder requests for the Project to include an alternative that better served the Financial Core and the 7th Street/Metro Center station.

With the changes noted above, the segments were then combined into seven individual alternatives, which were evaluated in the final screening analysis, as follows (see Table 4-1, above, and Figures 4a through 4g):

- Figure 4a: Alternative 1
- Figure 4b: Alternative 2
- Figure 4c: Alternative 3
- Figure 4d: Alternative 4
- Figure 4e: Alternative 5
- Figure 4f: Alternative 6
- Figure 4g: Alternative 7

This page intentionally left blank.

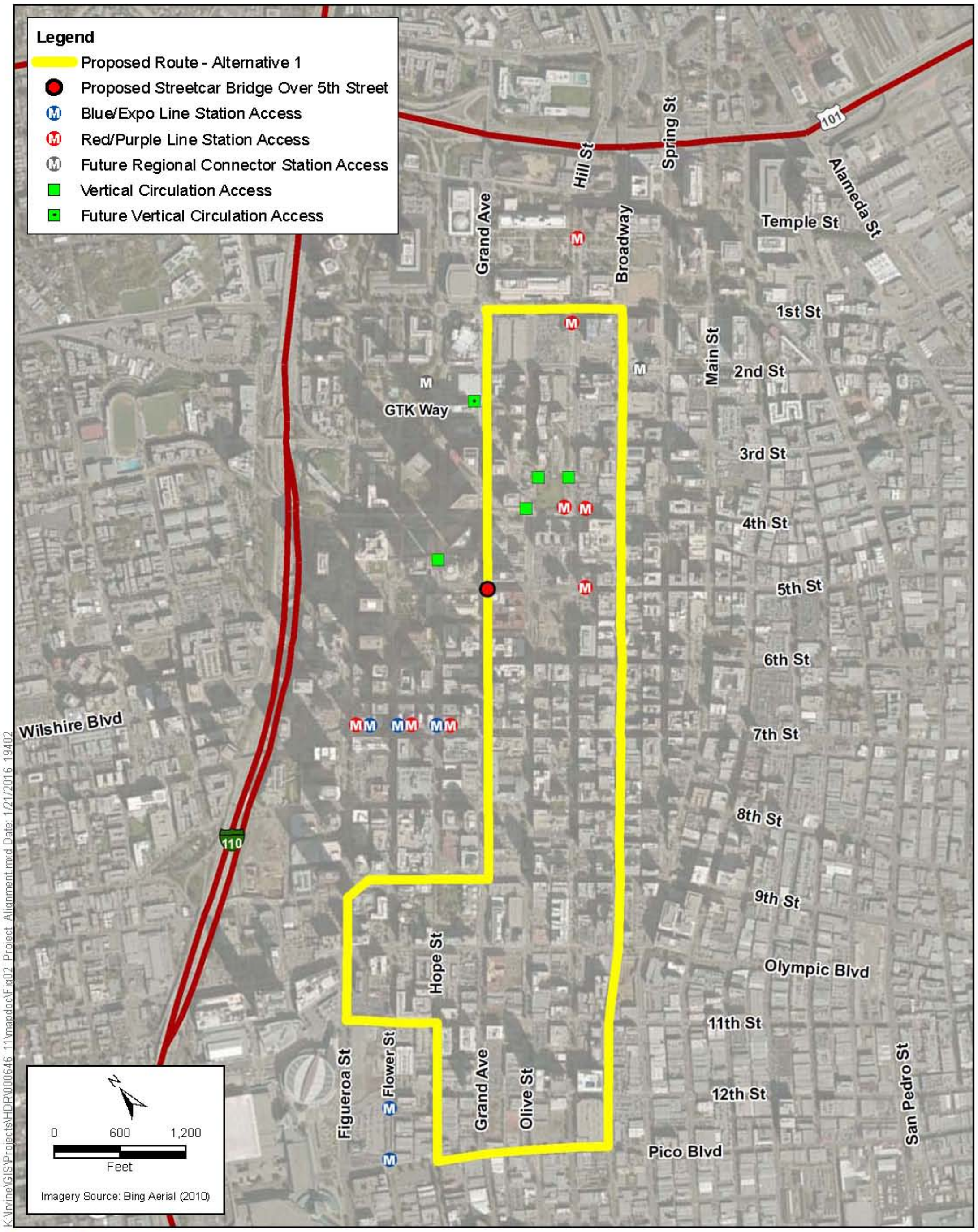
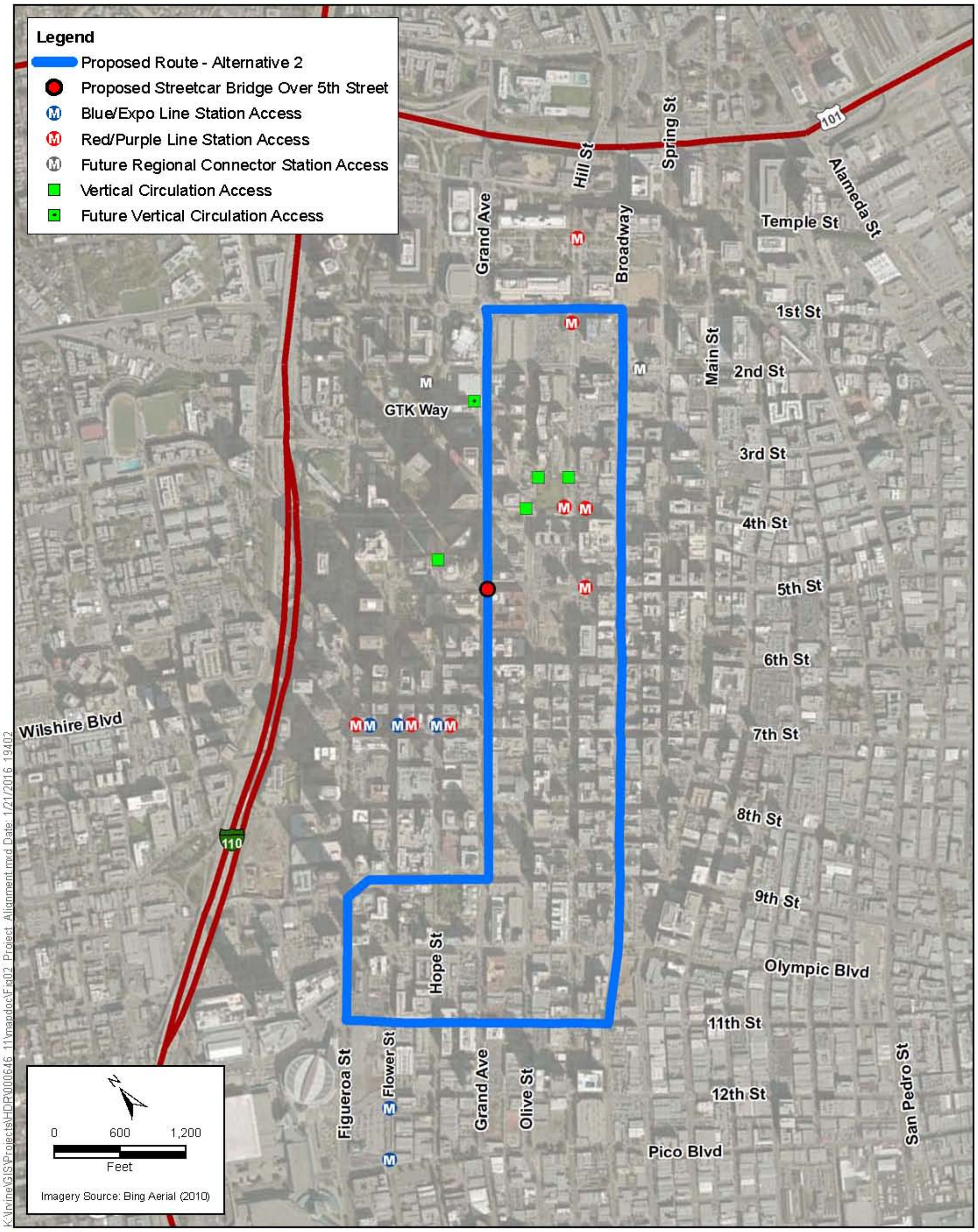


Figure 4a
Alternative 1
Restoration of Historic Streetcar Service in Downtown Los Angeles

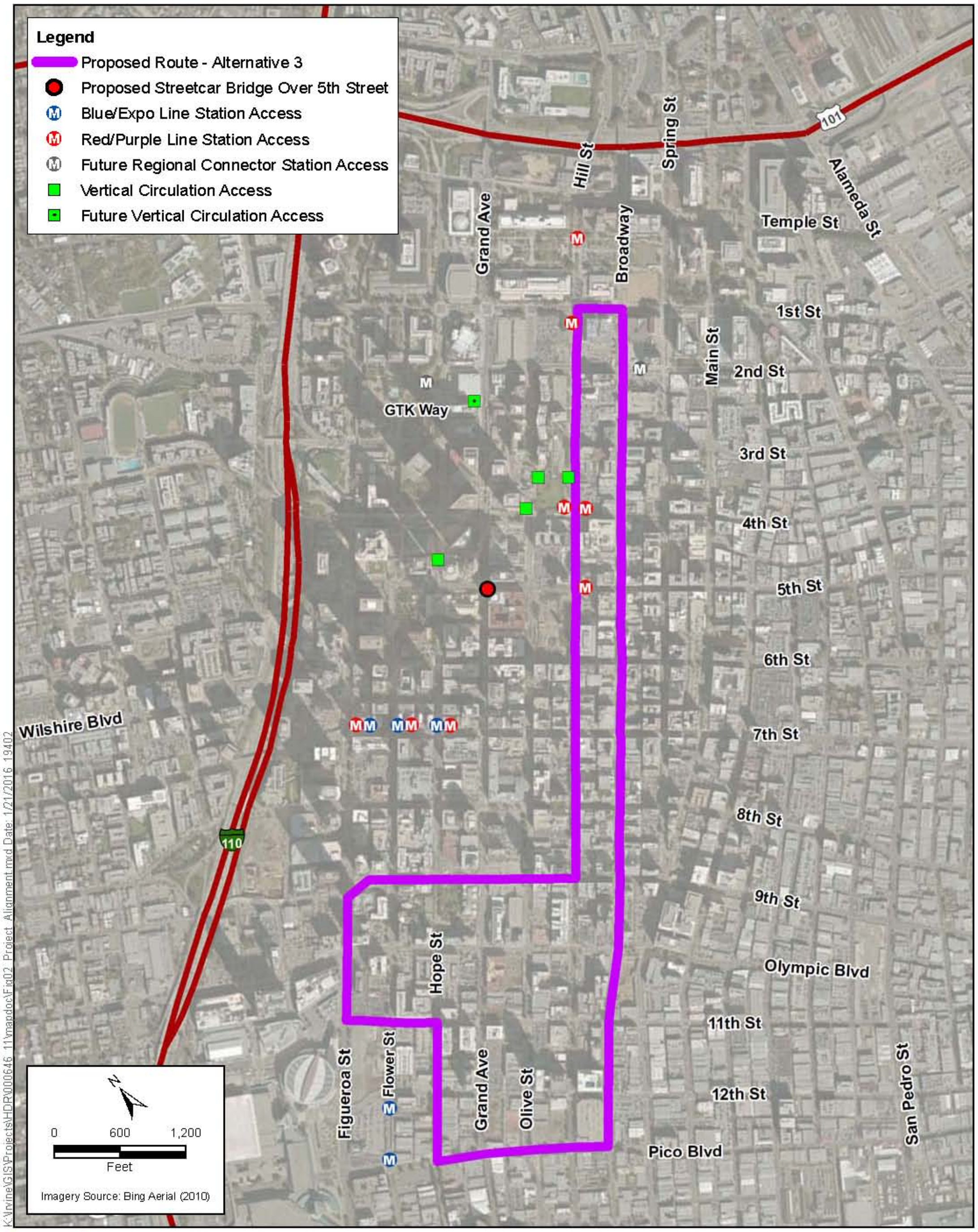
This page intentionally left blank.



ICF INTERNATIONAL

Figure 4b
Alternative 2
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.



ICF INTERNATIONAL

Figure 4c
Alternative 3
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

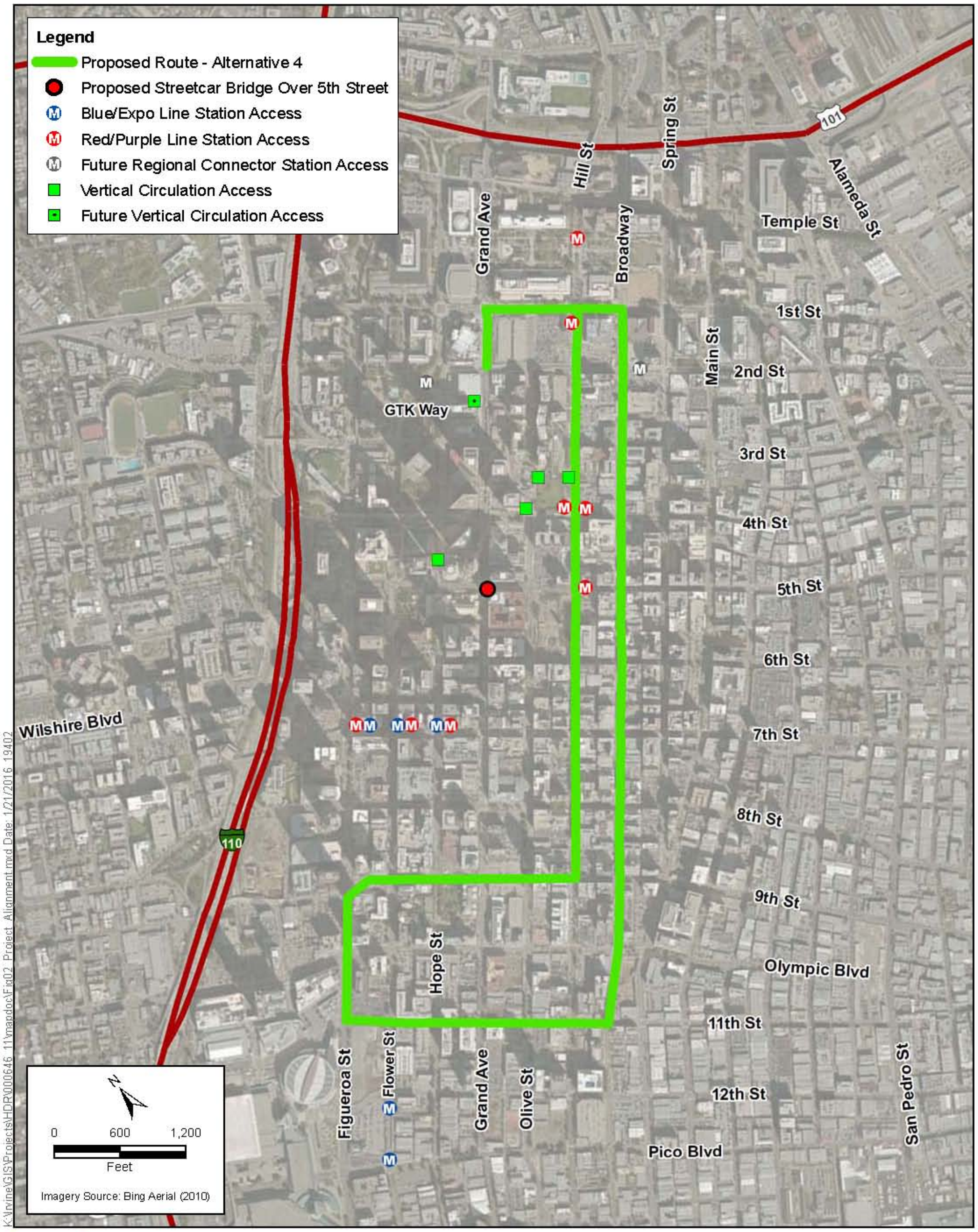


Figure 4d
Alternative 4
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

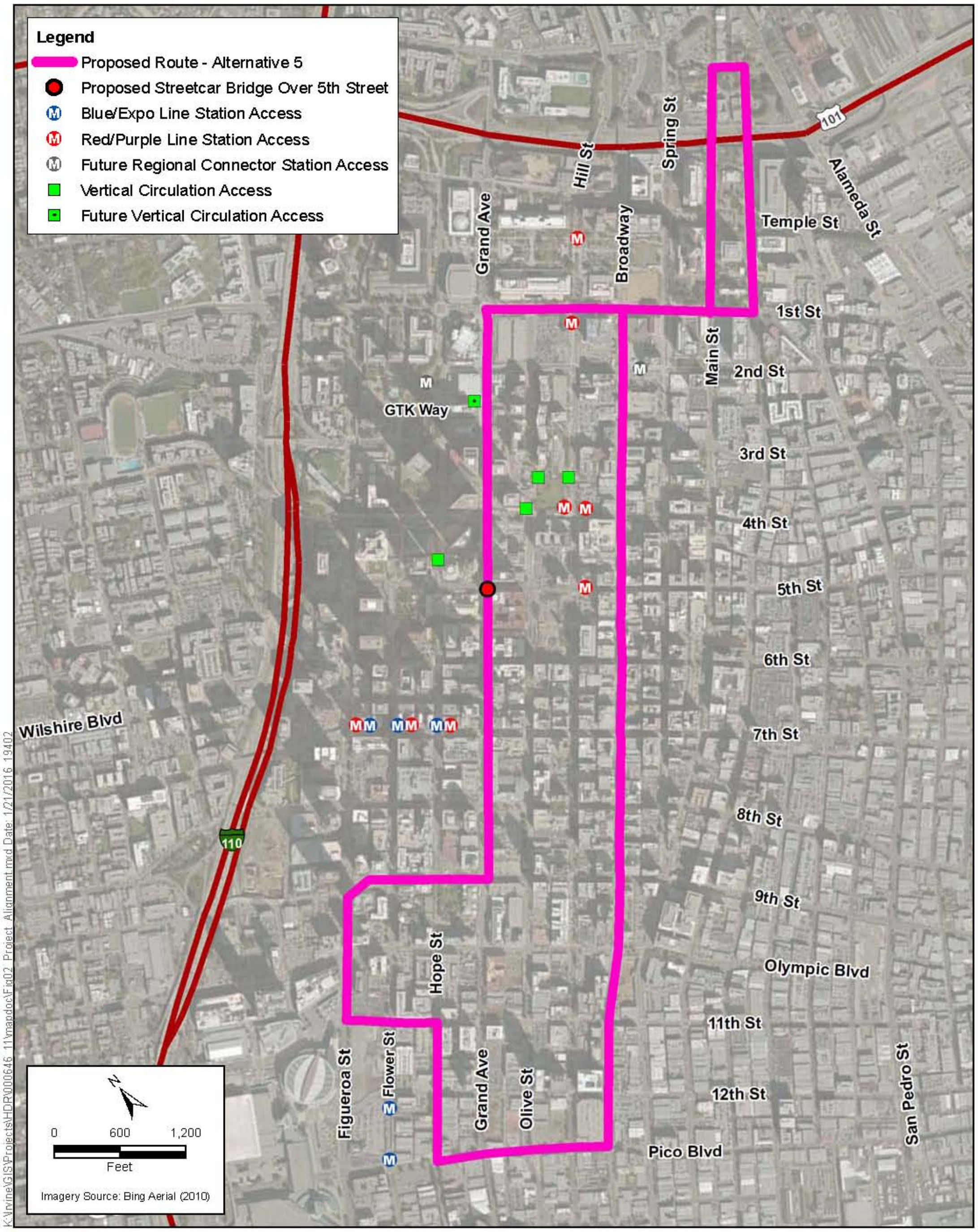


Figure 4e
Alternative 5
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

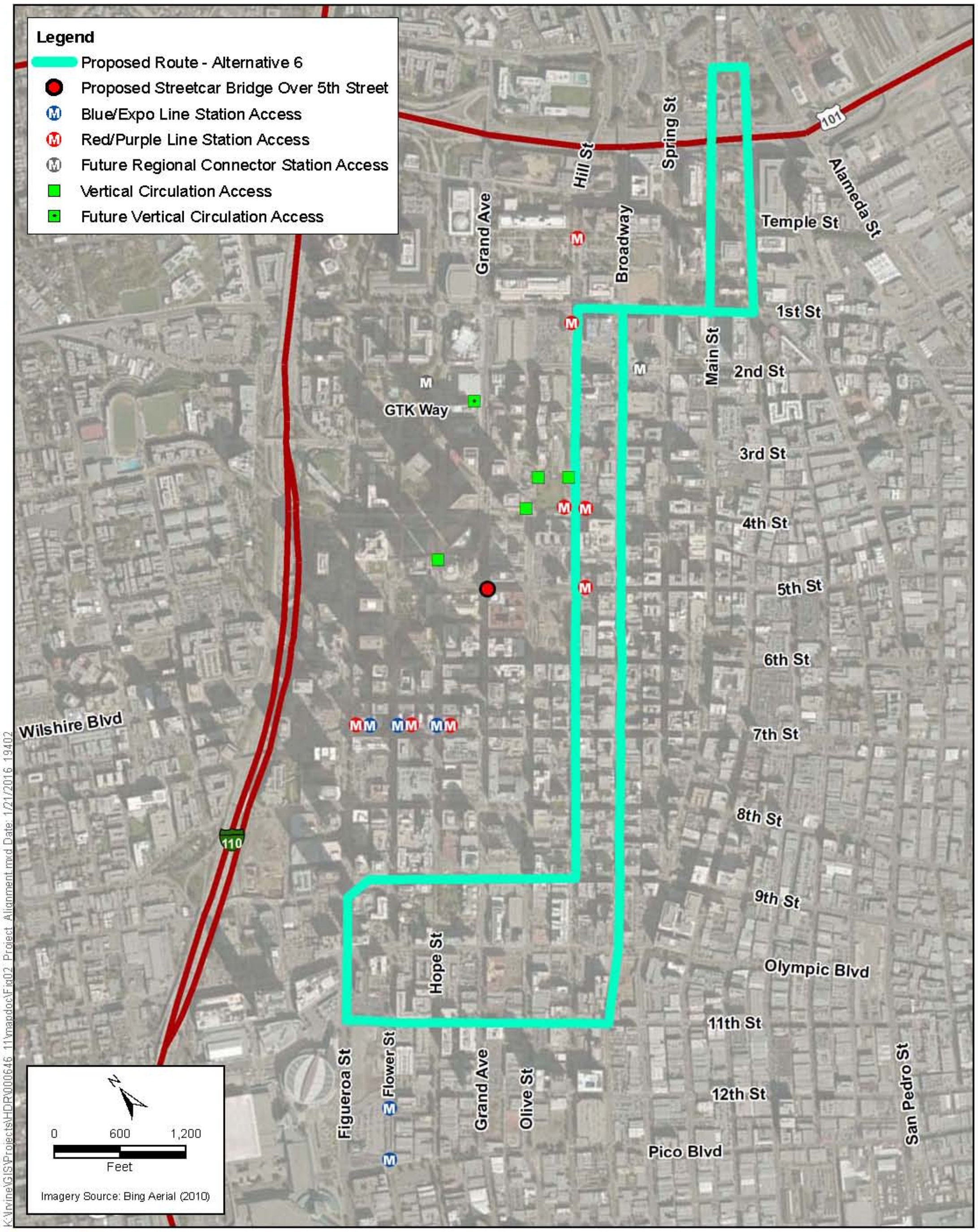
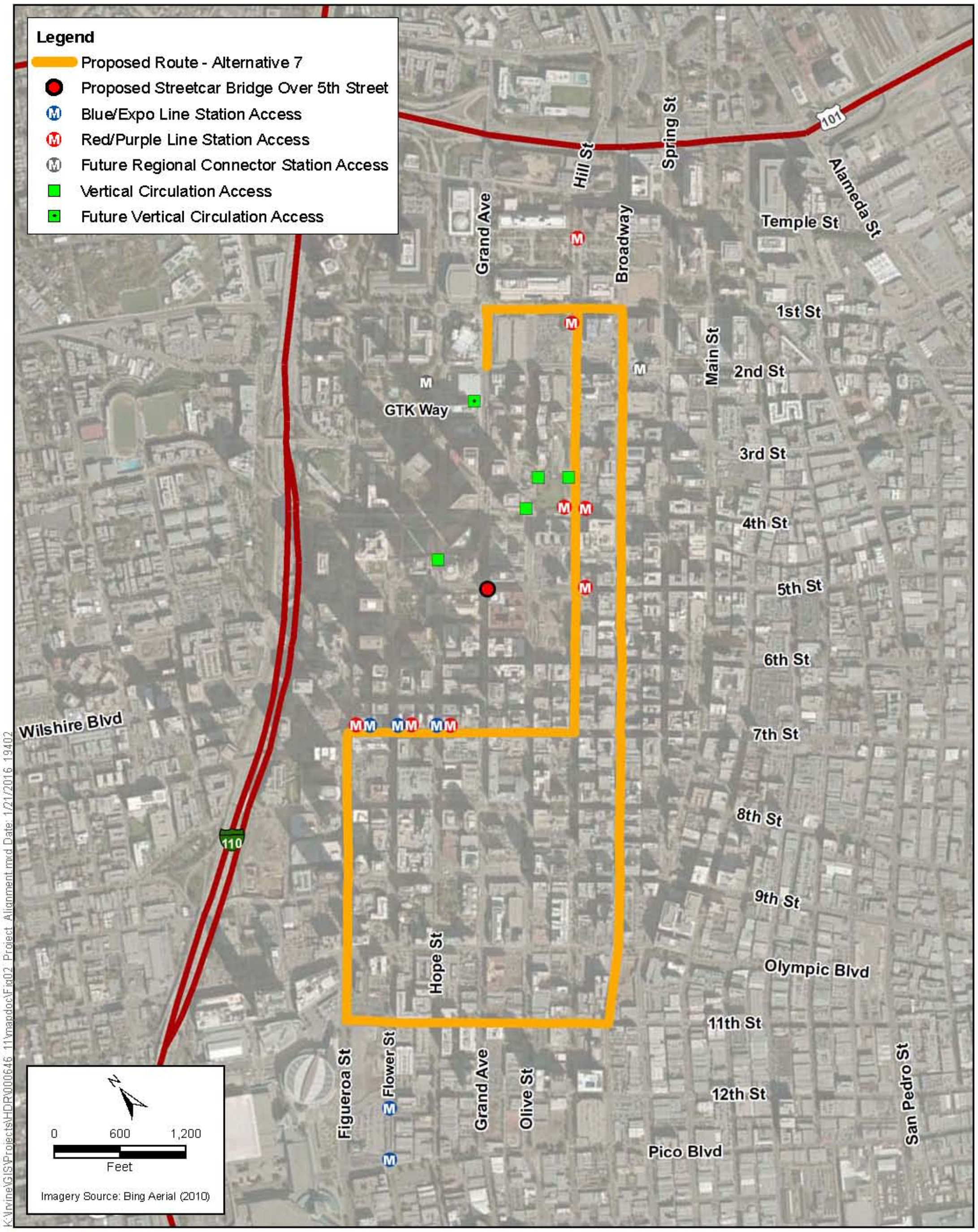


Figure 4f
Alternative 6
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.



ICF INTERNATIONAL

Figure 4g
Alternative 7
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

4.3.1.3 Results of Final Screening

Table 4-2 presents the results of the final screening analysis. The lower numbers represent better performance under the criteria.

Table 4-2. Final Alternatives Screening

	Alternative							
Criteria	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**Summary**
Ridership Potential	1	3	1	3	2	1	1	Alternatives 1, 3, 6, and 7 had the highest combined averages for daily boardings and boardings per mile.
Capital Costs	2	2	2	1	3	3	1	Alternative 4 and Alternative 7 had the lowest capital cost.
Operation and Maintenance Cost	1	1	2	1	3	3	1	Alternatives 1, 2, 4, and 7 had the lowest operation and maintenance cost.
Cost/Benefit Ratio	1	3	1	1	1	3	1	Alternatives 1 and 3 had the lowest cost per user, followed by Alternative 7, Alternative 5, and Alternative 4.
Missed Destinations	3	3	2	1	3	3	1	Alternatives 1, 2, 3, 4, and 7 served Bunker Hill, while Alternatives 5 and 6 served Union Station.
Circulation	3	3	2	1	3	3	1	Alternatives 1 and 2 cannot serve stops on Grand Ave between 3rd Street and 6th Street because of an elevated bridge structure. Alternatives 5 and 6 cross US 101 on-ramps/off-ramps.
Design Considerations	3	3	2	1	3	3	1	Alternatives 1 and 2 require an elevated bridge structure on Grand Avenue. Alternatives 1 and 2 require modification of the Grand Avenue bridge deck. Alternatives 5 and 6 require modification of the Main Street and Los Angeles Street bridge decks over US 101.
Environmental Issues	3	3	2	2	2	2	2	Alternatives 1 and 2 had the most potential environmental issues because of the elevated bridge structure on Grand Avenue.
Economic Development	1	2	1	2	1	2	2	Alternatives 1, 3, and 5 (Pico Boulevard) had more economic development potential than Alternatives 2, 4, 6, and 7 (11th Street).
Total	16	21	14	13	19	21	**11**	The lower the score, the higher the performance of the alternative.

As demonstrated in Table 4-2, Alternative 7 (now known as Alternative 2 – 7th Street Alternative with Grand Avenue Extension) was the highest performing alternative. In general, Alternatives 3 through 7 all were determined to have similar potential for environmental impacts, but less than that of Alternatives 1 and 2. To the extent that the screening criteria represent the project objectives, Alternatives 3, 4, and 7 performed best among the final cut screening alternatives, with Alternative 7 performing best in the areas related to the project objectives. Namely, Alternative 7 best achieved transit coverage and circulation and best fostered connections among major districts, destinations, and activity centers. While each of the alternatives assessed in the Alternatives Analysis would satisfy a majority of the project objectives, Alternative 7 (the 7th Street Alternative) was advanced because it best satisfied the project objectives while maintaining relatively low potential for environmental impacts.

4.3.1.4 Additional Variations Subsequent to the Alternatives Analysis

Subsequent to completion of the Alternatives Analysis, two additional variations have been identified for evaluation. The first of these is an alternative alignment that would travel along 9th Street instead of 7th Street, between Figueroa Street and Hill Street. This variation, which is now termed the 9th Street Alternative, was made necessary because LADOT, as part of the *City of Los Angeles 2010 Bicycle Plan*, has implemented vehicle lane reductions on 7th Street in order to provide space for bicycle lanes. Recognizing that there could be potential traffic impacts on 7th Street that were previously unanticipated, the 9th Street Alternative is now also included.

In addition, the Grand Avenue Extension, which has been a component of final screening Alternatives 3, 4, and 7, has also been the subject of some discussion related to heightened sensitivity regarding potential impacts on the acoustics of the Walt Disney Concert Hall and the Dorothy Chandler Pavilion. Also, given the significant presence of these attractions, this portion of Bunker Hill does not exhibit the need for revitalization that exists in other areas within downtown. It has also been stated that the Regional Connector (currently under construction) would provide mobility and transit connectivity for Bunker Hill that would otherwise be lacking in other parts of the streetcar route. Finally, there are substantial pedestrian-oriented amenities in this area that are interconnected with wide sidewalks and public space, such that there is less need to improve pedestrian-oriented amenities compared to other portions of the study area. For these reasons, the two primary alternatives that are being carried forward for evaluation in this EIR (7th and 9th Street) are each being considered both with and without the Grand Avenue Extension, thereby permitting a full range of choices that respond to both the project objectives and previously expressed concerns.

4.3.2 Rubber-Tired Transportation Systems Management Alternative

A rubber-tired transportation systems management (TSM) alternative (i.e., local circulator bus) would provide general transit service improvements to enhance the capacity and efficiency of the existing transportation system. Improvements such as bus upgrades, traffic signal improvements, lane reconfiguration, and lane assignment changes, among other strategies, could be incorporated. A rubber-tired TSM alternative could be similar to the Project with respect to alignment and level of service but would utilize rubber-tired vehicles (similar to existing buses) with no track.

Such a TSM alternative was considered early in project development, but was not carried forward, for several reasons. First, and perhaps most important, a rubber-tired alternative would not meet one of the key elements of the Project's purpose and need (see Chapter 2), namely assisting in the effort to revitalize downtown's historic buildings. Restoring streetcar service would be consistent with the character of the historic portions of downtown that once had such complementary transit service as part of the urban landscape. The sense of permanency that would be provided by a fixed-rail transportation mode would be a substantial commitment to the continued focus on downtown's historic core as an important facet of the downtown image. A rubber-tired local circulator would not provide the same perceived level of commitment.

Also, rubber-tired transit modes, despite their long-standing presence in downtown Los Angeles, have not been shown to have a substantial effect on economic development, and providing another bus route in downtown Los Angeles would not be expected to serve as a catalyst for revitalization. Fixed-guideway systems, on the other hand, have been demonstrated to lead to economic development because they provide a stronger sense of permanency and they also can be a transportation focal point that attracts visitors, tourists, and residents, which is also a stated objective of the Project.

Existing rubber-tired transit options in downtown Los Angeles have become ubiquitous and while they offer many options for users, their multiplicity of operators and routes can also be confusing to those who are not familiar with the range of choices and how to effectively navigate them. This perception and resultant hesitancy can be overcome by a permanent fixed route with separate branding that can be easier for the new or occasional user to understand.

Also, the streetcar features level boarding and exceptional ride quality, which would expand the range of riders attracted to the streetcar. Persons with mobility impairments could move on and off the vehicle without assistance, whereas with a rubber-tired vehicle, they would require a lift, a "kneeling" bus, or a ramp, which are sometimes inconvenient and can result in delays.

A rubber-tired transit alternative would not offer material benefits regarding environmental impacts. It would not shift vehicle trips from fossil-fueled to electrically powered vehicles, and therefore it would not contribute to desired reductions in local air and associated greenhouse gas emissions. A rubber-tired alternative would not require a new maintenance and storage facility, but the addition of new vehicles would add to the ongoing need for vehicle maintenance and repairs, with associated energy consumption for those activities. A rubber-tired alternative would not contribute to rail-related noise impacts at the Disney Concert Hall, but, as explained in Section 3.9, those impacts can be effectively mitigated, and therefore no material difference would occur. Future noise increases at other receivers would also not be materially changed, because those increases are primarily attributable to growth in downtown vehicular traffic over time, which would occur irrespective of the alternative implemented.

A rubber-tired alternative would likely not add substantially to the expected intersection impacts, but those impacts are only projected to occur at a maximum of three intersections, depending upon the streetcar alternative; therefore, those differences would also not be material. One impact would be different with a rubber-tired alternative, and that is the potential for bicycle safety hazards associated with streetcar track flangeways, which would not occur with a rubber-tired alternative. While this one impact is considered significant and unavoidable, the extent to which actual impacts may occur is not known, and therefore the expected differences would be considered speculative at this time.

For the above reasons, a rubber-tired TSM alternative was not carried forward.

4.3.3 Alternatives Suggested during Scoping

As part of the CEQA process, a public scoping period was initiated in January 2013 to notify the public of the Project and receive comments. Through this process, 28 commenters provided comments related to the project alternatives, and seven commenters provided comments related to additional alternatives or routes. The following provides a summary of the alternatives suggested during the scoping period.

4.3.3.1 6th Street Alignment

One commenter requested that an alternative route on 6th Street be considered because it would serve the largest office population in downtown (the Financial Core), including Bunker Hill and the Bonaventure and Biltmore hotels. Using 6th Street instead of 7th Street or 9th Street as the connection between Figueroa Street and Hill Street would be feasible, but it would create a portion of "dead track" (i.e., without serviceability) on Broadway between 6th and 7th Streets, because a two-way service connection track on 7th Street between Hill Street and Broadway would still be required.

4.3.3.2 Alternate North/South Alignment

Comments related to the north/south alignment called for considering an alternative alignment to either the Hill Street or Broadway alignments, in order to provide service to a larger geographic area. Although no other north/south alignment was recommended, it was suggested that a two-way alignment on Broadway be considered to improve efficiency.

Placing the two directions of a transit route on different streets, also known as a couplet, has advantages and disadvantages. The advantage of a couplet is that the station stops are spread apart, making them closer to a larger area. The disadvantage is that for some trips, walking distances could be increased. If the different directions are separated by too much distance, then the length of the walk required to return in the opposite direction might make it worthwhile to go to the nearest stop and ride around the loop. The couplet on Hill Street and Broadway was determined by the Alternatives Analysis to be the best compromise.

4.3.3.3 Combined 7th Street Alternative and 9th Street Alternative

One commenter recommended implementing both the 7th Street Alternative and the 9th Street Alternative to provide greater service coverage. Operating a streetcar under both the 7th Street Alternative and the 9th Street Alternative would double the annual operating costs if the same minimum level of service frequency were to be provided on 7th Street and 9th Street as planned for the remainder of the system. The remainder of the system would receive double the planned service frequency, providing service capacity significantly greater than projected ridership. Alternatively, half the service frequency could be provided on 7th Street and 9th Street, with every other train serving one or the other. Including both alternatives would be likely to lead to confusion for riders, which is contrary to the goal of providing a simple, accessible transportation mode. Capital and operation costs would be increased by adding additional route miles and potentially requiring more vehicles. In addition, traffic impacts, both during construction and during operation, would be increased due to redistribution of vehicles on 7th and 9th Streets. Associated air quality and noise impacts would also increase along with these potential traffic impacts.

4.3.3.4 Two-Way Streetcar System

One commenter recommended making the entire Project a two-way system. Building and operating a streetcar system in both directions around the loop could double the capital and operating costs of the Project without providing substantially improved functionality. It would also conflict with the

Broadway Streetscape Master Plan. Furthermore, a two-way streetcar system would create potential conflicts along one-way streets and could result in greater traffic impacts due to the need to accommodate streetcar vehicles in additional traffic lanes. Alternatively, in order to maintain acceptable traffic flow, this alternative would require substantial right-of-way acquisition affecting numerous historic buildings, displacing residents and businesses, and substantial alteration to existing land use patterns. Accordingly, this alternative would not reduce the environmental impacts of the Project and would not satisfy the project objectives.

4.3.3.5 Personal Rapid Transit

One commenter suggested consideration of a Personal Rapid Transit (PRT) system instead of a streetcar system. A PRT system would consist of an elevated guideway with small, on-demand, accessible, driverless electric vehicles to transport individual passengers to various destinations. A 7-mile route was suggested that would include the study area as well as Little Tokyo, Chinatown, and Dodger Stadium as destinations. The commenter argued that a PRT system would be preferable to streetcar service because it (in stated opinion): (1) would be cheaper to construct while delivering a greater area of coverage, (2) would be quieter, (3) would consume less energy per passenger mile, (4) would not interfere with traffic, (5) would provide greater point-to-point efficiency (6) would provide flexibility to allow station elements to be integrated into new and old buildings, and (7) can be easily expanded in the future because of low cost.

A PRT system was not moved forward for further consideration because it would have greater impacts on the built environment in downtown. Significant space would be needed to accommodate the PRT guideway support columns. If such space cannot be provided outside the street rights-of-way, this could require eliminating at least one traffic lane from public streets, which would result in substantial traffic impacts. In addition, the elevated station platforms would need to be scaled to accommodate peak-period passenger queuing, which would require a large amount of elevated infrastructure that would cast shadows on the streets and sidewalks below as well as potentially obstruct views of historic buildings, substantially altering the visual character of downtown. An elevated guideway would also require a substantial amount of easements in order to cross above private property, which would further restrict the feasibility of implementing such an alternative. For these reasons, a PRT system was not given further consideration.

4.4 Further Modifications Considered

As part of the development of the project description to be used in this EIR, further consideration was given to improving the operating speed of the streetcar. Two approaches were considered. First, operational traffic improvements, targeted at selected intersections, were identified, including right-turn lanes (which would help to clear vehicular traffic ahead of the streetcar) and changes to signal phase timing to provide more “green time” for the streetcar. Secondly, the concept of “transit-only lanes” was also considered, which would give the streetcar a dedicated right-of-way within which to operate, in order to increase operating speeds along the route. Southbound Broadway (between 2nd and 11th Streets) was selected as the best opportunity for demonstrating the benefit of this approach. Also considered was reducing the number of proposed stops along the route, which also would improve run times.

The above options were developed and evaluated in a Speed Improvement Study that was conducted between August and September of 2015. The results indicated that the greatest incremental benefit could be achieved by implementing operational improvements at selected intersections along the route, including the recommended turn lane improvements and signal timing changes. It was also determined that only marginal further improvements in run times could be achieved with implementing the transit-only lane option, and reducing the number of stops would also only yield minor benefits. Implementing a transit-only lane would also require major concessions from existing stakeholders and local plans, including limiting driveway and parking access for some Broadway residents and businesses or eliminating the implementation of the *Broadway Streetscape Master Plan* on the east side of Broadway. It was then decided that the proposed list of traffic operation improvements would be advanced; these improvements have been incorporated into the project description (see Section 2.5.4).

4.5 Comparison of Alternatives

According to the State CEQA Guidelines, the EIR should compare the merits of the alternatives and determine an environmentally superior alternative. Although not required under CEQA, this Draft EIR analyzes the following project alternatives equally in Chapter 3:

- Alternative 1 – No Project Alternative
- Alternative 2 – 7th Street Alternative with Grand Avenue Extension
- Alternative 3 – 7th Street Alternative without Grand Avenue Extension
- Alternative 4 – 9th Street Alternative with Grand Avenue Extension
- Alternative 5 – 9th Street Alternative without Grand Avenue Extension

The discussion below summarizes the results of the CEQA significance analysis under all alternatives for each resource area, using the detailed information and analysis presented in Chapter 3. To summarize how the alternatives differ physically from one another:

- Alternative 1 (No Project) would not implement streetcar service in downtown Los Angeles and, as a result, it would not satisfy the Project objectives summarized in Section 4.2 and discussed in detail in Section 2.3. This alternative serves as the baseline against which the Build Alternatives are measured.
- Alternatives 2 and 4 differ from Alternatives 3 and 5 in that the former include the Grand Avenue Extension whereas the latter do not include that component of the Project.
- Alternatives 2 and 3 differ from Alternatives 4 and 5 in that a portion of the former would run along 7th Street, whereas the latter would run along 9th Street.

In all other respects, the four Build Alternatives would be essentially the same. Also, the eventually chosen MSF site would serve the streetcar operation, irrespective of which Build Alternative is ultimately selected. Finally, all four Build Alternatives would be powered from a set of TPSS units, spaced approximately the same for each alternative (excepting the 7th or 9th Street portions of the alignment associated with Alternatives 2 or 3, or Alternatives 4 or 5).

Differences among the Build Alternatives are observed for the following impact categories: Traffic and Transportation, Bicycle Safety, Noise, Energy, and Greenhouse Gas Emissions. For all other impact categories, the impacts among the alternatives would be essentially the same.

4.5.1 Traffic and Transportation

Alternatives 2 and 4 would have significant impacts at three intersections: 1st Street/Grand Avenue, 1st Street/Hill Street, and 7th Street/Hill Street. The impacts at the first two intersections are associated with the Grand Avenue Extension. Alternative 3 (which does not include the Grand Avenue Extension) would only have a significant impact at the 7th Street/Hill Street intersection, and this impact would be the same as under Alternatives 2 or 4. Alternative 5 (because it also does not include the Grand Avenue Extension) would not have a significant impact at the 1st Street/Hill Street or 1st Street/Grand Avenue intersection. In addition, it would also not have a significant impact at the 7th Street/Hill Street intersection; it therefore would have no significant intersection impacts. In all cases, mitigation is not available to reduce the significant impacts to the level of less than significant.

The above differences can be summarized as follows:

- Alternative 2 – Significant Unavoidable Impact (3 intersections affected)
- Alternative 3 – Significant Unavoidable Impact (1 intersection affected)
- Alternative 4 – Significant Unavoidable Impact (3 intersections affected)
- Alternative 5 – No impact (no intersections affected)

4.5.2 Bicycle Safety

All four Build Alternatives would result in a significant impact affecting bicycle safety in that they would create areas where there would be the potential for bicycle tires to become caught in the streetcar rail flangeways. These potential hazards are associated with portions of the streetcar alignment in which bicyclists must share the travel lane with the streetcar vehicles, which would include Broadway (1st Street to 11th Street) and Hill Street (4th Street to 1st Street). Both locations are common to all four Build Alternatives. This potential hazard would also exist along 9th Street (between Figueroa Street and Hill Street), which is part of the Alternatives 4 and 5 alignments. Alternatives 2 and 3 (which would run along 7th Street, rather than 9th Street) would not have this exposure. Mitigation, potentially including lane markings, signage, alternate recommended bicycle routes, and education, would lessen the impact, but it would remain significant.

The above differences can be summarized as follows:

- Alternative 2 –Significant Unavoidable Impact (separated bikeway on 7th Street)
- Alternative 3 – Significant Unavoidable Impact (separated bikeway on 7th Street)
- Alternative 4 –Significant Unavoidable Impact (shared lane on 9th Street)
- Alternative 5 –Significant Unavoidable Impact (shared lane on 9th Street)

4.5.3 Noise

Alternatives 2 and 4, because they include the Grand Avenue Extension, would have noise impacts, potentially affecting the Disney Concert Hall, that would be considered moderate under FTA criteria and would exceed CEQA significance thresholds. Mitigation is available to reduce the impacts to less than significant. Alternatives 3 and 5, because they would not include the Grand Avenue Extension, would not have these impacts. Because the impacts would be considered significant, but mitigable, under Alternatives 2 and 4, and no impact under Alternatives 3 and 5, the distinctions among the four Build Alternatives for this impact would be negligible.

When future year (2020 and 2040) noise conditions are considered, noise impacts (considered moderate under FTA criteria and significant under CEQA thresholds) would potentially occur at up to nine receivers. These impacts would be associated with Alternative 2 (1 receiver), Alternative 3 (5 receivers), Alternative 4 (8 receivers), and Alternative 5 (8 receivers). Because these impacts are the result of increased traffic growth in downtown, they are not specifically assigned to the Build Alternatives. Also, mitigation for these impacts is not feasible.

The above differences can be summarized as follows:

- Alternative 2 – Potentially Significant Impact (mitigation required)
- Alternative 3 – Less Than Significant Impact
- Alternative 4 – Potentially Significant Impact (mitigation required)
- Alternative 5 – Less Than Significant Impact

4.5.4 Energy

Energy consumption for streetcar operations would be very similar, but there would be a slight difference between Alternatives 2 and 4 (approximately28, 000 MMBtu/yr) as compared with Alternatives 3 and 5 (approximately 26,000 MMBtu/yr). The small difference (5.7%) is due to the shorter routes traversed under Alternatives 3 and 5. Energy usage by the streetcar would be considered a less-than-significant impact, because energy consumption has been accommodated in LADWP long-term electricity delivery to downtown.

Each of the Build Alternatives would have an estimated number of daily riders that correspond to the differences in alignment and associated passenger boardings. A substantial portion of these boardings result in reduced use of automobiles, which, in turn, results in reduced vehicle miles of travel and associated gasoline consumption.

The differences can be summarized (using year 2040 figures) as follows:

- Alternative 2 – 21,856 MMBtu used per year
- Alternative 3 – 24,128 MMBtu per year
- Alternative 4 – 21,900 MMBtu per year
- Alternative 5 – 24,924 MMBtu per year

4.5.5 Greenhouse Gas Emissions

Greenhouse gas emissions occur as a result of streetcar operations, MSF operations, amortized construction emissions, and savings from reduced auto vehicle miles traveled. Each of the Build Alternatives would contribute to greenhouse gas production (and reduction) in relationship to their respective energy use and vehicle miles of travel savings.

The differences can be summarized (using year 2040 figures) as follows:

- Alternative 2 – 866 metric tons of CO_2e saved per year
- Alternative 3 – 533 metric tons of CO_2e saved per year
- Alternative 4 – 834 metric tons of CO_2e saved per year
- Alternative 5 – 371 metric tons of CO_2e saved per year

4.6 Relationship of Alternatives to Project Objectives

The proposed Project is intended to fulfill the four objectives outlined in Section 4.2 above and Chapter 2, *Project Description*: Land Use and Economic Development, Mobility, Congestion Relief, and Environmental Benefits. The following sections discuss the relationship of the proposed alternatives to the project objectives.

4.6.1 Alternative 1 – No Project Alternative

The No Project Alternative would not support the Land Use and Economic Development objective, because it would not introduce improvements to support the growth and revitalization of downtown Los Angeles, including its historic districts. Particularly, it would not encourage historic restoration and transit-oriented development.

4.6.2 Alternative 2 – 7th Street with Grand Avenue Extension

All project objectives would be met under this Alternative. Specifically, the 7th Street Alternative with Grand Avenue Extension would support the Land Use and Economic Development objective, as it would support the growth and revitalization of downtown Los Angeles, including its historic districts. Particularly, this alternative would encourage historic restoration and transit-oriented development, would create a distinctive tourist draw that would expand the economic base of the City and maximize tax revenue, would improve transit access to existing and planned developments, and would improve interconnectivity between residential areas, employment and activity centers, and retail services. This alternative would also support the Mobility objective, as implementation of the streetcar would enhance mobility and transit circulation in downtown Los Angeles. The Congestion Relief objective would also be supported under this alternative, given that the streetcar would reduce dependency on automobiles and would increase mobility and accessibility for people who live and work in downtown. Additionally, implementation of this alternative would support the Environmental Benefits objective by reducing automobile trips within downtown and would preserve the area's historic significance and revitalize the Historic Core.

4.6.3 Alternative 3 – 7th Street without Grand Avenue Extension

The 7th Street Alternative without Grand Avenue Extension would support the project objectives in a way nearly identical to that discussed under the 7th Street Alternative with Grand Avenue Extension. However, without the Grand Avenue Extension, the improvement to transit access and interconnectivity in downtown Los Angeles would be slightly less than with the Grand Avenue Extension. Nonetheless, the project objectives related to Land Use and Economic Development, Mobility, Congestion Relief, and Environmental Benefits would all be met under this alternative.

4.6.4 Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street Alternative with Grand Avenue Extension would support the project objectives in a way nearly identical to that discussed under the 7th Street Alternative with Grand Avenue Extension. The project objectives related to Land Use and Economic Development, Mobility, Congestion Relief, and Environmental Benefits would all be met under this alternative.

4.6.5 Alternative 5 – 9th Street without Grand Avenue Extension

The 9th Street Alternative without Grand Avenue Extension would support the project objectives in a way nearly identical to that discussed under the 7th Street Alternative with Grand Avenue Extension. However, without the Grand Avenue Extension, the improvement to transit access and interconnectivity in downtown Los Angeles would be slightly less than with the Grand Avenue Extension. Nonetheless, the project objectives related to Land Use and Economic Development, Mobility, Congestion Relief, and Environmental Benefits would all be met under this alternative.

4.7 Environmentally Superior Alternative (CEQA)

Because it would not provide a new transportation mode, the No Project Alternative would generally have no impact compared to existing conditions and to the Build Alternatives for the majority of environmental resource areas, including aesthetics, cultural resources, energy consumption, geology and soils, greenhouse gas emissions, hazardous materials, land use and planning, and noise and vibration. However, the No Project Alternative would not reduce downtown vehicle miles of automobile travel and associated air emissions, which is projected to occur under all of the Build Alternatives. Therefore, taken on balance, all of the Build Alternatives would be environmentally superior to the No Project Alternative, if the benefits of reduced auto miles of travel and associated air emissions are acknowledged.

The four Build Alternatives would have similar impacts (see Section 4.5, above). A substantial portion of the differences that do exist derive in large part from the expected daily ridership estimates.

As stated above and discussed in Chapter 2 and Section 3.2, *Air Quality*, daily streetcar ridership is expected to be higher under the alternatives that include the Grand Avenue Extension: Alternative 2, 7th Street with Grand Avenue Extension; and Alternative 4, 9th Street with Grand Avenue Extension. Higher ridership results in a greater reduction in auto vehicle miles traveled, and reduced greenhouse gas emissions from reduced vehicle travel. Given that Alternatives 2 and 4 would reduce both greenhouse gas emissions more than Alternatives 3 and 5, they would be considered environmentally superior alternatives compared to the No Build Alternative and Alternatives 3 and 5.

Additionally, as discussed in Section 3.10, *Traffic and Transportation*, Alternative 2 would operate along 7th Street, which would have a designated bike lane, while Alternative 4 would operate along 9th Street, which would not have a designated bike lane. Given the potential conflict between bicycles and the streetcar flange gaps, the designated bike lane on 7th Street may allow for slightly lesser impacts related to bicycle safety. Thus, because Alternative 2 would have a slightly lesser bicycle safety impact, it would be considered environmentally superi,or to Alternative 4.

Alternatives 2 and 4 would result in significant impacts at three intersections, Alternative 3 would have a significant impact at only one intersection and Alternative 5 would have no significant intersection impacts.

Taking into account the described differences in impacts related to air quality, greenhouse gases, intersection capacity and bicycle safety, and estimated ridership, Alternative 2 is identified as the environmentally superior alternative, as required by State CEQA Guidelines Section 15126.

All four MSF sites would have similar impacts for all environmental resource areas. The MSF site at Broadway and 2nd Street would involve the displacement of a wedding chapel business, but adequate compensation would be provided. On balance, all four potential MSF sites would be considered environmentally comparable.

None of the TPSS installations would have significant impacts and they would be common to all Build Alternatives; therefore, no finding of environmental superiority would be assigned to these elements of the Project.

This page was intentionally left blank.

Chapter 5
Other Environmental Considerations

5.1 Impacts Found to Be Less than Significant (CEQA)

In addition to the environmental impact categories analyzed in detail in Chapter 3 of this Draft EIR, the City has determined that the proposed Project would not result in potentially significant impacts for the environmental impact topics discussed below. Section 15128 of the State CEQA Guidelines states:

> An EIR shall contain a statement briefly indicating the reasons that various possible significant effects of the project were determined not to be significant and were, therefore, not discussed in detail in the EIR.

Based on the Initial Study prepared for the Project (see Appendix A), there is no evidence that the Project would result in significant environmental effects in the areas discussed below, and further environmental review of these issues is therefore not required.

5.1.1 Agriculture and Forestry Resources

5.1.1.1 Farmland Conversion

No impact. The Project would be located in downtown Los Angeles, primarily within existing transportation rights-of-way. The California Department of Conservation, Division of Land Protection, lists Prime Farmland, Unique Farmland, and Farmland of Statewide Importance under the general category of "Important Farmland." The 2010 Los Angeles County Important Farmland map maintained by the Division of Land Protection indicates that the project location does not contain any lands included in the Important Farmland category (California Department of Conservation 2010); therefore, no farmland conversion would occur.

All of the related projects identified in Section 2.10 of this EIR are also located within the same general vicinity as the Project. Therefore, the related projects would also not result in farmland conversion. Because no farmland conversion would occur under either the Project or the related projects, there would be no cumulative impact pertaining to farmland conversion.

5.1.1.2 Agricultural Zoning and Williamson Act Contract

No impact. Because there is no farmland within downtown Los Angeles, no portion of the project location is subject to a Williamson Act contract or usable as agricultural land (California Department of Conservation 2013). The Project would not involve the conversion of agricultural land to another use. Therefore, no impact on farmland or agricultural resources subject to either agricultural zoning or Williamson Act regulation would occur.

None of the related projects listed in Section 2.10 would involve land subject to Williamson Act regulation. Therefore, no cumulative impact would occur regarding Williamson Act governed land.

5.1.1.3 Timberland

No impact. According to the *Conservation Element* of the *City of Los Angeles General Plan*, the closest substantial conifer and big-tree forests in the region are located outside the City's boundaries within the Angeles National Forest, approximately 17 miles north of the project location (City of Los Angeles 2001). Therefore, no impact on forests, timberlands, or timberland-zoned areas would occur.

None of the related projects listed in Section 2.10 would involve forests, timberlands, or timberland-zoned areas. Therefore, no cumulative impact would occur regarding forests, timberlands, or timberland-zoned areas.

5.1.1.4 Loss or Conversion of Forestland

No impact. As discussed in Section 5.1.1.3, the closest forestland in the area is located approximately 17 miles north of the project location. Therefore, the Project would not result in the loss or conversion of forestland to non-forest uses, and no impacts would occur.

None of the related projects listed in Section 2.10 would result in the conversion of forestland to non-forest uses. Therefore, no cumulative impact would occur regarding forestland conversion.

5.1.1.5 Other Conversion of Agricultural Uses

No impact. As discussed above, the Project is not located in the vicinity of agricultural resources. Therefore, it would not result in the conversion of agricultural uses to non-agricultural uses. No impact would occur.

None of the related projects listed in Section 2.10 would result in the conversion of agricultural uses to non-agricultural uses. Therefore, no cumulative impact would occur regarding agricultural land conversion.

5.1.2 Air Quality

5.1.2.1 Odors

Less-than-significant impact. According to the South Coast Air Quality Management District's (SCAQMD) *CEQA Air Quality Analysis Guidance Handbook* (SCAQMD 1993), land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, and fiberglass molding facilities. The proposed Project does not include any of the uses identified above by SCAQMD as being associated with odors and is therefore not anticipated to produce objectionable odors. While the daily operation of the Maintenance and Storage Facility (MSF) would involve vehicle washing and other light maintenance activity, the materials and chemicals that would be used, such as lubricants and cleaning solvents, would conform to state and local requirements for formulation and proper handling. As a result, the use of these materials would not be expected to produce objectionable odors that could adversely affect offsite uses.

Odors resulting from construction of the proposed Project, should they be noticeable, are not likely to affect a substantial number of people because areas of construction would be limited in location and size. Potential odor-emitting elements used during construction activities could include asphalt and architectural coatings and solvents. SCAQMD Rules 1108 and 1113 would govern and limit emissions of reactive organic compounds from asphalt and architectural coatings and solvents, respectively. Given that compliance with SCAQMD rules would be mandatory and monitored, no construction activities or materials are proposed that would create a significant level of objectionable odors. Therefore, potential impacts during short-term construction would be less than significant.

It is possible that odors from as yet uncharacterized contaminated soil could be encountered during construction activities. However, Section 3.7, *Hazards and Hazardous Materials*, addresses this potential and includes mitigation measures to address the safe handling and disposal of soils with odor, should they be encountered.

None of the related projects listed in Section 2.10 would involve land uses typically associated with odor creation (i.e., agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting areas, refineries, landfills, dairies, or fiberglass molding facilities). Therefore, the Project would not contribute to significant odor impacts.

5.1.3 Biological Resources

5.1.3.1 Candidate, Sensitive, or Special-Status Species

Less-than-significant impact. According to the California Department of Fish and Wildlife's California Natural Diversity Database, there have been an estimated 19 occurrences of special-status species in the Los Angeles quadrangle in which the Project would be located (see Appendix A, Initial Study). The areas adjacent to the project alignment are nearly completely covered with concrete and asphalt; some areas are landscaped with ornamental trees, shrubs, and ground cover. According to local and regional plans, policies, and regulations, the California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service, an environment of this type is not considered to be suitable habitat for any of the identified candidate, sensitive, or special-status species. In addition, there are no known locally designated natural communities in the Project vicinity.

Migratory birds, including four of the special-status species known to occur in the Los Angeles quadrangle, are protected under the *Migratory Bird Treaty Act* (MBTA), which provides legal protection for migratory birds, their occupied nests, and their eggs. Activities that would result in a temporary or permanent take of a migratory bird, nest, or egg would constitute a violation of the MBTA. Construction of the Project would be conducted in a manner so as to comply with the MBTA. For street trees that would be removed as part of the Project, the following standard Los Angeles Bureau of Engineering practice would be implemented as part of project construction:

> **MBTA Regulatory Compliance Measure: Nesting Birds.** Within seven days prior to any construction activities during the general nesting season for birds (January to September for raptors; March to August for all other bird species), a survey of nesting birds will be conducted by a qualified biologist. Any active bird nests observed during the survey will be mapped on construction plans. Restrictions on construction activities will be implemented in the vicinity of the nest until it is no longer determined to be active. Typically, a 300- to 500-foot buffer zone will be designated around an active nest to allow construction to proceed elsewhere, while at the same time minimizing disturbance to the active nest. Once the nest is determined to no longer be active and the young have dispersed, construction would be allowed to proceed within the buffer zone. The DPW BOE, through the construction contractor bid specifications, shall be the responsible party. Enforcement shall be achieved through the DPW Contract Administration Bureau Construction Inspector.

With incorporation of the above regulatory compliance measure, there would be a less-than-significant impact on candidate, sensitive, or special-status species.

All of the related projects listed in Section 2.10 would be developed in the same general vicinity as the Project. The areas subject to implementation of the related projects, similar to the Project, are nearly completely covered with a combination of concrete, asphalt, ornamental trees, shrubs, and ground cover. These areas are not considered to be suitable habitat for any of the identified candidate, sensitive, or special-status species. Should construction of any of the related projects require removal of ornamental street trees, such construction would be managed independently so as to comply with the MBTA. Accordingly, the Project, when considered in conjunction with other past, present or reasonably foreseeable future projects, would not have an individual cumulative impact, nor would it result in a cumulatively considerable contribution to a significant cumulative impact.

5.1.3.2 Riparian Habitat or Other Sensitive Natural Community

No impact. As stated in Section 5.1.3.1, the Project would be located in an urbanized area of the City that is covered primarily with structures or concrete and asphalt paving; it does not have riparian or other habitats that would be suitable for sensitive natural communities. Implementation of the proposed Project would have no impact on riparian habitats or other sensitive natural communities.

All of the related projects listed in Section 2.10 would be developed in the same general vicinity as the Project; therefore, none of the related projects are located on sites that contain riparian or other habitats that would be suitable for sensitive natural communities. Implementation of the proposed Project and the related projects would, therefore, have no cumulative impact on riparian habitats or other sensitive natural communities.

5.1.3.3 Federally Protected Wetlands

No impact. According to the U.S. Fish and Wildlife Service's National Wetlands Inventory, there are no federally protected wetlands in the vicinity of the Project (U.S. Fish and Wildlife Service 2014). Therefore, the Project would not result in the direct removal, filling, or hydrological interruption of a federally protected wetland, as defined by Section 404 of the *Clean Water Act*.

Because there are no federally protected wetlands in the vicinity of the Project or the related projects, there would be no cumulative wetland impacts.

5.1.3.4 Native Resident or Migratory Fish or Wildlife Species Movement, Migration, or Nursery Sites

No impact. Because downtown Los Angeles is highly urbanized, there are no wildlife corridors or native wildlife nursery sites in the Project vicinity. Construction and operation of the proposed Project would therefore not affect the movement of any native resident or migratory fish species, interfere with wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. No impact would occur.

Because there are no wildlife corridors or native wildlife nursery sites in the vicinity of the Project or the related projects, there would be no cumulative impacts regarding native resident, migratory fish, wildlife species movements, migrations, or nursery sites.

5.1.3.5 Local Policies or Ordinances Related to Biological Resources

No impact. Implementation of the Project would not conflict with any local policies or ordinances related to biological resources. No trees under the purview of the *City of Los Angeles Native Tree Protection Ordinance* would be removed or otherwise affected. Ornamental street trees that may need to be removed for purposes of the Project would be replaced in accordance with the City's ordinance. Given the urban character of the area, no other local biological resource policies are also pertinent in the project vicinity. Therefore, no impact related to local biological resource policies or ordinances would occur.

The related projects listed in Section 2.10 would be developed in the same general vicinity as the Project and, therefore, it is highly unlikely that trees subject to protection under the *Native Tree Protection Ordinance* would be affected by the related projects. Should this prove not to be the case, each individual related project would be required to follow the requirements of the Ordinance. Because the Project would not affect protected trees, it would not result in a cumulatively considerable contribution to a significant cumulative impact regarding local policies or ordinances related to biological resources.

5.1.3.6 Habitat Conservation Plans, Natural Community Conservation Plans, or Other Plans

No impact. There is no habitat conservation plan, natural community conservation plan, or other conservation plan in place governing the area potentially affected by the proposed Project. Therefore, the Project would not conflict with the provisions of an adopted habitat conservation plan, natural conservation community plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

Because there are no habitat conservation plans, natural community conservation plans, or other such plans governing the project area, including the area in which the related projects would be developed, there would be no cumulative impact affecting such plans.

5.1.4 Hazards

5.1.4.1 Airport and Airstrip Hazards

No impact. The proposed Project would be located more than 10 miles northeast of Los Angeles International Airport and more than 10 miles southeast of Bob Hope Airport. The Project is also not located within an airport land use plan area (Los Angeles County Airport Land Use Commission 2012). In addition, no private airstrips operate within the vicinity of the project location. Therefore, the Project would not introduce elements of a height or nature that would be capable of disrupting air traffic patterns, and implementation of the proposed Project would not result in a potential safety hazard related to air traffic for people residing or working in the downtown area. No impact would occur.

The related projects would be developed in the same general vicinity as the Project; therefore, none of the related projects would have impacts affecting airports, nor would they result in airstrip hazards. Because neither the Project nor the related projects would have such impacts, there would be no cumulative impacts affecting airports or airstrips.

5.1.4.2 Wildland Fires

No impact. The Project would be located in downtown Los Angeles, a heavily urbanized area that is more than 4 miles southeast of the nearest wildland fire hazard area of Griffith Park, as designated in Exhibit D of the City of Los Angeles Safety Element (City of Los Angeles 1996). The Project would therefore not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

Because there are no areas subject to wildland fires in the vicinity of either the Project or the related projects, there would be no cumulative impacts related to wildland fires.

5.1.5 Hydrology and Water Quality

5.1.5.1 Water Quality Standards

Less-than-significant impact. Project construction activities would be required to meet the National Pollutant Discharge Elimination System requirements for stormwater quality. The contractor would also be required to implement best management practices (BMPs) for water quality and erosion control. In addition, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to any construction activity. Implementation of the BMPs in the Project's SWPPP and compliance with the City's discharge requirements would ensure that project construction would not violate any water quality standards or discharge requirements or otherwise substantially degrade water quality. Therefore, the Project's construction-related water quality impacts would be less than significant.

With respect to the operation of the proposed MSF, a Standard Urban Stormwater Mitigation Plan (SUSMP) would be implemented. The SUSMP would ensure that potential impacts associated with water quality, such as runoff resulting from vehicle cleaning and maintenance, would be less than significant because site-specific requirements would be imposed governing the handling and treatment of runoff from activities occurring within the MSF. Streetcar tracks would be maintained on a regular basis by the operator. With the above appropriate project design and compliance provisions in place and enforced, and with all applicable federal, state, and local regulations, code requirements, and permit provisions being adhered to, a less-than-significant impact would result.

Related projects may or may not result in potential impacts affecting water quality. However, each related project would adhere to requirements specified in their respective environmental clearance documents and underlying regulatory requirements. Because the Project would not have a significant impact and because the related projects would be required to adhere to their respective mitigation requirements, the Project would not result in a cumulatively considerable contribution to a significant cumulative impact affecting water quality.

5.1.5.2 Groundwater Supplies

Less-than-significant impact. Groundwater accounts for approximately 13 percent of the water supply for the City of Los Angeles but has accounted for as much as 30 percent of the total water supply in drought years (LADWP 2013). The Project would use water during construction and operation, and it is possible that such use could come, either directly or indirectly, from groundwater sources. Delivery of water to the site and selection of the appropriate source would be controlled by the Los Angeles Department of Water and Power (LADWP). During the construction period, water would be used for controlling fugitive dust emissions and mixing concrete. Project operations would require water for cleaning the streetcar vehicles and water would also be required for the restroom facilities within the MSF. Neither construction nor operation of the Project is expected to be water intensive, and the Project is expected to be well within the available capacity for downtown Los Angeles; such use would not substantially deplete groundwater supplies.

The Project would be located in an area that is paved and does not allow for in-place percolation of stormwater. Implementation of the Project would temporarily remove paved surfaces within the project limits. These areas would be repaved prior to operation; therefore, a measurable change in the potential for groundwater recharge would not result. Impacts related to groundwater supplies would be less than significant.

5.1.5.3 Drainage Pattern and Siltation

Less-than-significant impact. The Project may require the relocation or reconfiguration of some storm drains either within street rights-of-way or internal to the selected MSF site. Alterations to the storm drainage system would not change the overall drainage patterns of the area because drainage would be restored to flow via the modified storm drains in the same manner as before the modification was made. No courses of streams or rivers would be altered as a result of the Project because there are no streams or rivers present within the Project area. During the construction period, siltation and erosion related to the removal of paved surfaces and ground disturbance could occur. With preparation and implementation of the required SWPPP, however, the potential release of silt and other sediment as a result of erosion at the MSF, traction power substation (TPSS) sites, and along the alignment would be appropriately controlled in accordance with regulatory requirements, and impacts would therefore be less than significant.

Development of the related projects would individually be subject to site-specific design requirements related to the handling of storm drainage via the municipal storm drain system. Appropriate changes or modifications to the storm drain system would be made, just as they would be for the Project. Accordingly, less-than-significant impacts associated with the related projects would be expected and the Project would, therefore, not result in a cumulatively considerable contribution to a significant cumulative impact affecting drainage.

5.1.5.4 Drainage Capacity

Less-than-significant impact. During construction, water may be used to suppress fugitive dust emissions but not in quantities that would be capable of exceeding the capacity of the stormwater drainage system. During project operation, water may be used to clean the exterior of the MSF on an infrequent basis. Given that the size of the MSF would be 12,000 to 18,000 square feet and no larger than three stories tall, the quantity of water needed to clean the structure would be able to be handled within the capacity of the drainage system. All other water uses at the MSF would be handled by the wastewater system, which is separate from the system for runoff collected from public rights-of-way. The project MSF will follow the City of Los Angeles Low Impact Development requirements, which specify, for any project adding more than 500 square feet of building space, that rainwater resulting from a storm event of at least 0.75 inch be captured, infiltrated, and used on site. This will be enforced via review of design plans for the MSF. The Project would not substantially increase the amount of runoff because the impervious surface area of any of the candidate MSF sites would not be increased and may be reduced, due to the construction of the MSF building on what is currently an open parking lot. Onsite runoff would be managed in accordance with City of Los Angeles requirements. A less-than-significant impact would occur.

The related projects would all be developed to follow City of Los Angeles requirements for managing runoff, adhering to the Low Impact Development requirements, and ensuring that adequate drainage capacity is maintained. It is therefore reasonable to assume that the Project, in combination with the related projects, would not have a significant cumulative impact.

5.1.5.5 Polluted Runoff

No impact. As discussed in Section 5.1.5.1, construction-period runoff would be controlled through the implementation of erosion control BMPs and the SWPPP. These efforts would effectively prevent runoff at the MSF, TPSS sites, and along the alignment from releasing pollutants. Project operation would follow prescribed procedures for onsite pollutant control and treatment and would not create substantial additional sources of runoff. This would be ensured through implementation of a SUSMP. No impacts would occur.

Development of the related projects would individually be subject to site-specific design requirements related to the handling of polluted runoff. Accordingly, less-than-significant impacts associated with the related projects would be expected and the Project would, therefore, not result in a cumulatively considerable contribution to a significant cumulative impact due to polluted runoff.

5.1.5.6 Water Quality Degradation

Less-than-significant impact. Beyond the potential for runoff, which would be controlled through implementation of the provisions of the SWPPP and SUSMP, no new potential sources of pollutants that could substantially degrade water quality are associated with the Project. Impacts would be less than significant.

Because development of the Project and the related projects would individually be subject to site-specific design requirements that are intended to minimize or avoid adverse impacts on water quality, significant cumulative water quality impacts are not anticipated.

5.1.5.7 100-Year Flood Hazards to Housing

No impact. The proposed Project does not include housing. Therefore, there would be no flood-related risks to housing, and no impacts would occur. One or more of the related project would involve housing. Because the Project would not involve housing, it would not have a cumulatively considerable contribution to a significant cumulative impact affecting housing.

5.1.5.8 100-Year Flood Hazards from Structures

No impact. As shown in Exhibit F of the *Safety Element* of the *City of Los Angeles General Plan*, the proposed Project would not be located within a delineated 100-year floodplain. Therefore, structures constructed as part of the Project would not have the potential to redirect flows within a flood zone from a 100-year storm event (City of Los Angeles 1996). No impact would occur.

All of the related projects listed in Section 2.10 would be developed in the same general vicinity as the Project; therefore, none of the related projects would redirect or increase flows from a 100-year flood within a designated flood zone. No significant cumulative impacts would occur.

5.1.5.9 Levee and Dam Failure

Less-than-significant impact. Although the southeastern portion of the project alignment is located within or adjacent to a potential inundation area according to the City's Safety Element (City of Los Angeles 1996 [Exhibit G]), all project components would be located outside of 100- and 500-year floodplains, as documented in the Federal Emergency Management Agency's Flood Insurance Rate Map (Panels 06037C1620F and 06037C1636F) and Exhibit F of the City's Safety Element. The Project would not alter the permanent drainage patterns of the study area, nor would it result in a change in topography or other physical change having an effect on drainage. The Project would not change the project area's vulnerability to levee and dam failure, and therefore would not expose people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. The impact would be less than significant.

All of the related projects listed in Section 2.10 would be developed in the same general vicinity as the Project. Related projects located in the southeastern portion of the downtown area would need to be evaluated for their proximity to areas of 100- and 500-year floodplains. Design measures would likely be sufficient to address potential impacts, but the resolution of this issue would occur at the conclusion of individual related project environmental clearance processes. The Project would have a less-than-significant impact and it would not alter permanent drainage patterns of the study area. Therefore, the Project would not result in a cumulatively considerable contribution to a significant cumulative impact from levee or dam failures.

5.1.5.10 Seiche, Tsunami, or Mudflow

No impact. As stated in Section 5.1.5.9, the southeastern portion of the project alignment is located within or adjacent to a potential inundation area (City of Los Angeles 1996 [Exhibit G]). However, the Project would not alter drainage patterns or the existing flood control system, and would be built in an urbanized area not subject to potential mudflow. Therefore, the Project would not increase the risk of inundation by seiche or mudflow. The Project would not be located in a Tsunami Hazard Area (City of Los Angeles 1996 [Exhibit G]). No impacts related to inundation by seiche, tsunami, or mudflow would occur.

All of the related projects listed in Section 2.10 would be developed in the same general vicinity as the Project and, therefore, they also would not increase the risk of inundation by seiche or mudflow, or be located in a Tsunami Hazard Area. No cumulative impact would occur.

5.1.6 Land Use and Planning

5.1.6.1 Habitat Conservation Plans and Natural Community Conservation Plans

No impact. As discussed in Section 5.1.3.6, there are no habitat, natural community, or other conservation plans in place having jurisdiction over the vicinity of the proposed Project. Therefore, the Project would not conflict with the provisions of an adopted habitat conservation plan, natural conservation community plan, or other approved local, regional, or state habitat conservation plan. No impact would occur.

Because there are no habitat or natural community plans governing the project study area, no cumulative impact would result from the Project in combination with the related projects.

5.1.7 Mineral Resources

5.1.7.1 Known Mineral Resources

No impact. No known mineral resources underlie the project alignment, TPSS sites, or potential MSF locations. The project alignment is not within a known source area for aggregate or other mineral resources (City of Los Angeles 2001 [Figure GS-1]). The Project, however, is located immediately north of the LA Downtown Oil Field, as depicted in the City of Los Angeles Safety Element (City of Los Angeles 1996 [Exhibit E). Although petroleum resources are present within the project vicinity, the area is urbanized and there are no existing oil extraction operations located nearby to the project alignment, TPSS sites, or MSF locations. Therefore, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, and no impact would occur.

The related projects are all located within the same general vicinity as the Project and they would be presumed to also not have any effect on mineral resources. However, each of these projects would have to make an independent finding and, therefore, the result cannot be known at present. The Project, because it would not have an effect on mineral resources, would not contribute to any significant cumulative impacts that might occur due to the related projects.

5.1.7.2 Locally Important Mineral Resource Recovery Sites

No impact. The project location is not delineated as a locally important mineral resource recovery site in any City plans (City of Los Angeles 2001 [Figure GS-1]). Therefore, implementation of the Project would not result in the loss of availability of a locally important mineral resource recovery site. The Project would have no impact on mineral resources.

Because the Project and also the related projects are not located in an area delineated as a locally important mineral resource recovery site, there would not be a cumulative impact.

5.1.8 Noise

5.1.8.1 Public Airport Noise

No impact. The Project would not be located within an airport land use plan or within 2 miles of a public airport (Los Angeles County Airport Land Use Commission 2012). Therefore, the Project would not expose people residing in the project vicinity to excessive airport-related noise levels. No impact would occur.

Because the Project and also the related projects are not located within a land use plan area or within 2 miles of a public airport, there would not be a cumulative impact related to public airport noise.

5.1.8.2 Private Airstrip Noise

No impact. There are no private airstrips within the project vicinity. Therefore, the Project would not expose people residing in the project vicinity to excessive airstrip-related noise levels. No impact would occur.

Because the Project and also the related projects are not located in the vicinity of a private airstrip, there would not be a cumulative impact related to private airstrip noise.

5.1.9 Population and Housing

5.1.9.1 Population Growth

Less-than-significant impact. Population distribution and density are managed by the City's land use and zoning designations and building codes. The Project would involve construction and operation of a streetcar service. The Project would not include the construction of homes or businesses; therefore, the Project would not directly increase population. The Project would not involve changing the City's land use or zoning designations to a more intense land use and therefore would not directly contribute to substantial population growth. The Project would employ approximately 20 full-time employees to operate the streetcar system and conduct maintenance activities. It is not anticipated that any of these employees would be required to relocate to downtown; most could be hired from the existing labor force either already residing in downtown or in its general commuter vicinity. Accordingly, a less-than-significant increase in population, if any, would be directly attributable to the Project.

However, one objective of the Project is to encourage revitalization of the downtown area through pedestrian-friendly improvements; therefore, the Project could indirectly contribute to commercial development and/or residential population growth (see Section 5.2, *Growth-Inducing Impacts*). This indirect effect, however, is expected to be less than significant, as the presence of the Project would be one of a multitude of factors in commercial and residential development decisions (with general economic trends being among the most important). Furthermore, growth in the residential population is planned for in the City's Housing Element, which guides citywide residential development, and has identified 443 sites in the Central City area with the capacity to support just under 18,000 units (City of Los Angeles 2013, Table 3.1). Because it is not possible to specifically attribute the amount of potential induced growth occurring as a result of the Project, the indirect growth impacts would be speculative and therefore cannot be evaluated (see State CEQA Guidelines Section 15145).

The Project would only have a potential indirect impact on commercial development and/or residential population growth, the degree of which cannot be determined at the present time and therefore would be speculative. Therefore, the Project would not result in a cumulatively considerable contribution to a significant cumulative population growth impact.

5.1.9.2 Housing Displacement

No impact. No housing would be displaced during either construction or operation of the proposed Project. Therefore, no impact would occur.

The Project, because it would not displace any housing, would not contribute to any significant cumulative housing displacement impacts that might occur due to the related projects.

5.1.9.3 Population Displacement

Less-than-significant impact. As discussed in Section 5.1.9.2, the proposed Project would not displace housing. The four MSF sites currently being evaluated are all located on currently operating surface parking lots. Selection of one of these sites for an MSF would displace the current parking business from that location. All property owners would be compensated for the purchase of property and also for relocation or compensation for loss of the affected business(es), should that occur, in conformance with the *Uniform Relocation and Real Properties Assistance Act*, *California*

Relocation Assistance Law, and Division 7, Chapter 3 of the *City of Los Angeles Administrative Code*. A less-than-significant impact would occur.

The Project, because it would not displace any housing, would not contribute to any significant cumulative population displacement impacts that might occur due to the related projects.

5.1.10 Public Services and Recreation

5.1.10.1 Police Service

Less-than-significant impact. The Los Angeles Police Department (LAPD) has primary jurisdiction in the downtown Los Angeles area. However, the Los Angeles Sheriff's Department (LASD) Transit Services Bureau would provide contract police services for the Project. At present, the Transit Services Bureau provides transit-related security for Metro and LADOT's DASH and Commuter Express services; such services would be expanded to include the streetcar system.

The Project would be located in an area that has a high degree of police presence because of its proximity to City Hall and LAPD headquarters. Given that the Project would have a dedicated security service, provided by the LASD Transit Services Bureau, operation of the Project would not increase the burden placed on the LAPD. Although the expansion of transit service presented by the Project would require some redistribution of LASD resources, the Transit Services Bureau has adequate resources for providing police protection on the new streetcar system. Approximately two additional sheriff's deputies during daytime shifts and two additional deputies during nighttime shifts would be required to serve the Project. These deputies could be drawn from LASD's existing pool of deputies (Sgt. Thomas pers. comm.). LAPD officers would continue to police the area, but would not have the additional responsibility of monitoring the safety and security of the streetcar operation. No new police facilities (either LAPD or LASD) would be required to maintain acceptable police services, as the Project would not directly result in population growth in the project area. Therefore, the impact of the Project with respect to police services would be less than significant.

Although the related projects could directly result in increases in residential and employee populations in the project area that would cumulatively increase the demand for LAPD police protection services, the Project would not increase the demand for LAPD services for the reasons described above. Therefore, it would not contribute to any significant cumulative police protection impacts.

5.1.10.2 Fire Service

Less-than-significant impact. The Project would be served by Los Angeles Fire Department (LAFD) Division 1, Battalion 1, at Station No. 3, located at 108 North Fremont Avenue, approximately 0.4 mile west of the project alignment.

The Project does not include new housing and would not result in a substantial increase in the employee population in the project area. Additionally, the MSF would be constructed in accordance with all applicable fire codes set forth by the State Fire Marshall and LAFD. The design of the streetcar overhead contact system (OCS) poles and wires would adhere to all applicable fire and building code requirements. The Project would not be considered a potential fire hazard because the streetcar vehicles would be electrically powered and would not use flammable chemicals or materials. The capacity of LAFD to serve the area with its existing level of fire protection services would not be substantially affected because no habitable structures, other than the MSF, would be added to the study area.

The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Also, construction and operation of the Project would not create hazards beyond typical hazards associated with industrial buildings similar to the MSF or other typical transit facilities.

Therefore, the Project would not substantially increase the demand for fire protections services and result in a need for new or altered fire protection facilities. Indirectly, the Project could contribute to residential and/or commercial development in the area, but estimating the amount of potential growth attributable to the Project would be speculative.

The related projects would result in new buildings and would increase the residential and employee populations in the project area, which would increase the demand for fire protection services. However, it is not known whether that increased demand would require new or expanded facilities, and whether the construction of those facilities would result in significant impacts on the environment. Therefore, the Project would not meaningfully contribute to a significant cumulative fire service impact.

5.1.10.3 Schools

Less-than-significant impact. Public school services in the study area are provided by the Los Angeles Unified School District, which currently has more than 640,000 students enrolled in kindergarten through 12th grade. The Project would not include new housing and, therefore, would not directly increase the demand for schools in the area. The Project would directly result in a minimal increase in the number of employees in the downtown area, which would not result in a significant increase in student enrollment at project area schools. Indirectly, the Project could contribute to residential and/or commercial development in the area, but estimating the amount of potential growth that would be attributable to the Project would be speculative. Existing and planned future school facilities would be adequate to serve the anticipated increase in future population. The impact would be less-than-significant.

The related projects would directly and indirectly increase student enrollment levels. However, it is not possible to determine, for the purposes of this EIR, the extent of potential enrollment increases at individual schools and within affected school districts. For that reason and because, pursuant to Government Code Section 65995, related residential and commercial development projects would be required to pay the requisite school impact fees and under the provisions of Senate Bill 50, those fees would be deemed to be full mitigation of a project's impacts on school facilities, the Project would not contribute to a significant cumulative impact on schools.

5.1.10.4 Parks and Recreational Facilities

Less-than-significant impact. The Project would not increase the demand for parks in the area because it would not include new residential or business development. The Project would not necessitate the construction of new parks or recreational facilities because it would not affect any park property. A less-than-significant impact would result from operation of the Project because the addition of a small number of new employees would not require an expansion of park facilities.

The increases in residential and employee populations due to the related projects could increase the demand for parks and recreational facilities. However, it is not known whether that increased demand would require the construction of new parks that would have a significant impact on the environment. For that reason and because the Project would not result in a meaningful increase in demand for park services, the Project would not contribute to a significant cumulative impact on parks and recreational facilities.

5.1.11 Traffic and Transportation

5.1.11.1 Air Traffic Patterns

No impact. Bob Hope Airport and Los Angeles International Airport are both located approximately 10–12 miles from the Project. The proposed Project would not include any components of a height or nature that would affect air traffic. The proposed Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would create substantial safety risks. No impact would occur.

The related projects would be developed in the same general vicinity as the Project; therefore, none of the related projects would have impacts affecting air traffic patterns. Because neither the Project nor the related projects would have such impacts, there would be no cumulative impacts affecting air traffic patterns.

5.1.12 Utilities and Service Systems

5.1.12.1 Wastewater Treatment Requirements

No impact. Wastewater would be generated as part of operation of the MSF, resulting from vehicle cleaning activities and the use of bathroom facilities. Neither of these activities would be expected to generate wastewater that would exceed wastewater treatment requirements of the Regional Water Quality Control Board. No impacts would occur and, consequently, the Project would not contribute to cumulative impacts on wastewater treatment requirements.

5.1.12.2 Water and Wastewater Treatment Facilities

No impact. The MSF is the only component of the proposed Project that would require water and wastewater service for bathroom facilities and cleaning activities. All wastewater would be controlled and managed on site before being conveyed to the sewer system. Each possible location for the MSF is within a short distance of a direct connection to existing water and wastewater services.

The City of Los Angeles Bureau of Sanitation operates four treatment and water reclamation plants: Hyperion Treatment Plant, Donald Tillman Water Reclamation Plant, the Terminal Island Water Reclamation Plant, and the Los Angeles Glendale Water Reclamation Plant.

The wastewater treatment system of the City of Los Angeles is divided into two major service areas: the Hyperion Service Area and the Terminal Island Service Area. The project site is located within the Hyperion Service Area. Sewage flow from the MSF would be conveyed to the Hyperion Treatment Plant. The Hyperion Treatment Plant currently has a daily flow of 362 million gallons per day and has a capacity of 450 million gallons per day (City of Los Angeles Bureau of Sanitation 2014). It is anticipated that the MSF would generate a relatively small amount of wastewater from bathroom facilities and washing equipment. It is also anticipated that the Hyperion Treatment Plant would be able to accommodate the wastewater generated by the MSF.

With the exception of the installation of connections to the new MSF structure, no new extensions of water and wastewater treatment facilities would be required to serve the Project. No impacts related to the expansion or construction of new water or wastewater facilities as a result of project implementation would occur.

The related projects would increase the amount of wastewater generated in the project area, which would be conveyed by existing public sewer lines to the City's Hyperion Treatment Plant. Other development outside the project area but within the City's Hyperion Treatment Plant service area could also increase wastewater flows to the Hyperion Treatment Plant. If new sewer lines or expanded treatment plant facilities beyond that previously planned and approved are required to accommodate future growth and development within the Hyperion Service Area, the construction of those new facilities and sewer lines could result in impacts on the environment. However, it would speculative to assume that those impacts would be significant. For that reason and because the Project would result in a negligible increase in wastewater flows, the Project would not contribute to a significant wastewater impact.

5.1.12.3 Stormwater Drainage Facilities

Less-than-significant impact. As discussed in Chapter 2, the Project may require the relocation or modification of some storm drains. However, the Project would not result in an increase in stormwater runoff from the project sites and the Project would also not change current drainage patterns. Impacts would be less than significant.

Because the Project would not result in increased stormwater runoff, would not alter drainage patterns, and would not permanently change storm drain capacities, it would not contribute to any cumulative stormwater drainage facilities impacts.

5.1.12.4 Water Supplies

Less-than-significant impact. New or expanded water supplies would not be required because neither construction nor operation of the Project would include water-intensive activities. Construction of the Project would require minimal amounts of water for fugitive dust control, which would most likely be provided by trucks at the construction site. Project operation would require water for streetcar vehicle cleaning and bathroom facility use. This would not necessitate new water deliveries to the region or increased reliance on groundwater resources. Increases in water use would be minimal based on the 12,000- to 18,000-square-foot size of the building and the small number of employees at the MSF at any given time, and no new or expanded water entitlements would occur.

Development of the related projects in the project area would result in the consumption of water. Other future development within the LADWP service area would also consume water. The extent to which the related projects and future growth and development in the LADWP service area would result in an increased demand for water will depend on the amount of development, when and where that development occurs, and the effectiveness of future water conservation measures. If new facilities beyond that currently planned and approved are required to meet increased water demand, it is possible that the construction and operation of those facilities could result in significant impacts on the environment. However, because the extent and location of possible new facilities is not known, it would be speculative to determine the significance of impacts due to those facilities. For that reason, the Project would not contribute to a significant water supply impact.

5.1.12.5 Wastewater Treatment Capacity

Less-than-significant impact. See the discussion above under *Water and Wastewater Treatment Facilities*.

5.1.12.6 Landfills

Less-than-significant impact. Construction of the Project would require the removal of concrete, asphalt, and soil to accommodate utility relocation, track-laying activities, and the MSF. Using a conservative estimate, the most intense construction work would generate an estimated 130 tons of solid waste over a 7-day workweek. Given that City-certified construction and demolition waste processors recycle at least 70 percent of their loads, the amount of solid waste that would reach the landfill would be much smaller than what would initially leave the construction site (City of Los Angeles Bureau of Sanitation 2012).

Operational solid waste generated by the Project is expected to be minimal, resulting from refuse collected at stops and on board vehicles. The amount of operational solid waste collected would have a negligible effect on landfill capacity. Therefore, neither construction nor operation would exceed permitted capacities at existing landfills. Impacts would be less than significant.

The related projects are all located within the same general vicinity as the Project and would generate solid waste that would be recycled or disposed of at the landfills that serve the project area. Other future development in the areas served by those landfills would also generate solid waste for disposal. Cumulative impacts could occur if expansion or construction of new landfill and solid waste facilities beyond those previously planned and approved would be required. However, it would be speculative to determine the significance of potential impacts. Therefore, the Project would not contribute to significant cumulative solid waste impacts.

5.1.12.7 Compliance with Solid Waste Statutes and Regulations

No impact. The Project would be designed, constructed, and operated in accordance with all applicable laws, regulations, ordinances, and City standards. Disposal of all solid waste generated by the proposed Project would comply with federal, state, and local statutes and regulations related to solid waste. No impact would result.

Because the Project would comply with all solid waste statutes and regulations, it would not contribute to any cumulative solid waste impacts.

5.2 Growth-Inducing Impacts

Pursuant to Section 15126.2 (d) of the State CEQA Guidelines, growth-inducing impacts of a proposed project are to be discussed in the EIR. Growth-inducing impacts are those effects of a project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. According to CEQA, increases in the population may burden existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Induced growth is defined as any growth that exceeds planned growth and results from new development that would not have otherwise taken place without implementation of a proposed project. The growth-inducing potential of a project would be considered significant if it results in growth or population concentration that exceeds the assumed levels included in applicable master plans, land use plans, or projections made by regional planning authorities. Under CEQA, it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Any potential environmental impacts of induced growth would be secondary or indirect effects of the Project. Secondary effects of induced growth due to the Project could include impacts such as increased demand on community or public services, increased traffic and noise, or degradation of air and water quality.

The Project would not include any housing or require a large number of employees and, therefore, it would not directly increase population or generate a substantial amount of long-term employment, nor would implementation of the Project change patterns of land use or development. However, the Project could contribute to growth in downtown Los Angeles; as an expressed objective, the Project is intended to support growth in downtown Los Angeles by revitalizing areas and providing an amenity that would attract new residents and visitors to downtown. Accordingly, by providing investment in an area that has been targeted for revitalization, the Project could indirectly contribute to growth through the provision of new infrastructure and a population-attracting amenity that would bring new development.

Given the planned related projects in the study area (see Section 2.9), growth is reasonably foreseeable. There would be some physical changes associated with the MSF and TPSS sites, but implementation of the Project would affect primarily the transportation rights-of-way. Physical changes within the rights-of-way would not make adjacent properties easier to develop.

Downtown Los Angeles is the urbanized core of the City and has been designated for employment, housing, civic institutions, and entertainment venues by the City's General Plan and Zoning Code. The 2013–2021 *Housing Element* of the *City of Los Angeles General Plan*, adopted in December 2013, identified 443 sites in the *Central City Community Plan* Area that are capable of supporting just under 18,000 housing units within the study area (City of Los Angeles 2013c, Table 3.1). Any employment growth occurring as a direct or indirect effect of the Project is expected to be absorbed by the commercial and office property markets. In addition, if vacancy rates were to decline, new construction through redevelopment could also accommodate this growth. The Project would be consistent with projected growth and would support general plan objectives and policies with respect to projected growth by:

- Providing for future expansion and improvement based on travel demand (Framework Element, Land Use Objective 3.3).
- Recognizing all modes of travel, including pedestrian, bicycle, transit, and vehicular modes—including goods movement—as integral components of the City's transportation system (Mobility Element, Policy 3.1).
- Providing all residents, workers, and visitors with affordable, efficient, convenient, and attractive transit services (Mobility Element, Policy 3.4).
- Supporting "first-mile, last-mile solutions" such as multi-modal transportation services, organizations, and activities in the areas around transit stations and major bus stops (transit

stops) to maximize multi-modal connectivity and access for transit riders (Mobility Element, Policy 3.5).

- Expanding transportation services to enhance neighborhood accessibility and accommodate growth (Framework Element, Land Use Objective 3.11).

The Project would provide a transit amenity that emphasizes short-distance daily trips, which would be an amenity serving reasonably foreseeable growth within downtown Los Angeles. The Project could contribute to residential and commercial development in the area, but, as noted in Section 5.1.9.1, the amount of potential growth attributable to the Project would be too speculative to determine.

5.3 Irreversible and Irretrievable Commitment of Resources

State CEQA Guidelines Section 15126.2(c) requires a discussion of any significant irreversible environmental impacts that would be caused by implementation of a proposed project. Generally, a project would result in significant irreversible environmental impacts if any of the following would occur:

- The project would involve a large commitment of nonrenewable resources.
- The project consumption of resources is not justified (i.e., the project involves wasteful energy use).
- The primary and secondary impacts would generally commit future generations to similar uses.
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project.

Construction of the Project would require the irreversible and irretrievable commitment of nonrenewable resources, such as energy (fossil fuels used for construction equipment) and construction materials (such as lumber, sand, gravel, metals, and water). Commitment of nonrenewable resources would also be required for fabrication and assembly of components used in the operation of the streetcar (such as rail track sections, OCS power poles, streetcar vehicles, TPSS units, MSF equipment and physical installations, and associated other equipment and fixtures). Additionally, labor and natural resources would be used to produce construction materials that are not generally retrievable. However, none of the materials are in short supply, and usage would not have an adverse effect on continued availability of these resources. Construction of the Project would also require substantial local and federal funds for construction and operation, which would not be retrievable.

Land used to construct the proposed MSF is considered an irreversible commitment during the period the land is used. The commitment of long-term land resources is consistent with the policies of the City of Los Angeles, which promote transit uses. After construction is completed, land used for construction staging would be available for other uses. The Project would not involve a large commitment of nonrenewable resources.

The consumption of nonrenewable resources related to the build alternatives would include water, petroleum products, and electricity. Fossil fuels would be used for transporting workers and materials during the construction period, and electricity and fuel would be used for streetcar vehicles and worker vehicles for maintenance and operation throughout the life of the Project. The amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of such resources because they would increase transit use, a goal outlined in the *City of Los Angeles General Plan*.

The project benefits would include additional mobility and transit options in downtown Los Angeles. The resources committed and consumed for implementation of any of the build alternatives would be considered appropriate because area residents, workers, and visitors would benefit from the additional transit option for short-distance trips. As discussed in Section 3.4, *Energy*, the Project is expected to displace some trips that are currently made by passenger cars, which would have the beneficial long-term effect of assisting to reduce regional vehicle miles traveled from what they otherwise would be.

The Project would construct and operate a streetcar route within downtown Los Angeles using existing street rights-of-way and one off-street location for an MSF site. Should it be determined in the future that this transportation service no longer is required, all components of the Project could be removed and the rights-of-way and off-street property can be returned to former or new uses. Therefore, the Project, either by its primary or secondary effects, would not commit future generations to similar uses.

During Project operation, cleaning and maintenance activities at the MSF would require the use of household-type cleaning materials, such as detergents and cleansers. Oil, solvents, and other materials would be used for streetcar vehicle maintenance in relatively small volumes and are not considered to be acutely hazardous materials according to the National Institute of Health. There is the potential for hazardous materials/waste spills to occur; however, the storage and disposal of hazardous materials/waste would be conducted in accordance with all federal and state requirements to prevent or manage hazards. In the unlikely event that a spill would occur, remediation would be conducted in accordance with prescribed regulations and procedures. Therefore, there would be a minimal risk of irreversible damage caused by an environmental accident associated with hazardous or acutely hazardous materials. The Project would not involve uses in which irreversible damage could result from any potential environmental accidents associated with the Project.

This page was intentionally left blank.

Chapter 6
Agencies and Organizations Consulted

This chapter lists the organizations and persons consulted during the preparation of the report. For a detailed list of the agencies, organizations, and individuals who commented only on the Notice of Preparation (NOP), refer to the Scoping Report (Appendix B) that was prepared for this Project.

6.1 Agencies

California Office of Historic Preservation

City of Los Angeles Department of Public Works, Bureau of Sanitation

City of Los Angeles Department of City Planning

City of Los Angeles Department of Recreation and Parks

City of Los Angeles Department of Water and Power

Los Angeles Fire Department

Los Angeles Police Department

Native American Heritage Commission

South Central Coastal Information Center

South Coast Air Quality Management District

United States Department of the Interior, National Park Service

6.2 Organizations

Gabrieleno Band of Mission Indians

Gabrielino Tongva Tribe

Tongva Ancestral Territorial Tribal Nation

Southern California Gas Company

This page was intentionally left blank.

Chapter 7
List of Preparers

The lead agency for the Project under CEQA is the City of Los Angeles. ICF International prepared this EIR on the Lead Agency's behalf. Additional technical assistance was provided by HDR Engineering Inc. for project management and engineering support, by Intueor Consulting for the traffic analysis, and by ATS Consulting for the noise and vibration analysis. Metro, the City of Los Angeles Department of Public Works, Bureau of Engineering, and Los Angeles Streetcar Inc. (LASI) provided environmental review. This chapter lists the individuals who prepared the report.

City of Los Angeles Department of Public Works, Bureau of Engineering

Reza Shahmirzadi, P.E., S.E., Downtown Los Angeles Streetcar Division I Program Manager

William Jones, Environmental Management Group I Environmental Supervisor II

City of Los Angeles Department of Transportation

Seleta Reynolds, LADOT General Manager

Kari Derderian, Supervising Transportation Planner II, Specialized Transit & Grants Division

Tomas Carranza, PE, Planning & Land Use Review, Senior Transportation Engineer

Sean Skehan, Principal Transportation Engineer, Operations Group

Bill Shao, Senior Transportation Engineer, ATSAC Operations Division

Martha D'Andrea, Supervising Transportation Planner I, Specialized Transit & Grants Division

Los Angeles Streetcar Inc. (LASI)

Shane Phillips, Project Director

Ryan M. Leaderman, Esq., Liner LLP

Los Angeles County Metropolitan Transportation Authority (Metro)

David Mieger, Executive Officer

Peter Carter, Transportation Planning Manager

Gary Byrne, Transportation Planner

HDR Engineering, Inc.

Jim Hecht, Project Manager

ICF International

Lee Lisecki, Project Director

Gary Petersen, Senior Project Manager

Namrata Cariapa, Deputy Project Manager

Keith Cooper, Air Quality

Rick Starzak, Cultural Resources

Jessica Feldman, Cultural Resources

Elizabeth Hilton, Cultural Resources

Mark Robinson, Archaeology and Paleontology

Stephen Bryne, Archaeology

Peter Feldman, Environmental Planner

Tamseel Mir, Environmental Planner

Rusty Whisman, Environmental Planner

Andrew Johnson, Environmental Planner

Brittany Hoedemaker, Research Assistant

Kenneth Cherry, Senior Lead Editor

John Mathias, Senior Lead Editor

Saadia Byram, Senior Lead Editor

Jenelle Mountain-Castro, Publication Specialist

David Duncan, GIS

Brittany Buscombe, GIS

Intueor Consulting, Inc.

Farid Naguib, Traffic

Wahid Farhat, Traffic

ATS Consulting

Steven Wolf, Noise and Vibration

Chapter 8
References

8.1 Printed References

American Society of Landscape Architects. 2003. *Los Angeles Civic Center Shared Facilities and Enhancement Plan*. Available: https://www.asla.org/meetings/awards/awds01/enhancement.html. Accessed: April 4, 2016.

ATS Consulting. 2013. *Draft Noise and Vibration Technical Report for Restoration of Historic Streetcar Service in Downtown Los Angeles*, Version 5. Prepared by ATS Consulting, November 20.

Bean, L. J., and C. R. Smith. 1978. Gabrielino. Pages 538–549 in R. F. Heizer (ed.), *California*. *Handbook of North American Indians*, Vol. 8, W.C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution.

Boden, T.A., G. Marland, and R. J. Andres. 2015. *National CO_2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring.* 1751–2011, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2015.

Building News. 2009. *Greenbook Standard Specifications for Public Works Construction.*

California Air Resources Board (ARB). 1998. *The Report on Diesel Exhaust.* July. Available: http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

———. 2011. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*. August. Available: http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.

———. 2013. *California Greenhouse Gas Inventory for 2000–2011, by Category as Defined in the 2008 Scoping Plan.* August. Available: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf.

———. 2015. *Draft Technology Assessment: Heavy Duty Hybrid Vehicles*. Available: http://www.arb.ca.gov/msprog/tech/techreport/hybrid_tech_report.pdf. Accessed: January 29, 2016.

———. 2016. *iADAM: Air Quality Data Statistics*. Available: http://www.arb.ca.gov/adam/. Accessed: January 29, 2016.

California Department of Conservation. 2013. *Los Angeles County Williamson Act FY 2012/2013.* Available: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/LA_12_13_WA.pdf. Accessed: January 7, 2014.

California Department of Conservation, California Geological Survey. 2007. *Alquist-Priolo Earthquake Fault Zones.* Available: http://www.conservation.ca.gov/cgs/rghm/ap/Pages/Index.aspx. Accessed: September 2, 2013.

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Los Angeles County 2010 Map. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/los10.pdf.

California Department of Conservation, Division of Mines and Geology. 1999. *Seismic Hazard Zones: Los Angeles Quadrangle*. Available: http://gmw.consrv.ca.gov/shmp/download/pdf/ozn_la.pdf. Accessed: September 12, 2013.

California Department of Transportation (Caltrans). 2006. *Caltrans Highway Design Manual*.

———. 2011. *Scenic Highways and Eligible Scenic Highways List, Los Angeles County, California*. Available: http://www.dot.ca.gov/hq/LandArch/sceniccahisys4.htm. Accessed: February 2013.

———. 2012. *Standard Environmental Reference*, *Chapter 27. Visual and Aesthetic Review*. Available: http://www.dot.ca.gov/ser/vol1/sec3/community/ch27via/chap27via.htm. Accessed: February 2013.

California Energy Commission. 2016. *2015 Integrated Energy Policy Report*. Available: http://www.energy.ca.gov/2015_energypolicy/index.html. Accessed: February 18, 2016.

California Environmental Protection Agency (Cal/EPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. April 3.

———. 2007. *Proposed Early Action to Mitigate Climate Change in California*. Available: http://www.climatechange.ca.gov/climate_action_team/reports/2007-04-20_ARB_early_action_report.pdf.

California Geological Survey. 2007. *Los Angeles County Tsunami Inundation Maps*. Available: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/LosAngeles/Pages/LosAngeles.aspx. Accessed: September 11, 2013.

California Office of Historic Preservation. 1977a. Broadway Theater and Commercial District National Register nomination.

———. 1977b. Spring Street Financial District National Register nomination.

———. 1992. *California Points of Historical Interest*. California State Parks, Sacramento, CA. Available: http://ohp.parks.ca.gov/?page_id=21750. Accessed: March 2013.

———. 1996. *California Historical Landmarks*. California Historical Landmarks in Los Angeles County. California State Parks, Sacramento, CA. Available: http://ceres.ca.gov/geo_area/counties/Los_Angeles/landmarks.html. Accessed: March 2013.

———. 2012. *California Historic Resources Inventory System*. California State Parks, Sacramento, CA.

Caughey, J., and L. Caughey. 1977. *Los Angeles: Biography of a City.* Los Angeles: University of California Press.

Chattel Architecture, Planning and Preservation, Inc. 2010. *Supplemental Historic Property Survey Report for Broadway Streetscape Master Plan, City of Los Angeles*. August.

City of Los Angeles. 1995. *Los Angeles Citywide General Plan Framework Draft Environmental Impact Report.* Figure GS-1 and Figure GS-6. January 19.

———. 1996. *Safety Element of the City of Los Angeles General Plan*. Available: http://planning.lacity.org/cwd/gnlpln/SaftyElt.pdf. Accessed: February 3, 2014.

———. 1999. *City of Los Angeles General Plan: Transportation Element.*

———. 2001. *Central City Community Plan.* Available: http://planning.lacity.org/complan/pdf/CCYCPTXT.PDF.

———. 2001. *Conservation Element of the City of Los Angeles General Plan*. Available: http://planning.lacity.org/cwd/gnlpln/ConsvElt.pdf. Accessed: February 6, 2014.

———. 2002a. *City of Los Angeles California Environmental Quality Act Guidelines*. Available: http://cityplanning.lacity.org/eir/CEQA_Guidelines/City_CEQA_Guidelines.pdf.

———. 2002b. *Downtown Design Guide.* Available: http://www.NRHP.com/CA/Los+Angeles/state.html.

———. 2004. Los Angeles Municipal Code. Chapter IV, Article 1, Section 41.40. Construction Activities. Available: http://lacodes.lacity.org/NXT/gateway.dll?f=templates&fn=default.htm. Accessed: September 2012.

———. 2006. *CEQA Thresholds Guide*. Available: http://environmentla.org/programs/thesholdsguide.htm. Accessed: March 2013

———. 2007. *GREEN LA: An Action Plan to Lead the Nation in Fighting Global Warming*. May. Available: http://environmentla.org/pdf/GreenLA_CAP_2007.pdf.

———. 2008. *Walkability Checklist for Entitlement Review*. Urban Design Studio of the Department of Planning. Los Angeles. November. Available: http://www.urbandesignla.com/resources/LAwalkabilityChecklist.php. Accessed: March 2013

———. 2009a. *Downtown Design Guide*. Urban Design Studio of the Department of Planning. Los Angeles. June 15.

———. 2009b. *Los Angeles General Plan Framework and Central City Community Plan*. Los Angeles. Available: http://cityplanning.cityofla.org. Accessed: December 4, 2013.

———. 2011a. *2010 Bicycle Plan, A Component of the City of Los Angeles Transportation Element*. Los Angeles, CA. Los Angeles Department of City Planning. Adopted March 1, 2011.

———. 2011b. Citywide Design Guidelines (for commercial properties). Los Angeles. May.

———. 2013a. *Broadway Streetscape Master Plan*. Los Angeles. Available: http://cityplanning.lacity.org/code-studies/broadwaysp/. Accessed: February 2013.

———. 2013b. *ZIMAS*. Online Database. Available: zimas.lacity.org. Accessed: March 2013.

———. 2013c. *City of Los Angeles General Plan.* Available: http://cityplanning.lacity.org/. Accessed: December 4, 2013.

———. 2014. *Traffic Study Policies and Procedures*. Department of Transportation. Available: http://ladot.lacity.org/sites/g/files/wph266/f/lacityp_029521.pdf. Accessed: June 26, 2016.

———. 2016a. *Mobility Plan 2035*. Available: http://planning.lacity.org/documents/policy/mobilityplnmemo.pdf. Accessed: February 18, 2016.

———. 2016b. Framework Element: Chapter 9 – Infrastructure and Public Services. Available: http://planning.lacity.org/cwd/framwk/chapters/09/09.htm. Accessed: February 18, 2016.

City of Los Angeles, Bureau of Sanitation. 2012. Letter to Permitted Waste Hauler from Karen A. Coca. Subject: Updated Recycling Rates for Certified Mixed Waste Processors. January 24.

City of Los Angeles, Department of City Planning. No date. *General Plan Structure: Summary of the General Plan Elements*. Available: http://cityplanning.lacity.org/Code_Studies/GeneralElement/Summarygp.pdf. Accessed: October 30, 2013.

———. 1996. *Safety Element of the Los Angeles City General Plan*. Available: http://cityplanning.lacity.org/cwd/gnlpln/saftyelt.pdf. Accessed: September 12, 2013.

———. 2015. *Plan for a Healthy Los Angeles*. March. Available: http://healthyplan.la/the-plan/. Accessed: April 4, 2016.

———. 2016. *LA/2B Website*. Available: https://la2b.org/. Accessed: April 22, 2016.

City of Los Angeles, Department of Public Works, Bureau of Engineering. 2004. *Geotechnical Engineering for the New Metro Jail Facility* (W.O. #E170705B).

———. 2011. *Brown Book: January 6, 2011 Version*. Available: http://eng.lacity.org/techdocs/stdplans/s-600/BB2011.pdf. Accessed: October 22, 2013.

Comer, V. L. 1996. *Angels Flight*. Los Angeles: Historical Society of Southern California.

Community Redevelopment Agency of the City of Los Angeles (CRA/LA). 2002. *Redevelopment Plan for the City Center Redevelopment Project. Adopted*: May 15, 2002. Available: http://www.crala.org/internet-site/Projects/City_Center/upload/citycenter.pdf. Accessed: April 4, 2016

———. 2006. *Feasibility Study for the Resurrection of the Red Car Trolley Services in the Los Angeles Downtown Area.* Los Angeles, CA. Prepared by IBI Group. July.

Council on Environmental Quality. 2010. *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. Memorandum for Heads of Federal Departments and Agencies. February 18. Available: http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

———. 2014. *Revised Draft Guidance for Greenhouse Gas Emission and Climate Change Impacts*. Available: https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf. Accessed: January 28, 2016.

County of Los Angeles Tax Assessor. 2013. *Parcel Viewer*. Available: http://assessormap.co.la.ca.us/mapping/viewer.asp. Accessed: March 2013.

Crump, S. 1965. *Ride the Big Red Cars*. Costa Mesa: Trans-Anglo Books.

Department of State. 2010. U*.S. Climate Action Report – Fifth National Communication of the United States of America Under the United Nations Framework Convention on Climate Change*. Available: http://www.state.gov/documents/organization/140636.pdf. Washington: Global Publishing Services, June.

Dibblee, T. W., Jr. 1989. *Geologic Map of the Los Angeles Quadrangle, Los Angeles County, California.* Dibblee Geology Center Map #DF-22.

Dillon, B. D. 1994. *Alameda District Plan, Los Angeles, California: Prehistoric and Early Historic Archaeological Research*. On file, South Central Coastal Information Center, California Historical Resources Information System, University of California, Los Angeles.

Downtown Center Business Improvement District. 2012. *Downtown Los Angeles Demographic Study 2011*. Available: http://www.downtownla.com/survey/2011/Downtown-LA-Demographic-Study-2011.pdf. Accessed: April 12, 2013.

Downtown Los Angeles Neighborhood Council. No date. Historic Resources Survey. Available: http://dlanc.com/planning/projects/historic-resources-survey/historic-resources-building-list/. Accessed: April 2013.

Electric Railway Historical Association of Southern California. No date. *The Street Railway History of Los Angeles*. Available: http://www.erha.org/railwayhis.htm. Accessed: September 4, 2012.

Federal Highway Administration. 2012. *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA.* December. Available: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm. Accessed: June 13, 2013.

Federal Highway Administration and U.S. Environmental Protection Agency. 2010. *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas.* December. Available: http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf.

Federal Highway Administration, Office of Planning and Environment. 2006. *Roadway Construction Noise Model User's Guide*. Document FHWA-HEP-05-054. January.

Federal Highway Administration, Office of Environmental Policy, U.S. Department of Transportation. 1981. *Visual Impact Assessment for Highway Projects*. Washington DC. March.

———. 1988. *Visual Impact Assessment for Highway Projects*. Available: www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactsAssmt.pdf. Accessed: September 2012.

———. 2015. *MAP-21 Extensions*. Available: https://www.fhwa.dot.gov/map21/legislation.cfm. Accessed: February 18, 2016.

Federal Transit Administration, Office of Planning and Environment. 2006. *Transit Noise and Vibration Impact Assessment*. Document FTA-VA-90-1003-06, May 2006.

Fehr & Peers. 2013. *Memorandum: Impact of Los Angeles Streetcar on Travel and VMT*. August 26.

Garza, V. J., P. Graney, and D. Sperling. 1997. Reissued 2010. *Transportation Project-Level Carbon Monoxide Protocol.* Davis, CA: Institute of Transportation Studies, University of California, Davis.

Gebhard, D., and R. Winter. 2003. *An Architectural Guidebook to Los Angeles.* Salt Lake City: Gibbs Smith.

Georgetown Climate Center. 2012. *Summary of the Federal District Court's Order Enjoining California's Low Carbon Fuel Standard*. January. Available: http://www.georgetownclimate.org/sites/default/files/Summary_of_Court_Enjoining_CA_LCFS.pdf. Accessed: June 13, 2013.

Harris, C. M. 1991. *Handbook of Acoustical Measurements and Noise Control*, Third Edition, New York: McGraw-Hill.

Harris Miller Miller & Hanson, Inc. 2003.*Typical Noise Levels in the Environment*.

HDR Inc. 2013. *Restoration of Historic Streetcar Service in Downtown Los Angeles, Draft Construction Methods Technical Memorandum*. Prepared by HDR, Inc. July.

Historic Resources Group. 1998. *Historic Architectural Survey and Evaluation Report and Finding of No Adverse Effect for the Broadway Streetscape Improvement Project*. 1 October.

ICF International. 2013. *Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles.*

Intueor. 2013. *Restoration of Historic Streetcar Service in Downtown Los Angeles Transportation Technical Study for the Draft EIR/EA.* September.

Kroeber, A. 1925. *Handbook of the Indians of California*. Bulletin 78, American Bureau of Ethnology. Reprinted in 1976. NY: Dover Publications, Inc.

Landmark Watch. 2013. *Los Angeles National Historic Landmarks*. Available: http://www.landmarkwatch.org/PDF/LosAngeles_City.NHLs.pdf. Accessed: May 2013.

Los Angeles Conservancy. 1990. *Historic Resources in Context for the Central Business District Redevelopment Project Area.* 30 May. Los Angeles Community Redevelopment Agency, Los Angeles, II-11-II-12.

———. 2010. *Strolling on 7th Street: Downtown's Historic Thoroughfare.* Available: http://www.laconservancy.org/tours/Strolling_on_Seventh.pdf.

Los Angeles Conservancy and Architectural Resources Group, Inc. 2002. *Historic Downtown Los Angeles Design Guidelines*. July.

Los Angeles County Airport Land Use Commission. 2012. *Airports and Airport Influence Areas.* Available: http://planning.lacounty.gov/assets/upl/project/ALUC_Airports_June2012_rev2d.pdf. Accessed: February 3, 2014.

Los Angeles County Metropolitan Transportation Authority (Metro). 2010a. *Regional Connector Transit Corridor Project Draft Environmental Impact Statement/Environmental Impact Report.* Appendix U: Geotechnical/Subsurface/Seismic/Hazardous Materials. Available: http://media.metro.net/projects_studies/connector/images/deis-deir/Appendices/Appendix-U.pdf. Accessed: October 8, 2013.

———. 2010b. *Congestion Management Program for Los Angeles County.* Los Angeles, CA.

———. 2012. *Restoration of Historic Streetcar Service in Downtown Los Angeles Alternatives Analysis.* Los Angeles, CA. Prepared by HDR, Inc. January.

Los Angeles Department of City Planning. 2013. *Broadway Streetscape Master Plan*. Adopted: February 14, 2013. Available: http://planning.lacity.org/complan/othrplan/pdf/Broadway_StreetscapePlan_FinalAdopted.pdf. Accessed: December 10, 2015.

Los Angeles Department of Transportation. No date. *Rider's Code of Conduct*. Available: http://www.ladottransit.com/conduct.html. Accessed: November 12, 2013.

———. 2013. *City of Los Angeles Bikeways*. Available: http://www.bicyclela.org/maps_main.htm#lamaps. Accessed: December 2, 2013.

———. 2015. Case Logging and Tracking System (CLATS). Related projects list. Generated October 15, 2015.

Los Angeles Department of Water and Power (LADWP). 2010. *Urban Water Management Plan 2010.* Available: http://www.water.ca.gov/urbanwatermanagement/2010uwmps/Los%20Angeles%20Department%20of%20Water%20and%20Power/LADWP%20UWMP_2010_LowRes.pdf. Accessed: February 26, 2014.

———. 2012. *Power Integrated Resource Plan*. Adopted December 2012. Available: https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-p-doc?_adf.ctrl-state=1cfxsb0n2b_4&_afrLoop=238826678507673. Accessed: October 28, 2013.

———. 2013a. *Los Angeles Streetcar Project, Five Traction Power Sites*. Written correspondence to Los Angeles County Metropolitan Transportation Authority. December 5.

———. 2013b. *Local Groundwater*. Available: https://ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-waterquality/a-w-wq-localgroundwater;jsessionid=pD1GSy4MM0y5Pv1fvFh9K7vVY7pn5SzMkPSGbthS2hB68R2NhZZ4!-2087124280?_adf.ctrl-state=yrk73qzpt_4&_afrLoop=77916169008637&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D77916169008637%26_afrWindowMode%3D0%26_adf.ctrl-state%3D1anb2inw1e_4. Accessed: February 3, 2014.

———. 2015. *Power Integrated Resource Plan*. Available: https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-p-doc?_adf.ctrl-state=mefi0dyks_4&_afrLoop=246134492408106. Accessed: April 29, 2016.

Los Angeles Downtown News. 2013. *The Development Scene: The Latest Info on 94 Downtown Projects*. Available: http://www.ladowntownnews.com/news/the-development-scene-the-latest-info-on-downtown-projects/article_347292aa-1eeb-11e3-b5c5-001a4bcf887a.html. Accessed: October 28, 2013.

Los Angeles Police Department. 2013. *Compstat: Central Area Profile*. Available: http://www.lapdonline.org/assets/pdf/cntprof.pdf. Accessed: November 8, 2013.

Los Angeles Streetcar, Inc. 2013. *About L.A. Streetcar: The Proposed Route.* Available: http://www.streetcar.la/about/152/why-this-route. Accessed: October 8, 2013.

Masters, N. 2013. Remember L.A.'s Other Trolleys: The Yellow Cars. *Los Angeles Magazine,* 3 March.

McLeod, S. A. 2012. *Paleontological Resources for the Proposed Los Angeles Street Civic Building (Parker Center) Project, Los Angeles, California*. Letter Report from the Natural History Museum of Los Angeles County, 18 September 2012.

———. 2013. *Paleontological Resources for the Proposed Downtown LA Streetcar Project, Los Angeles, California*. Letter Report from the Natural History Museum of Los Angeles County, 9 December 2013.

Miller, W. E. 1971. *Pleistocene Vertebrates of the Los Angeles Basin and Vicinity (exclusive of Rancho La Brea).* Bulletin of the Los Angeles County Museum of Natural History No. 10, 124 pp.

Moratto, M. J. 1984. *California Archaeology*. Academic Press, Inc., Orlando and London.

MyFigueroa Streetscape Project. 2013. Final Workshop Power Point Presentation, dated April 9. Available: http://www.myfigueroa.com/about. Accessed: April 2013.

National Historic Landmarks. 2013. *National Historic Landmarks Program*. Available: tps.cr.nps.gov/nhl/detail.cfm?ResourceId=1075&ResourceType=Building. Accessed: May 2013.

National Oceanic and Atmospheric Administration. No date. *Climate of Los Angeles*. Available: http://www.wrh.noaa.gov/lox/climate/climate_intro.php. Accessed: June 13, 2013.

National Park Service. 1997. *National Register Bulletin 16 – Guidelines for Completing National Register of Historic Places Forms, Part A - How to Complete the National Register Registration Form*.

———. 2013. *National Register of Historic Places: California – Los Angeles County*. Available: http://www.nationalregisterofhistoricplaces.com/CA/Los+Angeles/state10.html. Accessed: March 2013.

Newmark, Harris. 1916. *Sixty Years in Southern California: 1853–1913.* New York: Knickerbocker Press.

Oak Ridge National Laboratory. 2013. *Transportation Energy Data Book.* Edition 32. Available: http://cta.ornl.gov/data/index.shtml. Accessed: October 21, 2013.

———. 2015. *Transportation Energy Data Book*. Edition 34, Chapter 2, Energy. Available: http://cta.ornl.gov/data/index.shtml. Accessed: February 18, 2016.

Office of Governor. 2015. Executive Order B-30-15 News Release. Available: https://www.gov.ca.gov/news.php?id=18938. Accessed: January 28, 2016.

Post, R. C. 1989. *Street Railways and the Growth of Los Angeles*. San Marino: Golden West Books.

Reade Advanced Materials. 2014. *Weight Per Cubic Foot and Specific Gravity.* Available: http://www.reade.com/Particle_Briefings/spec_gra2.html. Accessed: February 26, 2014.

Robinson, W. W. 1952. *The Indians of Los Angeles: Story of the Liquidation People.* Los Angeles: Dawson's Books.

Roseman, C. C. 2004. *The Historic Core of Los Angeles.* Charleston: Arcadia.

Safe Transportation Research and Education Center. 2013. *Transportation Injury Mappings System*. University of California, Berkeley. Available: http://tims.berkeley.edu/tools/gismap/index.php#. Accessed: November 8, 2013.

South Coast Air Quality Management District. 1993. *CEQA Air Quality Handbook*. April.

———. 1993. *Air Quality Analysis Guidance Handbook*. Available: http://www.aqmd.gov/ceqa/hdbk.html. Accessed: February 3, 2014.

———. 1998. *SCAQMD Risk Assessment Procedures for Rules 1401 and 212*. November.

———. 2003. *Localized Significance Threshold Methodology for CEQA Evaluations*. June.

———. 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.

———. 2006. *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology*. October.

———. 2007. *2007 Air Quality Management Plan*. Available: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan

———. 2008. *MATES III Final Report*. September. Available: http://www.aqmd.gov/prdas/matesIII/MATESIIIFinalReportSept2008.html.

———. 2011. *Table 1: Meteorological Sites*. Available: http://www.aqmd.gov/smog/metdata/AERMOD_Table1.html.

———. 2012. *2012 Air Quality Management Plan.* Available: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan. Accessed: April 22, 2016.

———. 2013. *Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk.* Available: http://www3.aqmd.gov/webappl/matesiii/.

———. 2014a. *Projected Future Year 1-Hour Concentration (ppm).* Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed: January 25, 2016.

———. 2014b. *Projected Future Year 8-Hour Concentration (ppm)*. Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed: January 25, 2016.

———. 2015a. *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act*. Available: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588_guidelines.pdf?sfvrsn=2. Accessed: January 29, 2016.

———. 2015b. *MATES-IV*. Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed: January 29, 2016.

———. 2016. *2016 Air Quality Management Plan*. Available: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan. Accessed: January 29, 2016.

Southern California Association of Governments (SCAG). 2008. *2008 Regional Comprehensive Plan*. Available: http://www.scag.ca.gov/rcp/index.htm. Accessed: December 4, 2013.

———. 2012a. *2012–2035 Regional Transportation Plan/ Sustainable Communities Strategy*. Available: http://rtpscs.scag.ca.gov/Pages/default.aspx. Accessed: December 4, 2013.

———. 2012b. *2013 Federal Transportation Improvement Program.* September.

———. 2013a. *Compass Blueprint*. Available: http://www.compassblueprint.org/Pages/default.aspx. Accessed: December 4, 2013.

———. 2013b. *Minimum Criteria for Classification of Projects as Regionally Significant*. http://www.scag.ca.gov/igr/clist.htm. Accessed: December 4, 2013.

———. 2015. *Draft 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.* Available: http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS.pdf. Accessed: January 29, 2016.

Southern California Earthquake Data Center. 2013. *Significant Earthquakes and Faults. California Institute of Technology: Fault Name Index*. Available: http://www.data.scec.org/significant/fault-index.html. Accessed: September 10, 2013.

Springer, K. 2006. *Paleontologic Resource Mitigation Program, California Department of Transportation District 7 Headquarters Replacement Project, Los Angeles, California.* Prepared by the San Bernardino County Museum. Prepared for Applied EarthWorks Inc., Hemet, CA.

Starr, K. 2005. *California: A History*. New York: The Modern Library.

Sutley, N. H. 2010. *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. Memorandum for Heads of Federal Departments and Agencies. February 18. Available: http://ceq.hss.doe.gov/nepa/regs/ Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

Transportation Research Board. 2005. *Highway Capacity Manual* (2000), Special Report 209.

United Department of Transportation, Urban Mass Transportation Administration. 1980. *Final Environmental Impact Statement: Los Angeles Downtown People Mover Project.* June.

U.S. Energy Information Administration. 2013. *California Profile Overview.* Available: http://www.eia.gov/state/?sid=CA#tabs-2. Accessed: February 18, 2016.

U.S. Environmental Protection Agency (EPA). 2011. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2009*. EPA 430-R-11-005. April.

———. 2013. *Monitor Values Report*. Available: http://www.epa.gov/airdata/ad_rep_mon.html. Accessed: May 21, 2013.

———. 2014. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2012.* Available: www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Main-Test.pdf. Accessed: February 23, 2014.

———. 2015a. Tran*sportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas.* Available: http://www3.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm. Accessed: January 29, 2016.

———. 2015b. *Green Book: California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutan*ts. Available: http://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed: January 29, 2016.

———. 2016a. *AirData*. Available: http://www3.epa.gov/airquality/airdata/. Accessed: January 29, 2016.

———. 2016b. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014*. April. Available: https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html.

U.S. Environmental Protection Agency and National Highway Traffic Safety Administration. 2012. Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017–2025 Cars and Light Trucks. August. Available: http://www.epa.gov/otaq/climate/documents/420f12051.pdf.

U.S. Fish and Wildlife Service. 2014. *National Wetlands Inventory*. Available: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed: February 3, 2014.

Walker, J. 1977. *The Yellow Cars of Los Angeles*. Glendale: Interurbans Publications.

Western Climate Initiative. 2010. *Guidance to Partners for Distributing Early Reduction Allowances.* June. Available: http://www.westernclimateinitiative.org/document-archives/Cap-Setting-and-Allowance-Distribution-Committee-Documents/Guidance-for-Distributing-Early-Reduction-Allowances/.

Western Regional Climate Center. 2013. *Los Angeles Civic Center, California (045115).* Available: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5115.

Workman, B. 1935. *The City That Grew*. Los Angeles: The Southland Publishing.

Works Progress Administration. 1939. *California: A Guide to the Golden State*. New York: Hastings House.

8.2 Personal Communications

Brennan, Thom. Los Angeles Police Department. September 10, 2012, response to questions regarding police service for the *Los Angeles Street Civic Building Project (Parker Center), Draft Environmental Impact Report*.

Carter, Peter. Los Angeles County Metropolitan Transportation Authority. Email to Gary Petersen, ICF International, regarding STOPS model ridership updates. April 4, 2016.

Garrity, Kevin. Letter from Kevin Garrity (Los Angeles Department of Water and Power) to Susan Chivaratanond (Los Angeles County Metropolitan Transportation Authority) regarding LA Streetcar energy demand. December 5, 2013.

Hecht, Jim. Email communication between Jim Hecht (HDR Consulting) and Werner Uttinger (LTK Engineering Services). February 12, 2014.

Intueor. 2015. Personal communications, Farid Naguib (Intueor) to Namrata Cariapa (ICF), December 17, 2015; Wahid Farhat (Intueor) to Namrata Cariapa (ICF), December 21, 2015; Wahid Farhat (Intueor) to Namrata Cariapa (ICF), December 24, 2015.

Sergeant Thomas, Bruce. Los Angeles County Sheriff's Department, Transit Services Bureau. February 26, 2014—telephone conversation.

Scott, Eric. Curator, Paleontology. San Bernardino County Museum, Redlands, CA. September 10, 2012—telephone conversation.

This page was intentionally left blank.

DEIR APPENDICES

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

STATE CLEARINGHOUSE NO. 2013011001

DRAFT EIR APPENDICES

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

STATE CLEARINGHOUSE NO. 2013011001

CONTACT:

City of Los Angeles Department of Public Works, Bureau of Engineering
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
Attention: William Jones
eng.lastreetcarproject@lacity.org
http://lastreetcar.nationbuilder.com/

PREPARED BY:

ICF International
601 W. Fifth Street, Suite 900
Los Angeles, CA 90071

June 2016

ICF International. 2016. Draft EIR Restoration of Historic Streetcar Service in Downtown Los Angeles. June. (ICF 00646.11.) Los Angeles, CA. Prepared for City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Appendix A
Notice of Preparation/Initial Study—Restoration of Historic Streetcar Service in Downtown Los Angeles

CITY OF LOS ANGELES

CALIFORNIA

ANTONIO R. VILLARAIGOSA
MAYOR

DEPARTMENT OF
PUBLIC WORKS

BUREAU OF
ENGINEERING

GARY LEE MOORE, P.E.
CITY ENGINEER

1149 S. BROADWAY, SUITE 700
LOS ANGELES, CA 90015-2213

http://eng.lacity.org

January 3, 2013

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT

To: Responsible Agencies, Trustee Agencies, Stakeholders, and Interested Parties

From: City of Los Angeles, Department of Public Works
Bureau of Engineering,
1149 South Broadway, Suite 600
Los Angeles, CA 90015-2213

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

The City of Los Angeles Department of Public Works, Bureau of Engineering, as the lead agency, will prepare an environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the project identified below. In addition, the Federal Transit Administration (FTA) and the City of Los Angeles Department of Transportation (LADOT) are the co-lead agencies under the National Environmental Policy Act (NEPA). An environmental assessment (EA) will be prepared in accordance with NEPA. The LADOT is a responsible agency under CEQA.

The Bureau of Engineering requests your comments regarding the scope and content of the EIR/EA.

Project Title	Restoration of Historic Streetcar Service in Downtown Los Angeles
Project Location	The proposed project, which would be located in downtown Los Angeles, would travel through the following neighborhoods/districts (from north to south): the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, the Fashion District, and the Los Angeles Sports and Entertainment District, all of which are located within the Central City Community Plan area of the City of Los Angeles. The proposed 3.8-mile project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area comprised primarily of commercial land uses with a mix of residential, public, and entertainment uses interspersed throughout the project vicinity. Figure 1 depicts the regional location of the proposed project.
Project Description	The streetcar system would run within existing traffic lanes and would consist of a fleet of electric-powered vehicles utilizing a track and roadway configuration allowing for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would

convert high voltage power to approximately 600 volts direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide, and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loop, and there may be another TPSS at the Maintenance and Storage Facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would be generally located along the sidewalk or as a sidewalk extension towards the traffic lane to meet the streetcar vehicle. An exception to this is the stop on Grand Avenue north of 2nd Street that is planned in the median with crosswalks to either side of the street. Streetcar stops would generally be placed every block in the north-south direction, and every other block in the east-west direction.


Photo depicts a sample streetcar vehicle in an urban setting.

Two potential build alternatives have been carried forward as a result of the Alternatives Analysis Report. The alternatives under consideration for the Restoration of Historic Streetcar Service in Downtown Los Angeles include:

Locally Preferred Alternative (LPA) – The proposed project would construct and implement streetcar service along a one-way loop that would run from 1st Street on the north, through downtown Los Angeles, to 11th Street on the south. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn on 1st Street in the eastbound direction. From 1st Street, the streetcar would turn southbound, down Broadway, travelling 1.25 miles to 11th Street where it would turn westbound. The streetcar would then turn north on Figueroa Street and travel 0.5 mile north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street, then complete the circuit and turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall. Figure 2 depicts the LPA alignment.

9th Street Alternative – The 9th Street Alternative would follow the same alignment as the LPA but would run eastbound on 9th Street between Figueroa Street and Hill Street rather than 7th Street. Figure 3 depicts the 9th Street alignment.

Under both alternatives, there are three potential sites for the

	maintenance and storage facilities. These include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11st Street and Grand Avenue. The environmental impacts of both alternatives will be evaluated through the EIR/EA process. As needed, additional alternatives may be identified to lessen or avoid potential environmental impacts. These alternatives will be analyzed to a lesser level of detail, in accordance with CEQA.
Potential Environmental Effects	An Initial Study, which includes a preliminary review of the proposed project's environmental impacts, is attached to this NOP. Based on the results of the Initial Study, potential impacts in the following categories will be analyzed in further detail in the EIR/EA in accordance with CEQA and NEPA requirements: CEQA • Aesthetics • Air Quality Cultural Resources • Energy • Geology and Soils • Greenhouse Gas Emissions • Hazards and Hazardous Materials • Land Use and Planning • Noise and Vibration • Transportation/Traffic • Construction Impacts • Cumulative Impacts NEPA • Land Use and Zoning • Transportation System and Facilities • Air Quality • Historic, Archaeological, and Paleontological Resources • Visual Quality • Noise and Vibration • Land Acquisitions, Displacement, and Relocation • Hazardous Materials • Geology, Soils, and Seismicity • Community and Neighborhoods • Parks and Recreation Areas • Energy Resources • Safety and Security • Environmental Justice • Construction Impacts • Section 4(f) Resources

The Initial Study can be reviewed at the following locations:

Little Tokyo Branch Library, 244 S. Alameda Street
Central Library, 630 W. 5th Street
Online at: http://eng.lacity.org/techdocs/emg/

Due to the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to: City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
Attention: Jim Doty
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
or
Via email to: jim.doty@lacity.org

A public scoping meeting will be held to receive public comments regarding the scope and content of the environmental information to be included in the Draft EIR/EA. The Bureau of Engineering encourages all interested individuals to attend this meeting. The location, date, and time of the public scoping meetings for this project are as follows:

Date: Wednesday, January 23rd 2013
Time: 10:00 a.m. to 11:00 a.m. and from 6:30 p.m. to 8:00 p.m.
Location: Caltrans/LADOT, 100 South Main Street, Conference Room 1.A

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities. Sign language interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. Requests should be made 72 hours prior to the meeting by calling (213) 922-3000.

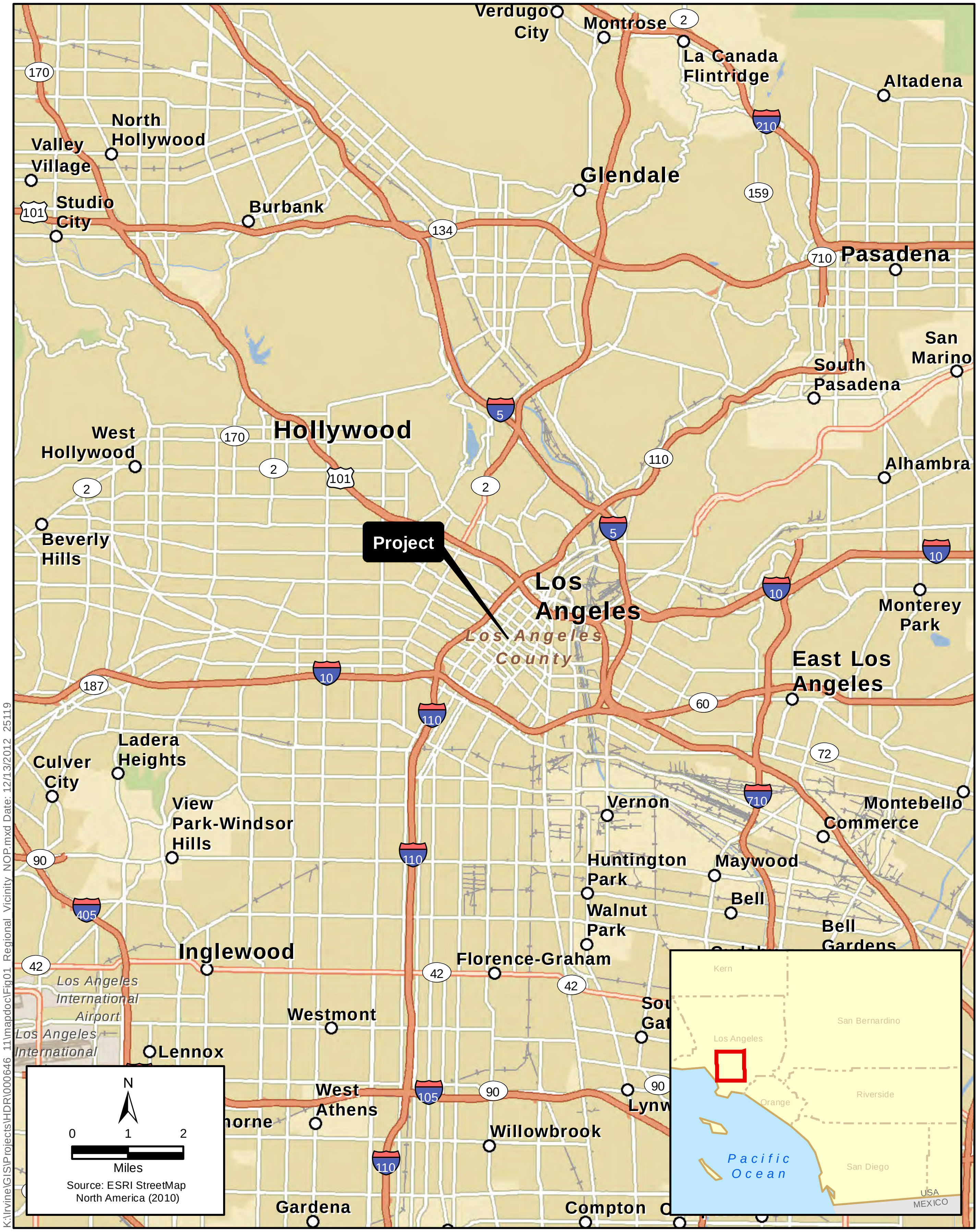


Figure 1
Regional Location Map
Restoration of Historic Streetcar Service in Downtown Los Angeles

ICF INTERNATIONAL

Figure 2
Locally Preferred Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

K:\Irvine\GIS\Projects\HDR\00646_11\mapdoc\Fig03_Project_Alignment.mxd Date: 12/19/2012 25119

ICF INTERNATIONAL

Figure 3
9th Street Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

CITY OF LOS ANGELES
CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

(Article I - City CEQA Guidelines)

Council District: 14 Date: January 3, 2013

Lead City Agency: Department of Public Works, Bureau of Engineering

Project Title: Restoration of Historic Streetcar Service in Downtown Los Angeles

I. INTRODUCTION

A. Purpose of an Initial Study

The California Environmental Quality Act (CEQA) was enacted in 1970 for the purpose of providing decision-makers and the public with information regarding environmental effects of proposed projects; identifying means of avoiding environmental damage; and disclosing to the public the reasons behind a project's approval even if it leads to environmental damage. The Bureau of Engineering Environmental Management Group (EMG) has determined the proposed project is subject to CEQA and no exemptions apply. Therefore, preparation of an initial study is required.

An initial study is a preliminary analysis conducted by the lead agency, in consultation with other agencies (responsible or trustee agencies, as applicable), to determine whether there is substantial evidence that a project may have a significant effect on the environment. If the initial study concludes that the project, with mitigation, may have a significant effect on the environment, an environmental impact report should be prepared; otherwise the lead agency may adopt a negative declaration or mitigated negative declaration.

This Initial Study (IS) has been prepared in accordance with CEQA (Public Resources Code §21000 et seq.), the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended July 31, 2002).

B. Document Format

This Initial Study is organized into eight sections as follows:

<u>Section I, Introduction:</u> provides an overview of the project and the CEQA environmental documentation process.

Section II, Project Description: provides a description of the project location, project background, and project components.

Section III, Existing Environment: provides a description of the existing environmental setting with focus on features of the environment that could potentially affect the proposed project or be affected by the proposed project.

Section IV, Potential Environmental Effects: provides a detailed discussion of the environmental factors that would be potentially affected by this project as indicated by the screening checklist in Appendix A.

Section V, Mitigation Measures: provides the mitigation measures that would be implemented to ensure that potential adverse impacts of the proposed project would be reduced to a less than significant level.

Section VI, Preparation and Consultation: provides a list of key personnel involved in the preparation of this report and key personnel consulted.

Section VII, Determination – Recommended Environmental Documentation: provides the recommended environmental documentation for the proposed project; and,

Section VIII, References: provides a list of reference materials used during the preparation of this report.

C. CEQA Process

To begin the CEQA process, the lead agency identifies a proposed project. The lead agency then prepares an initial study to identify the preliminary environmental impacts of the proposed project. The Initial Study for the Restoration of Historic Streetcar Service in Downtown Los Angeles project determined that the proposed project could have significant environmental impacts that would require further study and/or the implementation of mitigation measures and the lead agency has decided to prepare an Environmental Impact Report/Environmental Assessment (EIR/EA). A Notice of Preparation is prepared to notify public agencies and the general public that the lead agency is starting the preparation of an EIR/EA for the proposed project. The Notice of Preparation and initial study are circulated for a 30-day review and comment period. During this review period, the lead agency requests comments from agencies, interested parties, stakeholders, and the general public on the scope and content of the environmental information to be included in the EIR/EA.

After the close of the 30-day review and comment period, the lead agency continues the preparation of the Draft EIR/EA and associated technical studies (if any). Once the Draft EIR/EA is complete, a Notice of Availability is prepared to inform the public agencies and the general public of the document and the locations where the document can be reviewed. The Draft EIR/EA and Notice of Availability are circulated for a 45-day review and comment period. The purpose of this review and comment period is to provide public agencies and the general public an opportunity to review the Draft EIR/EA and comment on the adequacy of the analysis and the findings of the lead agency regarding potential environmental impacts of the proposed project. After the close of the 45-day review and comment period, responses to all comments received on the Draft EIR/EA are prepared. The lead agency prepares a Final EIR/EA, which incorporates the Draft EIR/EA or a revision to the Draft EIR/EA, Draft EIR/EA comments and list of commenters, and a response to comments discussion. In addition, the lead agency must prepare the findings of fact for each significant effect identified, a statement of overriding considerations if there are significant impacts that cannot be mitigated, and a mitigation monitoring and reporting program to ensure that all proposed mitigation measures are implemented.

The Board of Public Works will consider the Final EIR/EA, together with any comments received during the public review process, and may certify the Final EIR/EA and approve the project or refer the Final EIR/EA and project with a recommendation to the City Council on whether or not to certify the Final EIR/EA and approve the project. If referred to Council, one or more Council committees may then review the proposal and documents and make its own recommendation to the full City Council. The full City Council would consider the Final EIR/EA, together with any comments received during the review and comment process, in the decision to certify the Final EIR/EA and approve or disapprove the project.

During the project approval process, persons and/or agencies may address either the Board of Public Works or the City Council regarding the project. Public notification of agenda items for the Board of Public Works, Council committees, and City Council is posted 72 hours prior to the public meeting. The Council agenda can be obtained by visiting the Council and Public Services Division of the Office of the City Clerk at City Hall, 200 North Spring Street, Suite 395; by calling 213/978-1047, 213/978-1048 or TDD/TTY 213/978-1055; or via the internet at http://eng.lacity.org/techdocs/emg/

Within five days of project approval, the City will file a Notice of Determination with the County Clerk. The Notice of Determination will be posted by the County Clerk within 24 hours of receipt. This begins a 30-day statute of limitations on legal challenges to the approval under CEQA. The ability to challenge the approval in court may be limited to those persons who objected to the approval of the project, and to issues that were presented to the lead agency by any person, either orally or in writing, during the public comment period.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

II. PROJECT DESCRIPTION

A. Location

The proposed project, which would be located in Downtown Los Angeles, would travel through the following neighborhoods/districts (from north to south): the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, the Fashion District, and the Los Angeles Sports and Entertainment District, all of which are located within the Central City Community Plan area of the City of Los Angeles. The proposed 3.8-mile project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area comprised primarily of commercial land uses with a mix of residential, public, and entertainment uses interspersed throughout the project vicinity. Figure 1 depicts the regional location of the proposed project. Figures 2 and 3 depict the alignments of the project alternatives.

B. Purpose

The proposed project has two overarching objectives and several sub-objectives.

- Enhance mobility and transit circulation in Downtown Los Angeles through the following:
  - Connect major districts, destinations, and activity centers.
  - Improve transit coverage and circulation.
  - Provide simple, localized, high frequency service.
  - Alleviate traffic and reduce parking demand.
  - Serve transit-dependent populations.
  - Improve transit accessibility.
- Support the growth and revitalization of Downtown Los Angeles, including its historic districts through the following:
  - Revitalize geographically isolated, economically depressed areas.
  - Support smart, sustainable growth.
  - Foster a more livable Downtown.
  - Encourage historic restoration and transit-oriented development.
  - Strengthen Downtown’s economic competitiveness.

The proposed project aims to address the challenges of navigating a disconnected downtown area by providing a transportation link between various districts. By connecting residential and employment hubs, shopping districts, civic resources, cultural institutions, historic landmarks, entertainment venues, and transit services, the project would increase mobility and accessibility for people who live and work in Downtown, as well as for visitors. The proposed project would promote transit use and walking within Downtown while reducing the need to travel by automobile.

In concert with local efforts, the project is intended to aid in the revitalization of many Downtown districts, including the Historic Core. Local initiatives such as Bringing Back

Broadway (an effort to restore Broadway, which contains the highest concentration of historic theaters in the western United States), redevelopment plans, street improvements, and proposed design guidelines have been proposed to restore the area's historic significance and stimulate economic development opportunities. The reintroduction of streetcar service is proposed to facilitate the renewal of the Historic Core and also support growth and revitalization of the underdeveloped neighborhoods in the area.

C. Description

There are two alternative alignments that are under consideration for the Restoration of Historic Streetcar Service Project:

Locally Preferred Alternative – The proposed project would construct and implement streetcar service along a one-way loop that would run from 1st Street on the north, through Downtown Los Angeles, to 11th Street on the south. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn on 1st Street in the eastbound direction. From 1st Street, the streetcar would turn southbound, down Broadway, travelling 1.25 miles to 11th Street where it would turn westbound. The streetcar would then turn north on Figueroa Street and travel 0.5 mile north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street, then complete the circuit and turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall. Figure 2 depicts the LPA alignment.

9th Street Alternative – The 9th Street Alternative would follow the same alignment as the LPA but would run eastbound on 9th Street between Figueroa Street and Hill Street rather than 7th Street. Figure 3 depicts the 9th Street alignment.

Under both alternatives, there are three potential sites for the maintenance and storage facilities. These include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11st Street and Grand Avenue.

Construction activities for both alternatives would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street. Furthermore, activities would include pavement removal, excavation, track installation, installation of concrete track slab and rails, paving and striping. Other activities would include installation of specialty system work such as traction power, overhead contact wires, communications, and train/traffic signaling, curb, gutter, stop improvements, and overhead contact system (OCS) pole foundations. Unaffected traffic lanes would remain open during construction. Construction would take place between the hours of 7:00 a.m.

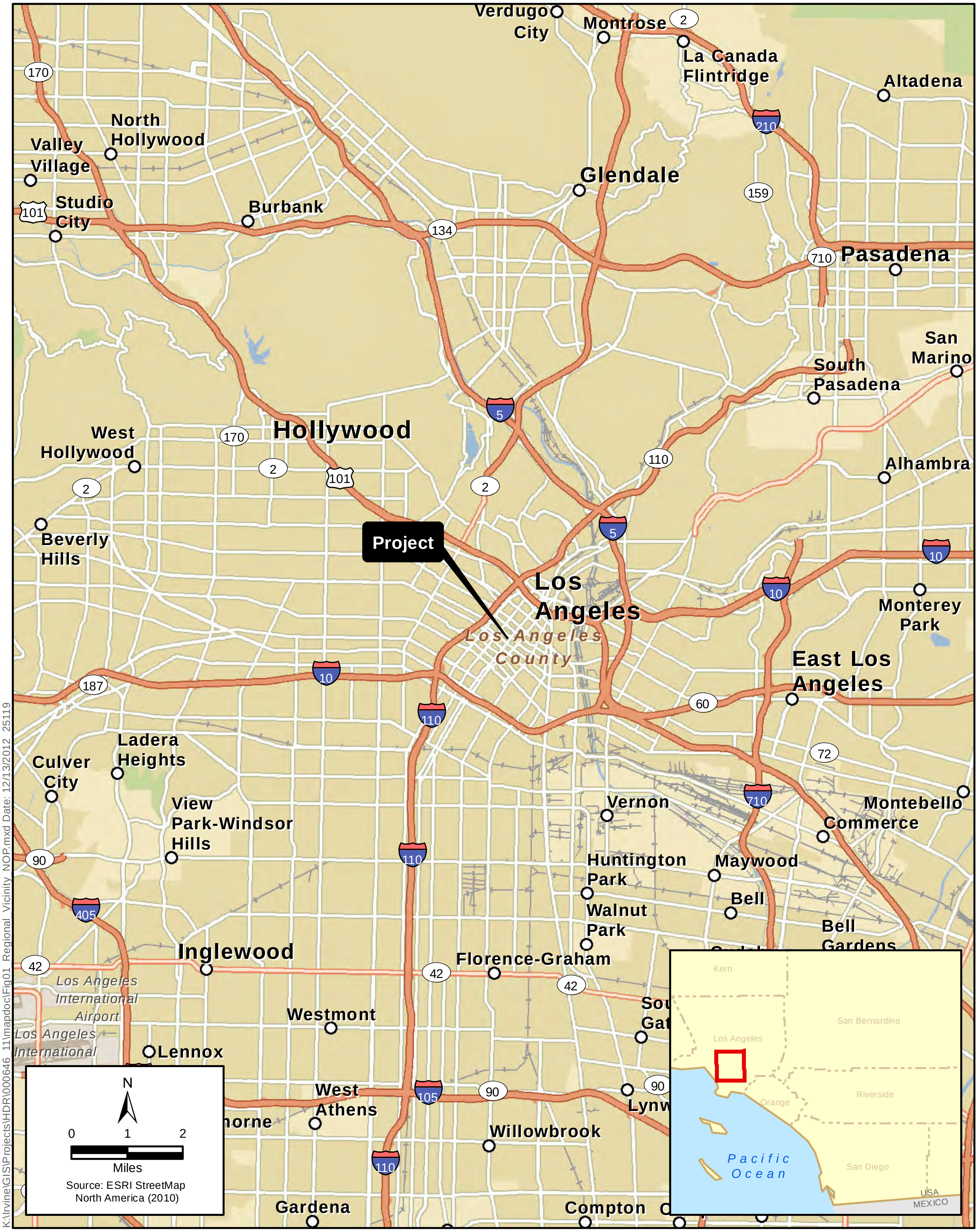


Figure 1
Regional Location Map
Restoration of Historic Streetcar Service in Downtown Los Angeles

K:\Irvine\GIS\Projects\HDR\00646_11\mapdoc\Fig02_Project_Alignment.mxd Date: 12/19/2012 25119

Figure 2
Locally Preferred Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

ICF INTERNATIONAL

Figure 3
9th Street Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

and 9:00 p.m., except for intersection construction, which would take place during nighttime hours.

The streetcar system would run within existing traffic lanes and would consist of a fleet of electric-powered vehicles utilizing a track and roadway configuration allowing for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to approximately 600 volts direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide, and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loop, and there may be another TPSS at the Maintenance and Storage Facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops would be approximately 70 to 120 feet long, and would be generally located along the sidewalk or as a sidewalk extension towards the traffic lane to meet the streetcar vehicle. An exception to this is the stop on Grand Avenue north of 2nd Street that is planned in the median with crosswalks to either side of the street. Streetcar stops would generally be placed every block in the north-south direction, and every other block in the east-west direction.

The streetcar system would operate seven days a week with a total of 3 to 6 streetcars running at any given time. Hours of operation would be approximately 6:00 AM to 12:00 AM on some days, and approximately 6:00 AM to 2:30 AM on some days, depending on demand. The run time for the round-trip would be approximately 35 minutes.

The analysis in this document assumes that, unless otherwise stated, the project would be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards including but not limited to:

- Los Angeles Municipal Code (Reference 17)
- Bureau of Engineering Standard Plans (Reference 24)
- Standard Specifications for Public Works Construction (Reference 1)
- Work Area Traffic Control Handbook (Reference 2)
- Additions and Amendments to the Standard Specifications for Public Works Construction (Reference 23).

III. EXISTING ENVIRONMENT

The project corridor is within the Central City Plan area. The project is consistent with the community plan’s policies. The land use designations of the properties adjacent to the proposed corridor are composed primarily of high density residential, public facilities, commercial land uses, with numerous office buildings, regional center commercial, surface parking lots, and retail shops. The zoning designations for the properties adjacent to the proposed corridor comprise of commercial (C5, C2), open space (OS-1XL), multiple dwelling zone (R5), and public facilities (PF).

The project study area is a dense urban core covering 2.05 square miles and is comprised primarily of commercial land uses, with numerous office buildings and retail shops. In addition, the project study area is home to the region's fastest growing residential area of over 45,000 residents. In recent years, there has been an increasing amount of residential and mixed land uses (especially in South Park and the Historic Core), with 9,391 units of housing having been built within Downtown since 2000 (an increase of 89 percent), and an additional 11,831 units are in planning (permitted, undergoing the approval process, or under consideration) (Reference 31). The proposed project area also has a substantial number of historic buildings. Some of these buildings have been restored; however, many remain vacant or abandoned totaling over one million square feet of unused commercial and residential space. Surface parking lots are also prevalent in the proposed project area.

The project study area is the region's largest employment center of with over 500,000 employees, and one of the region's largest tourist destinations with over 10 million annual visitors (Reference 31). The project study area is also home to many of the region's historic and cultural attractions, such as Bunker Hill (Disney Concert Hall, Museum of Contemporary Art, and future Broad Museum), Broadway (historic theaters and architecture), and Los Angeles Sports and Entertainment District (Staples Center, Nokia Theater, Convention Center, LA Live, Grammy Museum, and potential football stadium). The project study area is a regional hub for transit service, with the highest volumes of boardings/alightings in the Metro rail and bus system as well as connections to Metrolink, Amtrak, and other regional and intercity transportation.

IV. POTENTIAL ENVIRONMENTAL EFFECTS

The environmental factors checked below would be potentially affected by this project, involving at least one potentially significant impact as indicated by the checklist in Appendix A. A detailed discussion of these potential environmental effects follows.

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☒ Geology /Soils
☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☒ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Utilities / Service Systems	☒ Mandatory Findings of Significance

A. Aesthetics

The proposed streetcar would travel through Downtown Los Angeles, an area that contains numerous historic buildings, districts, and architecturally significant resources that may be considered aesthetic/visual resources. The proposed project would alter the visual landscape of the project study area by adding the proposed streetcar system, which would include streetcar vehicles, overhead contact systems, and platforms, all of which would be visible to viewer groups in the project study area. These issues will be further evaluated in the EIR/EA.

B. Agriculture and Forestry Resources

An initial screening determined that the proposed project would cause no impact or less-than-significant impacts. (See Appendix A.)

C. Air Quality

The project is located in the South Coast Air Basin (Basin), within the South Coast Air Quality Management District (SCAQMD). The SCAQMD has established standards for air quality constituents generated by construction and by operational activities for such pollutants as ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and particulate matter (PM). The SCAQMD maintains an extensive air quality monitoring network to measure criteria pollutant concentrations throughout the Basin. The Basin is designated a severe non-attainment area for O_3, a serious non-attainment area for particulate matter less than 10 microns in size (PM_{10}), and a non-attainment area for particulate matter less than 2.5 microns in size ($PM_{2.5}$). The Basin is a maintenance area for CO and nitrogen dioxide (NO_2) and is in attainment for SO_2.

During construction of the proposed project, emissions may be generated by grading activities, construction workers traveling to and from the project site, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment. Construction emissions would be short-term in nature and would be limited only to the time period when construction activity is taking place. Due to the nature of the project, construction emissions are anticipated to be below SCAQMD thresholds. However, an evaluation is needed to determine if construction related emissions are potentially significant. This issue will be evaluated further in the EIR/EA.

The streetcar system would consist of electric vehicles, and therefore, no operational emissions would result from the streetcar vehicles. However, the streetcar project would result in an increase in electrical use. Accordingly, there is a potential for increased emissions from power plants as a result of operation of the streetcar project. Although the proposed project has the potential to reduce long-term vehicle emissions by reducing traffic, depending upon proposed trip generation and changes to traffic circulation (of the proposed project or alternatives), the proposed project may increase vehicular traffic in the vicinity of the project site. These issues will be further evaluated in the EIR/EA.

D. Biological Resources

The California Department of Fish and Game (CDFG), *California Natural Diversity Database* lists 19 occurrences of species that are federally and/or state listed as endangered or threatened, or a special-status animal or plant species within the Los Angeles topographic quadrangle, as follows:

Species	**Status**	**Comments**
Burrowing owl (*Athene cunicularia*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered (Federal and State)	No habitat on site
Bank Swallow (*Riparia riparia*)	Threatened (State)	No habitat on site
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered (Federal and State)	No habitat on site
Hoary bat (*Lasiurus cinereus*)	None	No habitat on site
Western mastiff bat (*Eumops perotis californicus*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Big free-tailed bat (*Nyctinomops macrotis*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
American badger (*Taxidea taxus*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Coast horned lizard (*Phrynosoma blainvillii*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Walnut Forest	None	No habitat on site
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	Presumed extinct	No habitat on site
Greata's aster (*Symphyotrichum greatae*)	Rare, threatened, or endangered	No habitat on site
Robinson's pepper-grass (*Lepidium virginicum* var. *Robinsonii*)	Rare, threatened, or endangered	No habitat on site
Davidson's saltscale (*Atriplex serenana* var. *Davidsonii*)	Rare, threatened, or endangered	No habitat on site
Round-leaved filaree (*California macrophylla*)	Rare, threatened, or endangered	No habitat on site
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	Presumed extinct	No habitat on site
Prostrate vernal pool navarretia (*Navarretia prostrate*)	Rare, threatened, or endangered	No habitat on site
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	Rare, threatened, or endangered	No habitat on site
Plummer's mariposa-lily (*Calochortus plummerae*)	Plant of limited distribution	No habitat on site

An initial screening determined that the proposed project would cause no impact or less than significant impacts. (see Appendix A)

E. Cultural Resources

The proposed streetcar would travel through some of the oldest areas of Downtown Los Angeles, with numerous historic buildings and landmarks located along the alignment. While the proposed project would be constructed mostly within existing roadways, there is a potential for both direct and indirect impacts to historical resources as a result of construction and operation.

The project area is comprised of existing roadways and other urban land uses; accordingly, construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct traction power substations and maintenance facilities. Therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction. These issues will be evaluated further in the EIR/EA.

F. Geology and Soils

The site is not located within an Alquist-Priolo Special Studies Zone. Thus, the potential for ground surface rupture at the site is considered to be low. However, there is a designated landslide Seismic Hazard Zone adjacent to Hill Street and the northern end of the project alignment is located within a liquefaction Seismic Hazard zone.(Reference: 26)

Known regional faults that could produce significant ground shaking at the site include the Elysian Park Thrust, Hollywood, Raymond, Compton Thrust, Newport-Inglewood, Verdugo, Santa Monica, Sierra Madre, and Whittier Faults, among others. The closest of these are the Elysian Park Thrust, Hollywood, and Raymond Faults; these faults have surface projections of potential rupture area located at distances of approximately one mile, four miles, and four miles from the site, respectively. Given that the project is located in a seismically active region, there is a potential to expose people and structures to risks of loss, injury, or death. In addition, project construction would involve excavation exposing soils to wind or water which may result in soil erosion or loss of topsoil. In general, construction would comply with applicable building codes and requirements pertaining to seismic and soil safety. These issues will be evaluated further in the EIR/EA.

G. Greenhouse Gas Emissions

SCAQMD has recommended a greenhouse gas significance threshold of 10,000 metric tons per year of carbon dioxide equivalent (CO_2) for assessing the significance of a proposed project's potential GHG emissions. Greenhouse gas emissions may be generated by grading activities, construction workers traveling to and from the project site, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment. Construction emissions would be short-term in nature and would be limited only to the time period when construction activity is taking place. An evaluation is needed to determine if construction-related emissions are potentially significant. This issue will be evaluated further in the EIR/EA. Operation would also result in an increase in electrical usage which would generate GHG emissions. The proposed project would also change traffic circulation in the Downtown area, which may result in increased congestion in some locations. This issue will be further evaluated in the EIR/EA.

H. Hazards and Hazardous Materials

Construction activities would be short-term and limited in nature and may involve limited transport, storage, use, or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated. According to the Department of Toxic Substances Control, EnviroStor database, there are five known cleanup sites within the vicinity of the proposed project including two sites operating with a tiered permit for toxic substance treatment adjacent to the project site. If unknown contamination were identified during project construction or a spill were to occur during construction, agencies with jurisdiction would be notified and immediate measures would be taken to ensure the health and safety of the public and workers and to protect the environment. Any excavation, treatment, and/or disposal of contaminated soils would be conducted to the satisfaction of the applicable regulatory agencies, which could include the Los Angeles Fire Department (LAFD), Los Angeles County Fire Department (LACoFD), Los Angeles Regional Water Quality Control Board (LARWQCB) and/or the California Department of Toxic Substances Control (DTSC). Adherence to regulations set forth by local, state, and federal regulatory agencies would reduce the potential for hazardous materials impacts. Operation of the proposed project is not anticipated to involve the routine handling or transport of hazardous materials or waste; however, routine use of fuels, lubricating fluids, and solvents is likely as part of routine maintenance of the streetcar fleet. These issues will be further evaluated in the EIR/EA.

I. Hydrology and Water Quality

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

J. Land Use and Planning

The project corridor is within the Central City Community Plan area. The land use designations of the properties adjacent to the proposed corridor are composed primarily of high density residential, public facilities, and commercial land uses, with numerous office buildings, regional center commercial, surface parking lots, and retail shops. The zoning designations for the properties adjacent to the proposed corridor include commercial (C5, C2), open space (OS-1XL), multiple dwelling zone (R5), and public facilities (PF) designations. The proposed project would include construction of a maintenance facility. Three potential sites have been identified. These sites contain commercial land uses. Accordingly, the proposed project would result in a potential change in land use. The proposed improvements are not anticipated to be inconsistent with existing land use policies. Nonetheless, impacts related to the change in land use and consistency with existing land use policies and zoning will be further addressed in the EIR/EA.

K. Mineral Resources

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

L. Noise

Noise within the vicinity of the project is dominated by traffic noise on Downtown Los Angeles streets. Noise levels in the vicinity of the project would increase during the construction phase. Should construction occur during nighttime hours, this impact could be potentially significant. Analysis of the proposed project's consistency with local noise ordinances and guidelines based on existing land uses within and surrounding the project corridor will be completed. This issue will be further evaluated in the EIR/EA.

M. Population and Housing

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

N. Public Services

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

O. Recreation

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

P. Transportation/Traffic

Traffic impacts, if any, would be primarily due to changes in circulation patterns or conflicts between streetcars and vehicles, bicyclists or pedestrians. These issues, as well as consistency with the Los Angeles County Congestion Management Program, will be further evaluated in the EIR/EA.

Q. Utilities and Service Systems

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

R. Mandatory Findings of Significance

Based on the foregoing, it has been determined that:

There is a potential for both direct and indirect impacts to historical resources as a result of construction and operation of the project. Potential impacts associated with the proposed project would not substantially affect the habitat of a wildlife species, cause a species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, affect a rare or endangered species. Construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct associated traction power substations and maintenance facilities to support the project; therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction that may have the potential to eliminate important examples of history or prehistory. These issues will be evaluated further in the EIR/EA.

The proposed project would be constructed primarily within the existing roadway right-of-way. One of the proposed project's objectives is to encourage revitalization of the area. The proposed project does not involve the construction of habitable structures or the conversion of large tracts of undisturbed land. However, the proposed project could increase traffic congestion and result in increased motor vehicle pollutant emissions. The cumulative impacts of the proposed project will be analyzed further in the EIR/EA

The proposed project has the potential to degrade the quality of the environment during construction and operation with regard to several resource areas as indicated in Section IV of the Initial Study. The project's potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals will be further evaluated in the EIR/EA.

Implementation of the proposed project would involve mostly construction impacts, which would be temporary. After construction, there could be operational impacts from the proposed project. This topic will be analyzed further in the EIR/EA.

V. MITIGATION MEASURES

Any applicable mitigation measures are to be identified in the EIR/EA.

VI. NAME OF PREPARER

ICF International

Lee Lisecki, Project Director

Paulette Franco, Project Manager

Namrata Cariapa, Deputy Project Manager

Peter Feldman, Environmental Analyst

VII. DETERMINATION - RECOMMENDED ENVIRONMENTAL DOCUMENTATION

A. Summary

As described in this Initial Study, the environmental factors listed below would be potentially affected by the proposed project and will be further evaluated in the EIR/EA.

- Aesthetics
- Air Quality
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise and Vibration
- Transportation/Traffic

B. Recommended Environmental Documentation

On the basis of this initial evaluation:

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. .

Prepared By: Namrata Cariapa

Approved By: Gary Lee Moore, P.E.
City Engineer

By: James E Doty
Jim Doty
Environmental Affairs Officer
Environmental Management Group

APPENDICES

A. Environmental Screening Checklist

VIII. REFERENCES:

The following sources were used in the preparation of this document. Sources not available via the internet are available by appointment for review at the offices of the Bureau of Engineering, 650 South Spring Street, Suite 500, Los Angeles.

1. American Public Works Assoc. S. California Chpt. *Standard Specifications for Public Works Construction*. [Std Specs]

2. American Public Works Assoc. S. California Chpt. *Work Area Traffic Control Handbook*. [WATCH]

3. California Building Standards Commission, 1994. *Uniform Building Code*, [California Code of Regulations, Title 24, Part 2]. Table 18-1-B. {UBC]

4. California Dept. of Conservation, 2010. Farmland Mapping and Monitoring Program, Los Angeles County Important Farmland. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/los10.pdf

5. California Dept. of Conservation, Div. of Mines and Geology. *Geologic Map of California: Los Angeles Sheet*. [Geol Map LA]

6. California Dept. of Conservation, Div. of Mines and Geology, Special Publication 42, *Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Map.* Revised 1997 and Supplemented 1999. [CDC 42] Available online at http://www.consrv.ca.gov/CGS/rghm/ap/index.htm

7. California Dept. of Conservation, Div. of Land Resource Protection, Farmland Mapping and Monitoring Program. Important Farmland in California, January 2009. [Farmland Map] Available online at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2006/fmmp2006_08_11.pdf

8. California Dept. of Fish and Game. *California Natural Diversity Database*. [CNDDB] Available online at www.dfg.ca.gov/whdab/cnddb.htm

9. California Dept. of Fish and Game. *Biogeographic Information & Observation Database*. Available online at http://bios.dfg.ca.gov/ [BIOS]

10. California Dept. of Fish and Game. *Laws and Regulations Directing Environmental Review and Species Take Programs.* Available online at http://www.dfg.ca.gov/wildlife/nongame/regcode.html

11. California Dept. of Parks and Recreation, Office of Historic Preservation. *California Historical Resources Information System.* South Central Coastal Information Center. [CHRIS]

12. California Dept. of Toxic Substances Control. *EnviroStor Database*. [EnviroStor] Available online at http://www.envirostor.dtsc.ca.gov/public/default.asp

13. California Secretary for Resources. *Guidelines for Implementation of the California Environmental Quality Ac*t. Title 14. California Code of Regulations. Chapter 3. [CEQA Guidelines] Available online at http://www.califaep.org

14. California State Water Resources Control Board, *Geotracker Database*. Available online at http://geotracker.swrcb.ca.gov.

15. City of Los Angeles, City Council. *Municipal Code*. [LAMC] Available online at http://www.amlegal.com/los_angeles_ca/

16. City of Los Angeles, City Council. *Protected Tree Ordinance*. Los Angeles Municipal Code. Section 1. Subdivision 12 of Subsection A of Section 12.21. [Tree Ord.] Available online at http://www.amlegal.com/los_angeles_ca/

17. City of Los Angeles, Dept. of City Planning. *General Plan*. Including community plans and technical elements. [General Plan] Available online at http://planning.lacity.org/

18. City of Los Angeles. Dept. of City Planning. General Plan. Safety Element. Inundation and Tsunami Hazard Areas map (Exhibit G) (adopted by City Council November 26, 1996) [Inundation Map] Available online at http://planning.lacity.org/

19. City of Los Angeles. Dept. of City Planning. General Plan. Safety Element. Alquist-Priolo Special Study Zones & Fault Rupture Study Areas map (Exhibit A) (adopted by City Council November 26, 1996) [Inundation Map] Available online at http://planning.lacity.org/

20. City of Los Angeles, Dept. of City Planning. *Zoning Information and Map Access System (ZIMAS)*. Available online at http://zimas.ci.la.ca.us.

21. City of Los Angeles, Dept. of Environmental Affairs. *GREEN LA. An Action Plan to Lead the Nation in Fighting Global Warming*. May 2007. [GREEN LA] Available online at http://www.ci.la.ca.us/EAD/pdf/GreenLA_CAP_2007.pdf

22. City of Los Angeles, Dept. of Environmental Affairs. *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles*. 2006. [Thresholds] Available online at http://www.ci.la.ca.us/EAD/programs/thresholdsguide.htm

23. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Additions and Amendments to the 2006 Edition and 2008 Cumulative Supplement of the Standard Specifications for Public Works Construction*. Available online at *http://eng.lacity.org/techdocs/speclibrary/index.htm*

24. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Standard Plans*. [Std Plans] Available online at http://eng.lacity.org/techdocs/stdplans/

25. City of Los Angeles, Dept. of Public Works. *Tree Removal Mitigation Agreement Between the Bureaus of Engineering and Street Maintenance*. Adopted by the Board of Public Works October 15, 1990. [BOE/BSS Tree Policy]

26. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *NavigateLA*. Available online at http://boemaps.eng.ci.la.ca.us.

27. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Policies for the Installation and Preservation of Landscaping and Trees on Public Property*. Special Order SO18-0372. Adopted by City Council September 21, 1971. [Tree Policy] Available online at http://eng.lacity.org/techdocs/sporders/index.cfm?dsp_year=1972

28. City of Los Angeles, Dept. of Recreation and Parks. *Urban Forest Program – Revised October 2004.* Available online at http://www.laparks.org/dos/forest/urbanforestprogram.htm

29. County of Los Angeles Department of Public Works, *2007 Annual Report on the Countywide Siting Summary Plan and Countywide Siting Element,* June 2008. Available online at http://dpw.lacounty.gov/swims/default.asp

30. Dibblee, Thomas W. Jr., *Geologic Map of the Hollywood & Burbank Quadrangle.*

31. Los Angeles County Metropolitan Transit Authority, 2012. *Restoration of Historic Streetcar Service in Downtown Los Angeles, Final Alternatives Analysis (AA),* January 12, 2012.

32. South Coast Air Quality Management District, 1993. *CEQA Air Quality Handbook*. [AQMD Handbook]

33. U.S. Dept. Interior Fish & Wildlife Service. *National Wetlands Inventory*. Overlays for U.S. Dept. Interior Geological Survey. 7.5-minute Map Series (Topographic). [Wetlands Map]

34. U.S. Dept. Interior Geological Survey. *7.5-minute Map Series* (Topographic). [USGS Quad]

35. U.S. Federal Emergency Management Agency. *Flood Insurance Rate Maps*. Community Panel number 060137 00__ C. [FIRM] Available online at http://www.cityofla.org/

36. Upper Los Angeles River Area Watermaster, Spring 1990. *Upper Los Angeles River Area Groundwater Contour Map*. [Groundwater Map]

APPENDIX A

ENVIRONMENTAL SCREENING CHECKLIST

A brief explanation is provided for all answers except "No Impact" answers that are adequately supported by the information sources cited following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
1. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project introduces incompatible visual elements within a field of view containing a scenic vista or substantially alters a view of a scenic vista. Reference: 17 (Thresholds A.1 & A.2)

Explanation: There are no scenic vistas on or in near proximity to the project site.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐

Standard: A significant impact may occur where scenic resources within a state scenic highway would be damaged or removed as a result of the proposed project. Reference: 17 (Thresholds A.1 & E.3), 17(General Plan)

Explanation: Refer to Section IV.A of the Initial Study.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project introduces incompatible visual elements to the project site or visual elements that would be incompatible with the character of the area surrounding the project site. Reference: 17 (Thresholds A.1 and A.3)

Explanation: Refer to Section IV.A of the Initial Study.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Standard: A significant impact would occur if the proposed project caused a substantial increase in ambient illumination levels beyond the property line or caused new lighting to spill-over onto light-sensitive land uses such as residential, some commercial and institutional uses that require minimum illumination for proper function, and natural areas. Reference: 17 (Thresholds A.4)

Explanation: New lighting elements would be limited to the minimum levels necessary for safety and would be similar to lighting levels in the project area. The new light fixtures would be designed to prevent spillover. There are no nearby natural areas. Therefore, this will not be further evaluated in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
2. AGRICULTURE AND FOREST RESOURCES – Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
Standard: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Reference: 13) A significant impact may occur if the proposed project were to result in the conversion of state-designated agricultural land from agricultural use to another non-agricultural use. Reference: 4				
Explanation: According to the Farmland Mapping & Monitoring Program mapping for Los Angeles County (2010), there is no designated prime farmland, unique farmland, or farmland of statewide importance in the vicinity of the project. Reference: 4				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were to result in the conversion of land zoned for agricultural use, or indicated under a Williamson Act contract, from agricultural use to another non-agricultural use.				
Explanation: The project site and adjacent parcels are not zoned for agricultural uses and not subject to a Williamson Act contract.				
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
Standard: In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Reference: 7)				
Explanation: There is no forestland, timberland, or timberland zoned Timberland Production on or near the project site.				
d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
Standard: In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Reference:				
Explanation: There is no forestland on or near the project site.				

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland, to non-agricultural use?	☐	☐	☐	☒

Standard: A significant impact may occur if a project results in the conversion of farmland to another non-agricultural use.

Explanation: Refer to discussion under 2 (a) and 2 (b) above.

3. AIR QUALITY – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐

Standard: A significant impact may occur if the project was inconsistent with or obstruct the implementation of the Air Quality Element of the City's General Plan or the Air Quality Management Plan (AQMP). Reference: 17(Thresholds B.1 to B.3), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project violated any SCAQMD air quality standard. The SCAQMD has set thresholds of significance for reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide ($S0_2$), and particulate matter (PM10) emissions resulting from construction and operation in the South Coast Air Basin. Reference: 17(Thresholds B.1, B.2), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project would result in a cumulatively considerable net increase of a criteria pollutant for which the South Coast Air Basin exceeds federal and state ambient air quality standards and has been designated as an area of non-attainment by the USEPA and/or California Air Resources Board. The South Coast Air Basin is a non-attainment area for carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM10), and fine particulate matter (PM2.5). Reference: Reference: 17(Thresholds B.1, B.2), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐

Standard: A significant impact may occur if construction or operation of the proposed project generated pollutant concentrations to a degree that would significantly affect sensitive receptors. Reference: 17 (Thresholds B.1 to B.3)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Standard: During construction, sources of odor are diesel emissions from construction equipment and volatile organic compounds from sealant applications or paving activities. However, these odors would be temporary and localized. Nonetheless, applicable best management practices such as those in SCAQMD Rule 431 (Diesel Equipment) would, in addition to minimizing air quality impacts, also help minimize potential construction odors. Reference: 17 (Thresholds B.1 & B.2)

Explanation: Refer to Section IV.C of the Initial Study.

4. BIOLOGICAL RESOURCES – Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project would remove or modify habitat for any species identified or designated as a candidate, sensitive, or special status species in local or regional plans, policies, or regulation, or by the state or federal regulatory agencies cited. Reference: 17 (Thresholds C)

Explanation: As described in the Initial Study, Section IV.D, the Los Angeles Quadrangle contains 19 occurrences of species that are federally and/or state listed as endangered or threatened. The project is located in a highly urbanized part of the City of Los Angeles. The existing project corridor is sparsely landscaped with street trees lining the roadways along the project alignment. As part of the project, some of this landscaping would be removed. A landscape plan would be prepared and presented to the Department of City Planning for approval. The project site is not suitable habitat for any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. In addition, there are no known locally designated natural communities on the project site or in the project vicinity. The project corridor contains mature trees that have the potential to be used for nesting by migratory birds. However, the proposed project would comply with the Migratory Bird Treaty Act (MBTA), which regulates vegetation removal during the nesting season, to ensure that significant impacts to nesting migratory birds would be avoided. Specifically, in accordance with the MBTA, efforts would be made to schedule the removal of mature trees between September and February to avoid the nesting season.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

Standard: A significant impact may occur if riparian habitat or any other sensitive natural community were to be adversely modified. Reference: 17(Thresholds C)

Explanation: The proposed project would not result in the direct removal, filling or hydrological interruption of a federally protected wetland as defined by Section 404 of the Clean Water Act. Due to the highly urbanized surroundings, there are no wildlife corridors or native wildlife nursery sites in the project vicinity. See explanation for 4(a).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

Standard: A significant impact may occur if federally protected wetlands, as defined by Section 404 of the Clean Water Act would be modified or removed. Reference: 17(Thresholds C), 33(Nat. Wetlands Map)

Explanation: There are no wetlands within or adjacent to the project site.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project interferes or removes access to a migratory wildlife corridor or impedes the use of native wildlife nursery sites. Reference: 9(BIOS), 17(Thresholds C)

Explanation: No sensitive habitats were identified within the project site or vicinity. The project area is urbanized and heavily used and does not provide significant habitat for wildlife. However, the project corridor contains mature trees that have the potential to be used for nesting by migratory birds. As previously discussed, the proposed project would comply with the MBTA, which regulates vegetation removal during the nesting season, to ensure that significant impacts to nesting migratory birds would be avoided. Specifically, in accordance with the MBTA, efforts would be made to schedule the removal of mature trees between September and February to avoid the nesting season. Therefore, the project is not expected to have an impact on habitat suitable for wildlife movement or migration.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project would cause an impact that is inconsistent with local regulations pertaining to biological resources. Reference: 9 (CDFG), 27(Tree Policy), 28(Urban Forest Program), 25(PW Tree Policy), 17(Thresholds C)

Explanation: The City of Los Angeles has a Native Tree Protection Ordinance that protects native oak species, black walnut, California bay, and California sycamore that measure four inches or more in cumulative diameter, at four and one-half feet above the ground level at the base of the tree. The project corridor includes areas of grass and trees that may potentially provide habitat for sensitive species, especially nesting birds. The proposed project would remove both young and mature trees, including several protected California sycamores and heritage trees. Protected and heritage tree removal will follow the Recreation and Parks Tree Removal Procedure.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project would be inconsistent with mapping or policies in any conservation plans of the cited type. Reference: 8(CNDDB), 17(Thresholds C)

Explanation: There are no known locally designated natural communities on the site or in the project vicinity; therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Accordingly, the proposed project would not result in significant impacts to biological resources.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
5. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?	☒	☐	☐	☐
Standard: A significant impact may result if the proposed project caused a substantial adverse change to the significance of a historical resource (as identified above). Reference: 13(Guidelines 15064.5), 17 (Thresholds D.3), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?	☒	☐	☐	☐
Standard: A significant impact may occur if the proposed project were to cause a substantial adverse change in the significance of an archaeological resource that falls under the CEQA Guidelines section cited above. Reference: 13(Guidelines 15064.5), 17 (Thresholds D.2), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb unique paleontological resources or unique geologic features. Reference: 13(Guidelines 15064.5), 17(Thresholds D.1), 30(Diblee), 11(CHRIS), 20(ZIMAS)				
Explanation: Refer to Section IV.E of the Initial Study.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb interred human remains. Reference: 13(Guidelines 15064.5), 17(Thresholds D.2), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
6. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☒
Standard: A significant impact may occur if the proposed project were located within a state-designated Alquist-Priolo Zone or other designated fault zone and appropriate building practices were not followed. References: 6(CDC Publ. 42), 17(Thresholds E.1)				
Explanation: Refer to Section IV.F of the Initial Study.				

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
ii) Strong seismic ground shaking?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project design did not comply with building code requirements intended to protect people from hazards associated with strong seismic ground shaking. Reference: 1917(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project would be located in an area identified as having a high risk of liquefaction and appropriate design measures required within such designated areas were not incorporated into the project. Reference:26, 17(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

iv) Landslides?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were located in a hillside area with soil conditions that would suggest high potential for sliding and appropriate design measures were not implemented. Reference: 26, 17(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

a) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were to expose large areas to the erosion effects of wind or water for a prolonged period of time. Reference: 17(Thresholds E.2)

Explanation: Refer to Section IV.F of the Initial Study.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were built in an unstable area or that would become unstable as a result of improper site preparation or design features to provide adequate foundations for project buildings, thus posing a hazard to life and property. Reference: 26, 17(Thresholds E.2)

Explanation: See 6 (a) (iii) and (iv) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐

Explanation: Prior to any construction and as a standard practice, a geotechnical evaluation would be prepared which would prescribe methods, techniques, and specifications for: site preparation, treatment of undocumented fill and/or alluvial soils, fill placement on sloping ground, fill characteristics, fill placement and compactions, temporary excavations and shoring, permanent slopes, treatment of expansive soils, and treatment of corrosive soils. Design and construction of the proposed project would conform to recommendations in the geotechnical evaluation; therefore, impacts from potentially expansive soil would not be significant.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were built on soils that were incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system, and such a system was proposed. Reference: 17(Thresholds E.3)

Explanation: The project area is served by the City's wastewater collection, conveyance, and treatment systems. Therefore, no septic tanks or alternative wastewater disposal systems would be used during project operation.

Reference: 26(NavigateLA wye map)

7. GREENHOUSE GAS EMISSIONS – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐

Explanation: Refer to Section IV.G of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Explanation: Refer to Section IV.G of the Initial Study.

8. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project involved the use or disposal of hazardous materials as part of its routine operations and would have the potential to generate toxic or otherwise hazardous emissions. Reference: 17(Thresholds F.1, F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project involved a risk of accidental explosion or utilized substantial amounts of hazardous materials as part of its routine operations that could potentially pose a hazard to the public under accident or upset conditions. Reference: 14(Geotracker), 15(LAMC), 17(Thresholds F.1, F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within one-quarter mile of an existing or proposed school site and were projected to release toxic emissions that pose a hazard beyond regulatory thresholds. Reference: 17(Thresholds F.2)

Explanation: There is no school within 0.25 mile of the project. 26(NavigateLA Schools)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐

Reference: 17(Thresholds F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project site were located within a public airport land use plan area, or within two miles of a public airport, and would create a safety hazard. Reference: 17(Thresholds F.1, K.2)

Explanation: The project is not located within a public airport land use plan area, or within two miles of a public airport. Reference: 20(ZIMAS)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Standard: A significant impact may occur if the project would result in a safety hazard for people residing or working in the project area because of its location near a private airstrip. Reference: 17(Thresholds F.1, K.2)

Explanation: No private airstrip is located within the vicinity of the project site. Reference: 26(NavigateLA)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were to substantially interfere roadway operations used in conjunction with an emergency response plan or evacuation plan or would generate sufficient traffic to create traffic congestion that would interfere with the execution of such plan. Reference: 17(Thresholds F.1, K.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in a wild land area and poses a significant fire hazard, which could affect persons or structures in the area in the event of a fire. Reference: 17(Thresholds K.2)

Explanation: The project site is not located within a wild land or a very high fire hazard severity zone. 26(NavigateLA Very High Fire Hazard Severity Zone)

9. HYDROLOGY AND WATER QUALITY – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project discharged water that did not meet the quality standards of agencies that regulate surface water quality and water discharge into storm-water drainage systems. Reference: 17(Thresholds G.2)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

Explanation: The proposed project would comply with applicable storm water management requirements for pollution prevention (for example, compliance with the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements to reduce potential water quality impacts). Short-term impacts to water quality due to construction activities would be regulated under California State Water Resources Control Board Water Quality Order No. 99-08-DWQ (General Construction Permit). Under this permit, the City of Los Angeles would implement a stormwater pollution prevention plan and Best Management Construction Practices would be implemented to ensure no significant impacts to water quality occur during construction.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

Standard: A project would normally have a significant impact on groundwater supplies if it were to result in a demonstrable and sustained reduction of groundwater recharge capacity or change the potable water levels sufficiently that it would reduce the ability of a water utility to use the groundwater basin for public water supplies or storage of imported water, reduce the yields of adjacent wells or well fields, or adversely change the rate or direction of groundwater flow. Reference: 17(Thresholds G.2, G.3)

Explanation: The proposed streetcar project would not utilize existing groundwater resources nor would it interfere with groundwater recharge. Changes to the groundwater supply are not anticipated as a result of the proposed project.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in a substantial alteration of drainage patterns that resulted in a substantial increase in erosion or siltation during construction or operation of the project. Reference: 17(Thresholds G.1, G.2)

Explanation: The proposed project would not substantially alter the existing drainage pattern of the site or area. No streams or rivers cross the proposed project route. As discussed in Comment 8 (a), the project would result in temporary soil disturbance activities during construction during which time a stormwater pollution prevention plan for the control of soil erosion and sediment runoff would be implemented. The project would be constructed in accordance with applicable requirements of the municipal code, including grading requirements.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in increased runoff volumes during construction or operation of the proposed project that would result in flooding conditions affecting the project site or nearby properties. Reference: 17(Thresholds G.1)

Explanation: The proposed project would not substantially alter the existing drainage pattern of the site or area. See Comments for 8 (a) and 8 (c) above.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒

Standard: A significant impact may occur if the volume of runoff were to increase to a level that exceeded the capacity of the storm drain system serving a project site. A significant impact may also occur if the proposed project would substantially increase the probability that polluted runoff would reach the storm drain system. Reference: 17(Thresholds G.2)

Explanation: The proposed project would not change the volume of storm water runoff. See Comment 8(a).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐

Comment: A significant impact may occur if a project included potential sources of water pollutants and have the potential to substantially degrade water quality. Reference: 17(Thresholds G.3)

Explanation: No new potential sources of pollutants that could substantially degrade water suitability are anticipated.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project placed housing within a 100-year flood zone. Reference: 17(Thresholds G.1 to G.4)

Explanation: The proposed project does not include housing.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within a 100-year flood zone and would impede or redirect flood flows. Reference: 17(Thresholds G.4)

Explanation: The project site is not located within a 100-year flood zone. Reference: 35(FIRM Panel 06037C1620F), 26(NavigateLA Flood Plains)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in an area where a dam or levee could fail, exposing people or structures to significant risk of loss, injury or death. Reference: 17(Thresholds E.1, G.3)

Explanation: The project site is not located in an area subject to this risk. Reference: 26(NavigateLA Inundation Areas)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in an area with inundation potential due to seiche, tsunami, or mudflow. Reference: 17(Thresholds E.1)

Explanation: The project site is not located in an area subject to this risk. Reference: 26(NavigateLA Tsunami Area and Landslides)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
10. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were sufficiently large or otherwise configured in such a way as to create a physical barrier within an established community. Reference: 17(Thresholds H.2)

Explanation: The proposed project would involve the construction and operation of a streetcar service that would traverse the following neighborhoods/districts from north to south: the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, and the Los Angeles Sports and Entertainment District (LASED), all of which are located within the Central City Community Plan area of the City of Los Angeles. No changes to the surrounding land uses and no barriers that would divide the community are proposed. Additionally, a goal of the proposed project is to facilitate connections between the surrounding community, private businesses, and public facilities within the different neighborhoods/districts. Therefore, implementation of the proposed project would connect communities rather than divide them. No further analysis is warranted.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project were inconsistent with the General Plan, or other applicable plan, or with the site's zoning if designated to avoid or mitigate a significant potential environmental impact. Reference: 17(Thresholds H.1, H.2)

Explanation: See discussion in Section IV. Reference: 20(ZIMAS), 17(General Plan)

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within an area governed by a habitat conservation plan or natural community conservation plan and would conflict with such plan. Reference: 17(Thresholds H.1, H.2)

Explanation: Please see the discussion for Item 4(f), above. No impact would occur.

11. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

Standard: A significant impact may occur if the project were located in an area used or available for extraction of a regionally important mineral resource, if the project converted an existing or potential present or future regionally important mineral extraction use to another use, or if a project affected access to such a site. Reference: 17(General Plan), 17(Thresholds E.4)

Explanation: The project site is not located within a Mineral Resource Zone (MRZ-2), which indicates the inclusion of known mineral deposits. As described in the Conservation Element of the City of Los Angeles General Plan, the primary mineral resources within the city are rock, gravel, oil, and sand deposits, and the only available deposit site within the city is the Tujunga alluvial fan, which is more than 10 miles from the project site. The project site is not located within an area known to contain mineral resources, and no impacts with respect to mineral resources would occur as a result of construction and operation of the proposed project. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Standard: A significant impact may occur if a project were located in an area used or available for extraction of a locally-important mineral resource and the project converted such a resource to another use or affected access to such a site. Reference: 17(General Plan), 17(Thresholds E.4)

Explanation: As discussed in Item 11(a), the proposed project site is not located within a locally important mineral resource discovery site delineated in the General Plan. Therefore, no further analysis is warranted.

12. NOISE – Would the project result in:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐

Standard: A significant impact may occur if the project generated noise levels exceeding the standards for ambient noise as established by the General Plan and Municipal Code or exposed persons to that increased level of noise. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: Noise levels in the vicinity of the project would increase during the construction phase of the proposed project. Should construction occur during nighttime hours, this impact could be potentially significant. However, the Bureau of Engineering Standard Project Specifications for public works construction are designed to comply with the City's General Plan Noise Element and related Municipal Code Noise Ordinance and, given that the proposed project would be implemented in accordance with these, significant adverse impacts to noise levels are not expected. Nonetheless, this will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	☒	☐	☐	☐

Standard: A significant impact may occur if the project were to expose persons to or generate excessive ground-borne vibration or ground-borne noise levels. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: See also comment under Section 11(a). Increased groundborne vibration or groundborne noise levels within the vicinity of the proposed project could occur during the construction phase from use of heavy equipment. These impacts would be temporary and short-term in nature and would comply with applicable noise standards.

Given the proximity of nearby noise-sensitive uses, such as residences, to the project site, operation of the proposed project alternatives has the potential to expose persons to or generate excessive groundborne vibration or noise levels. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐

Standard: A significant impact may occur if the project were to substantially and permanently increase the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

Explanation: Refer to discussion under 11 (a) above. Operation of the proposed project has the potential to increase noise as a result of streetcar vehicle operation and due to changes in traffic circulation that may increase ambient noise at nearby sensitive receptors depending upon the locations of potential traffic congestion impacts. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐

Comment: A significant impact may occur if the project were to create a substantial temporary or periodic increase in the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: Refer to discussion under Comment 11 (a) above. Construction of the proposed project would involve the use of noise-generating construction equipment, resulting in temporary and periodic increases in noise levels along the proposed project corridor. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds Section I), 26(NavigateLA)

Explanation: The project is not located within two miles of an airport. The nearest airport to the project site is Bob Hope Airport, located approximately 10 miles northwest of the site (Google Earth Pro 2012). The project site is not located within an airport land use plan or within 2 miles of an airport land use plan, public airport, or public use airport; therefore, no further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds Section I), 26(NavigateLA)

Explanation: See Item 12(e). No private airstrips are located in the project vicinity. Thus, no one residing or working in the project area would be exposed to excessive noise levels associated with a private airstrip. No further analysis is warranted.

13. POPULATION AND HOUSING – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

Standard: A significant impact may occur if population growth is induced in an area, either directly or indirectly, such that the population of the area may exceed the planned population of that area. Reference: 17(Thresholds Section J.1)

Explanation: Population density is managed by the City's land use and planning designations (see above) and building codes. The proposed project would involve the construction and operation of a streetcar service. The project would not include the construction of homes or businesses. Therefore, the proposed project would not directly increase the project area's population. The proposed project would not involve changing the City's land use and planning designations to a more intense use and, therefore, would not directly induce substantial population growth. However, an objective of the project is to encourage revitalization of the area through pedestrian friendly improvements and, therefore, the project could

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

indirectly induce business development and population growth. This indirect effect, however, is expected to be less than significant. No further analysis is warranted.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 17(Thresholds J.1 and J.2)

Explanation: The proposed project would involve the construction and operation of a streetcar system. It would not displace any existing housing. Therefore, no further analysis is warranted.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 17(Thresholds J.2)

Explanation: The proposed project would not displace any housing. No businesses or residences are proposed to be demolished or displaced by the proposed project. Therefore, no further analysis is warranted.

14. PUBLIC SERVICES –

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?	☐	☐	☒	☐

Standard: A significant impact may occur if the City of Los Angeles Fire Department (LAFD) could not adequately serve the proposed project based on response time, access, or fire hydrant/water availability. Reference: 17(Thresholds K.2)

Explanation: The project site is served by LAFD Division 1, Battalion 1 at Station No. 3, located at 108 North Fremont Avenue, approximately 0.4 miles to the west. The proposed project would not result in an increase in population and, thus, would not generate a need for new or altered fire protection facilities. The proposed project would be constructed in accordance with all applicable fire codes set forth by the state Fire Marshall and LAFD. Therefore, the proposed project would not be considered a fire hazard and would not exceed the capacity of LAFD to serve the site or other areas with existing fire protection services. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction so as to coordinate emergency response routing during construction work. Construction and operation of the proposed project would not create hazards that would increase the need for fire protection. Therefore, less-than-significant impacts would occur. No further analysis is warranted.

ii) Police protection?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project were to result in an increase in demand for police services that would exceed the capacity of the police department responsible for serving the site. Reference: 17(Thresholds K.1)

Explanation: The project site is served by LAPD's Central division, Central Community Police Station,

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

located at 251 E. 6th Street. The proposed project would not require additional police protection beyond what is currently provided. The nearest local police station would be notified, as appropriate, of traffic control plans during construction so as to coordinate emergency response routing during construction work. Construction and operation of the proposed project would not increase the need for police services. No residential, commercial, industrial, or recreational land uses are proposed as part of the project. Therefore, less-than-significant impacts would occur. No further analysis is warranted.

iii) Schools?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that could generate demand for school facilities that exceeded the capacity of the school district responsible for serving the project site. Reference: 17(Thresholds K.3)

Explanation: The proposed project does not include a housing component, and it would not directly increase employment. The proposed project would not include new housing and, therefore, would not directly increase the demand for schools in the area. However, an objective of the project is to encourage revitalization of the area and, therefore, the project could indirectly induce business development and population growth. This indirect effect on school enrollment, however, is expected to be less than significant. No further analysis is warranted.

iv) Parks?	☐	☐	☒	☐

Standard: A significant impact may occur if the recreation and park services available could not accommodate the population increase resulting from the implementation of the proposed project. Reference: 17(Thresholds K.4)

Explanation: The proposed project would not directly increase the demand for parks in the area because it would not include new residential or business development. However, a primary objective of the project is to encourage revitalization of the area, which could induce new development and indirectly increase project area populations. However, the indirect impacts on parks due to increased populations are not expected to be significant, because the increase in population would be on a regional level and would not result in substantial increase in park use in the Downtown area. . A less-than-significant impact would result from construction and operation of the proposed project. No further analysis is warranted.

v) Other public facilities?	☐	☐	☒	☐

Standard: Projects that do not result in a net increase of 75 residential units normally would not have a significant impact on public libraries. Reference: 17(Thresholds K.5)

Explanation: The project would not result in a net increase of 75 residential units or more. The proposed project would not directly increase the use of other facilities in the area because it would not include new residential or business development. However, a primary objective of the project is to encourage revitalization of the area, which could induce new development and indirectly increase project area populations. However, the increased populations are not expected to have a significant impact on other public facilities. A less-than-significant would result from construction and operation of the proposed project. No further analysis is warranted.

Issues

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

15. RECREATION –

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that may generate demand for public park facilities that exceed the capacity of existing parks. Reference: 17(Thresholds K.4)

Explanation: The proposed project would not cause a direct population increase (see Section 13 above). The proposed project would involve the construction and operation of a streetcar system. The proposed project would not directly increase the use of existing neighborhood parks or regional parks such that substantial physical deterioration of the facility would occur or be accelerated. No further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds K.4)

Explanation: The proposed project does not include or require a recreational facility. One of the goals of the proposed project is to improve connectivity to recreational facilities restaurants, and shops. The creation of connective transit corridors would facilitate access to existing facilities. No further analysis is warranted.

16. TRANSPORTATION/TRAFFIC – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersection, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project causes an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Reference: 17(Thresholds L.1 to L.4, L.8)

Explanation: The proposed project could change Downtown circulation patterns, which could result in localized traffic impacts. This issue will be addressed in the EIR/EA.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project causes a conflict with an applicable congestion management program. Reference: 17(Thresholds L.1 to L3)

Explanation: Construction of the proposed project would temporarily increase traffic due to additional trips to and from the site involving haul trucks, construction equipment, and personal vehicles. These vehicle trips are directly related to construction activities and are temporary in nature.

Please see Item 16.(a) above.

Issues

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project changed air traffic patterns, including either an increase in traffic levels or a change in location the resulted in substantial safety risks.

Explanation: The nearest airport to the project site is the Bob Hope Airport, located approximately 10 miles northwest of the site (Google Earth Pro 2012). The proposed project does not include any components that would affect air traffic. The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks. Therefore, no further analysis is warranted.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project substantially increased road hazards due to a design feature or incompatible uses. Reference: 17(Thresholds L.5)

Explanation: Introduction of the streetcar system may introduce safety hazards to pedestrians, personnel, visitors, nearby neighbors, bicyclists, or other vehicles. Driveway access and the circulation scheme for the proposed project would need to be reviewed and approved by the City of Los Angeles, Department of Transportation. The impact is considered to be potentially significant and will be addressed in the EIR/EA.

e) Result in inadequate emergency access?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in inadequate emergency access. Reference: 17(Thresholds L.5, L.8, and J2)

Explanation: The proposed project may intermittently result in diminished access for emergency vehicles during construction. However, the construction phase of the project would be temporary. The City will implement traffic control plans in areas where construction is occurring to accommodate first responders and emergency vehicles so that emergency access is not substantially impaired. Temporary traffic control elements would be subject to review, including safety, and approval by Los Angeles Department of Transportation. With compliance to existing regulations, the potential impact is considered to be less than significant. Therefore, no further analysis is warranted.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project conflicts with adopted policies, plans, or programs supporting alternative transportation. Reference 17(Thresholds L.6)

Explanation: The proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation, including the City of Los Angeles Bicycle Plan. Therefore, no impact would occur.

17. UTILITIES AND SERVICE SYSTEMS – Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project exceeds wastewater treatment requirements of the local regulatory governing agency. Reference: 17(Thresholds M.2)

Issues

Explanation: The proposed project would not generate additional wastewater. The proposed project would involve the construction of a streetcar system. No uses or activities that would generate wastewater requiring wastewater treatment are proposed as part of the project. The proposed project would have no impact on the wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project resulted in the need for new construction or expansion of water or wastewater treatment facilities that could result in an adverse environmental effect that could not be mitigated. Reference: 17(Thresholds G.1, M.1 and M.2)

Explanation: The proposed project would not use additional water or generate additional wastewater that would exceed existing capacity. The proposed project would involve the construction of a streetcar system. The proposed project would not use water in amounts that would have a significant impact on water treatment facilities. A minimal amount of additional water would be used for irrigation of new landscaping, as well as cleaning, servicing, and maintenance of the streetcar vehicles. The proposed project would not include new or expanded water or wastewater treatment facilities. In addition, the project would not require the construction or expansion of water or wastewater treatment facilities. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Standard: A significant impact may occur if the volume of storm water runoff from the proposed project increases to a level exceeding the capacity of the storm drain system serving the project site. Reference: 17(Thresholds G.1 and M.2)

Explanation: The storm water facilities in the area are adequate to serve the proposed project. The proposed project would not increase the volume of storm water runoff. The project site is in an urbanized area that is adequately served by the existing storm drain system. Operation of the proposed project alternatives would not create substantial amounts of additional runoff that would require construction of new stormwater drainage facilities or the expansion of existing facilities. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project's water demands would exceed the existing water supplies that serve the site. Reference: 17(Thresholds M.1)

Explanation: The City of Los Angeles Department of Water and Power provides potable water to the project area and vicinity. Other than temporary construction water use, the proposed project would not include new water uses. Construction and operation of the proposed project would not require new or expanded entitlements. The proposed project would involve the construction and operation of streetcar service and would not involve the construction of water wells or adversely affect ground water supply. The proposed project would not use any water, except for irrigation of landscaping improvements, and cleaning, servicing, maintenance of the streetcar vehicles, which would be a minimal amount. As a result, the minimal increase in demand for water would not exceed existing water supplies. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

Comment: A significant impact may occur if the proposed project would increase wastewater generation to such a degree that the capacity of facilities currently serving the project site would be exceeded. Reference:

Explanation: See 17 (a) above. Construction and operation of the proposed project would not directly increase the demand for wastewater treatment facilities in the area. The proposed project would not include uses or activities that would generate wastewater requiring treatment. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐

Comment: A significant impact may occur if the proposed project were to increase solid waste generation to a degree that existing and projected landfill capacities would be insufficient to accommodate the additional waste. Reference: 17(Thresholds M.3), 29(Countywide Siting Report)

Explanation: The City standard for public works projects requires demolition debris to be recycled where feasible; therefore, impacts associated with construction debris would be less than significant. Operation of the proposed project may generate minor amounts of solid waste during cleaning, servicing, and maintenance of the streetcar vehicles, but those small amounts would be recycled or disposed of in existing landfills. Adequate landfill capacity exists to accommodate project-generated waste. If disposal would occur at an off-site location, it would be disposed of in accordance with the City of Los Angeles' regulations. Therefore, through compliance with the applicable regulations, impacts on solid waste disposal needs would be less than significant as a result of the proposed project and no further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Comment: A significant impact may occur if the proposed project would generate solid waste that was in excess of or was not disposed of in accordance with applicable regulations. Reference: 17(Thresholds M.3), 29(Countywide Siting Report)

Explanation: The project will be designed, constructed and operated in accordance with all applicable laws, regulations, ordinances, and formally adopted City standards. Disposal of all solid waste generated by the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐

Explanation: While the proposed project is a transportation project that would be constructed mostly within existing roadways, there is a potential for both direct and indirect impacts to historical resources as a result of construction and operation of the project. Potential impacts associated with the proposed project would not substantially affect the habitat of a wildlife species, cause a species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, affect a rare or endangered species. Construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct associated traction power substations and maintenance facilities to support the project; therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction that may have the potential to eliminate important examples of history or prehistory. These issues will be evaluated further in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐

Explanation: As discussed throughout this Initial Study, the proposed project has the potential to result in environmental impacts during construction and operation in several resource categories. In addition, other related projects in the vicinity of the streetcar alignment may also result in environmental impacts. As such, there is a potential for the proposed project to combine with the other related projects to result in a cumulative impact. Therefore, the cumulative impacts of the proposed project and related projects will be analyzed further in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☒	☐	☐	☐

Explanation: The proposed project has the potential to degrade the quality of the environment during construction and operation with regard to several resource areas as indicated in Section IV of the Initial Study. The project's potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals will be further evaluated in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Explanation: Implementation of the proposed project would involve mostly construction impacts, which would be temporary. After construction, there could be operational impacts from the proposed project. This topic will be analyzed further in the EIR/EA.

Appendix B
Restoration of Historic Streetcar Service in Downtown Los Angeles—Scoping Summary Report

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

SCOPING SUMMARY REPORT

PREPARED FOR:

City of Los Angeles Department of Public Works, Bureau of Engineering
City of Los Angeles Department of Transportation
U.S. Department of Transportation, Federal Transit Administration

PREPARED BY:

ICF International
811 West 7th Street, Suite 800
Los Angeles, California 90017
Contact: Paulette Franco
(213) 627-5376

April 2013

ICF International. March 2013. Restoration of Historic Streetcar Service in Downtown Los Angeles. Scoping Summary Report. (ICF Project #00646.11.) Los Angeles, CA. Prepared for City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

page

1. Introduction 1
1.1 Study Background 1
2. Summary of Purpose and Need 6
2.1 Project Participants 7
2.2 Report Purpose and Structure 7
3. Alternative Analysis Outreach Activities 7
3.1 Preparation 8
3.2 Summary of Submitted Comments 8
4. Draft EIR/EA Scoping Process 10
4.1 Initiation of Scoping (Notice of Preparation) 11
4.2 Public Scoping 11
4.2.1 Notice of Preparation and Initial Study Mailings 11
4.2.2 Notification Database 11
4.2.3 Project Information Telephone Line 12
4.2.4 Project Email 12
4.2.5 Noticing 12
4.2.6 Public Scoping Meetings 14
4.2.7 Speaker Cards and Comments Sheets 16
4.2.8 Public Meeting Comments 16
4.3 Summary of Scoping Comments 16
4.3.1 Summary of Agency Comments 16
4.3.2 Summary of Public Comments 17

Appendices

Appendix A: Alternatives Analysis Outreach
A1. Inter-Agency Meeting Attendees
A2. Early Scoping Meeting Mailer

Appendix B: Noticing
B1. Notice of Preparation
B2. Agency List
B3. Take One
B4. Electronic Meeting Notice
B5. Newspaper Advertisement

Appendix C: Public Meetings
C1. Display Boards
C2. Slide Presentation
C3. Sign-in Sheet

Appendix D: Scoping Comments
D1. Written Comments
D2. Comment Database

Figures

page

Figure 1 Regional Location map 3
Figure 2 Locally Preferred Alternative 4
Figure 3 9th Street Alternative 5

Acronyms

AA	Alternatives Analysis
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Los Angeles
CPUC	California Public Utilities Commission
CRA/LA	Los Angeles Community Redevelopment Agency
DLANC	Downtown Los Angeles Neighborhood Council
EA	environmental assessment
EIR	environmental impact report
FTA	Federal Transit Administration
FTA	Federal Transit Agency
LABOE	Los Angeles Department of Public Works, Bureau of Engineering
LADOT	Los Angeles Department of Transportation
LASI	Los Angeles Streetcar Incorporated
LPA	Locally Preferred Alternative
Metro	Los Angeles County Metropolitan Transit Authority
MSF	maintenance and storage facility
NEPA	National Environmental Policy Act
NOP	notice of preparation
TAC	Technical Agency Committee

This page intentionally left blank.

1. INTRODUCTION

1.1. STUDY BACKGROUND

The Los Angeles Department of Public Works, Bureau of Engineering (LABOE), as the lead agency, will prepare an Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the Restoration of Historic Streetcar Service in Downtown Los Angeles. In addition, the Federal Transit Administration (FTA) and the Los Angeles Department of Transportation (LADOT) are the joint lead agencies under the National Environmental Policy Act (NEPA) and will prepare an environmental assessment (EA) in accordance with NEPA. Scoping supports the environmental review process requirements and allows the public, agencies, and interested parties to learn about and provide comments regarding the scope and content of the EIR/EA.

This Scoping Summary Report summarizes the scoping process and the comments that LABOE received during the scoping period. These comments are considered when identifying the range of alternatives and potential environmental issues to be evaluated in the EIR/EA.

The Los Angeles County Metropolitan Transportation Authority (Metro) assisted the City of Los Angeles (City) with the Restoration of Historic Streetcar Service in Downtown Los Angeles Alternatives Analysis (AA), which was finalized in January 2012. This document analyzed a multitude of potential alignments and alignment combinations in its initial screening process and developed these concepts into seven feasible alternatives that were based on a variety of factors, including overall cost, design constraints, span of service area, connections to transit and other modes of transportation, environmental impacts, and economic development opportunities. From this initial screening process, a Final Screening Analysis was carried out to select a Locally Preferred Alternative (LPA), which was designated by the Los Angeles Community Redevelopment Agency (CRA/LA) Board of Commissioners and the Los Angeles City Council. Of the seven alternatives analyzed in the Final Screening Analysis, the LPA was selected based upon the following reasons:

- The LPA would connect major districts, destinations, and activity centers.
- The LPA would improve transit coverage and circulation.
- The LPA was tied for the highest combined average of daily boardings and boardings per mile.
- The LPA had the lowest capital cost.
- The LPA was tied for the lowest operation and maintenance cost.
- The LPA would revitalize isolated, economically depressed areas.
- The LPA would encourage historic restoration and transit oriented development.
- The LPA had the third-lowest cost per user.
- The LPA had the fewest number of potential circulation, design, and environmental issues.

- The LPA received a high level of community support.
- The LPA would enhance mobility and transit circulation in Downtown Los Angeles by alleviating traffic and reduce parking demand.
- The LPA had the most potential for generating revenue through a property assessment.

The proposed project, which would be located in downtown Los Angeles, would travel through the following neighborhoods/districts (from north to south): Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, and Fashion District, all of which are located within the Central City Community Plan area of the City of Los Angeles. The streetcar system would run along a 3.8-mile loop within existing traffic lanes and consist of a fleet of electric-powered vehicles on a track that allows mixed-flow operations of streetcar vehicles and automobiles. The proposed project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment uses. Power to the streetcar vehicles would be provided via five traction power substations and an overhead contact system. Streetcar stops would be located approximately every block in the north/south direction and every other block in the east/west direction. One of three potential maintenance facility sites would be developed as part of the project. Figure 1 depicts the regional location of the proposed project.

Two build alternatives are under consideration for the proposed project: the Locally Preferred Alternative (Figure 2) and the 9th Street Alternative (Figure 3).

Locally Preferred Alternative – The proposed project would construct and implement streetcar service along a one-way loop that would run from 1st Street on the north, through downtown Los Angeles, to 11th Street on the south. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn on 1st Street in the eastbound direction. From 1st Street, the streetcar would turn southbound, down Broadway, traveling 1.25 miles to 11th Street where it would turn westbound. The streetcar would then turn north on Figueroa Street and travel 0.5 mile north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street where it would continue north back to 1st Street. When the circuit is complete, the streetcar would return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall. Figure 2 depicts the LPA alignment.

9th Street Alternative – The 9th Street Alternative would follow the same alignment as the LPA but would run eastbound on 9th Street between Figueroa Street and Hill Street rather than 7th Street. Figure 3 depicts the 9th Street alignment.

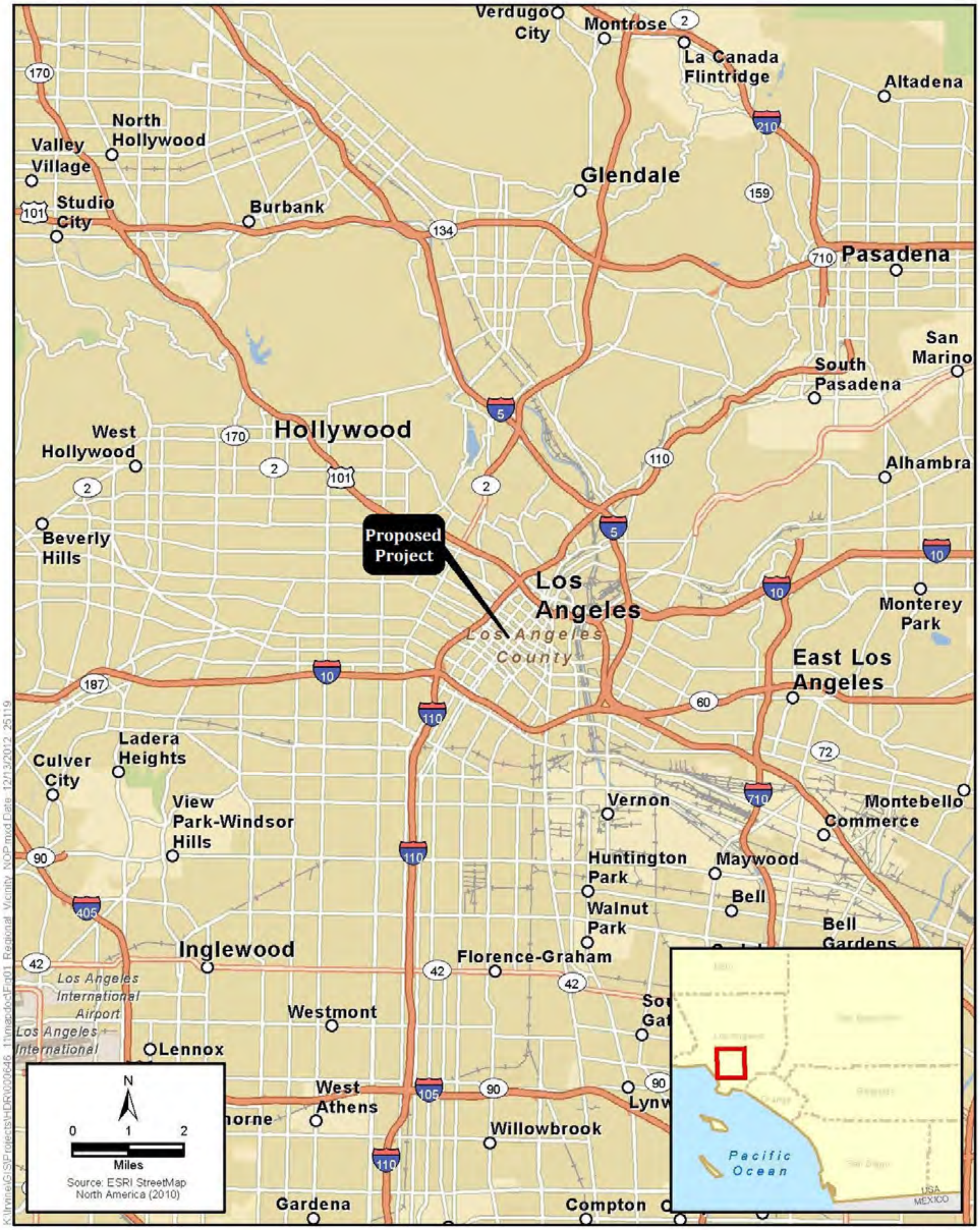


Figure 1
Regional Location Map
Restoration of Historic Streetcar Service in Downtown Los Angeles

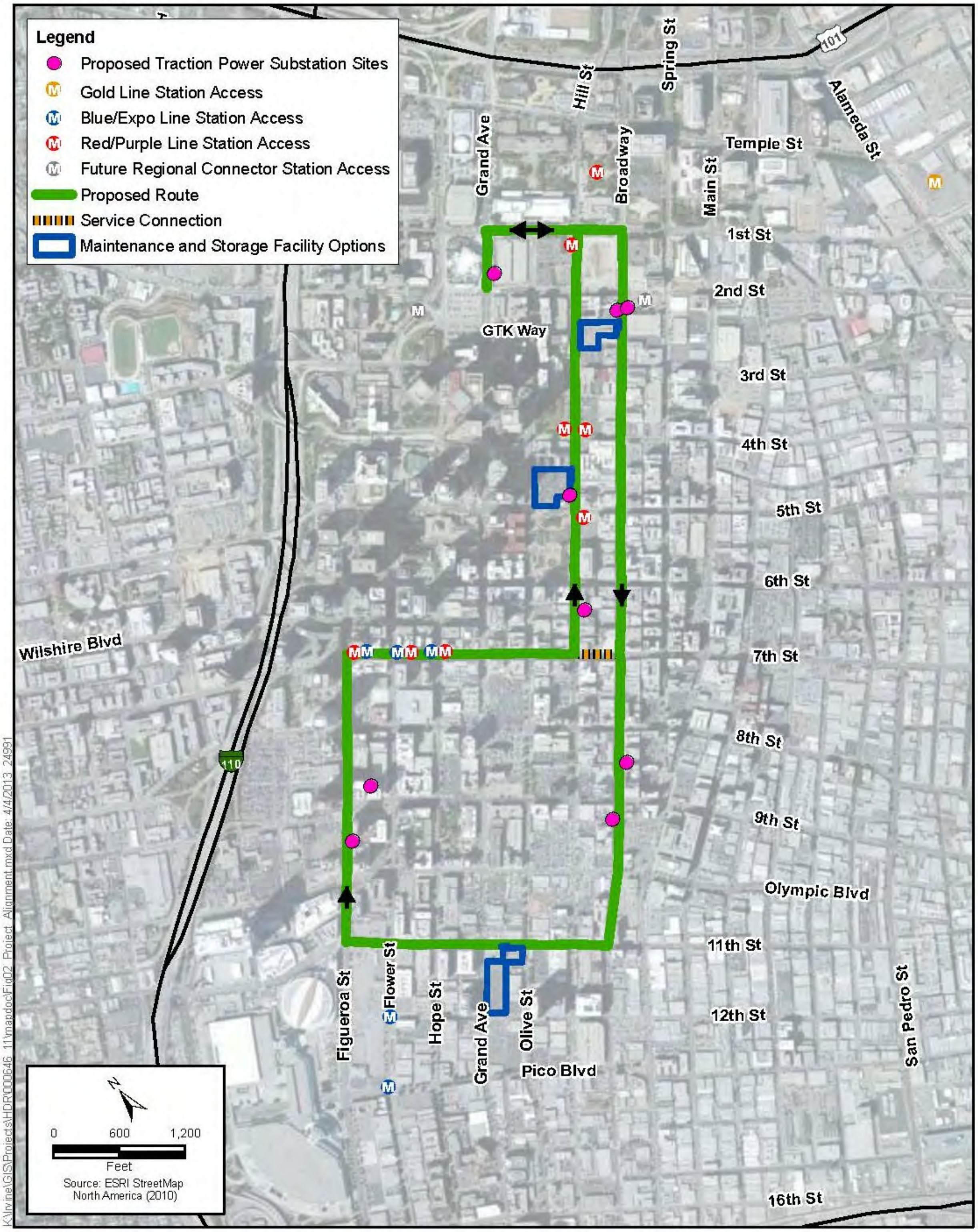


Figure 2
Locally Preferred Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

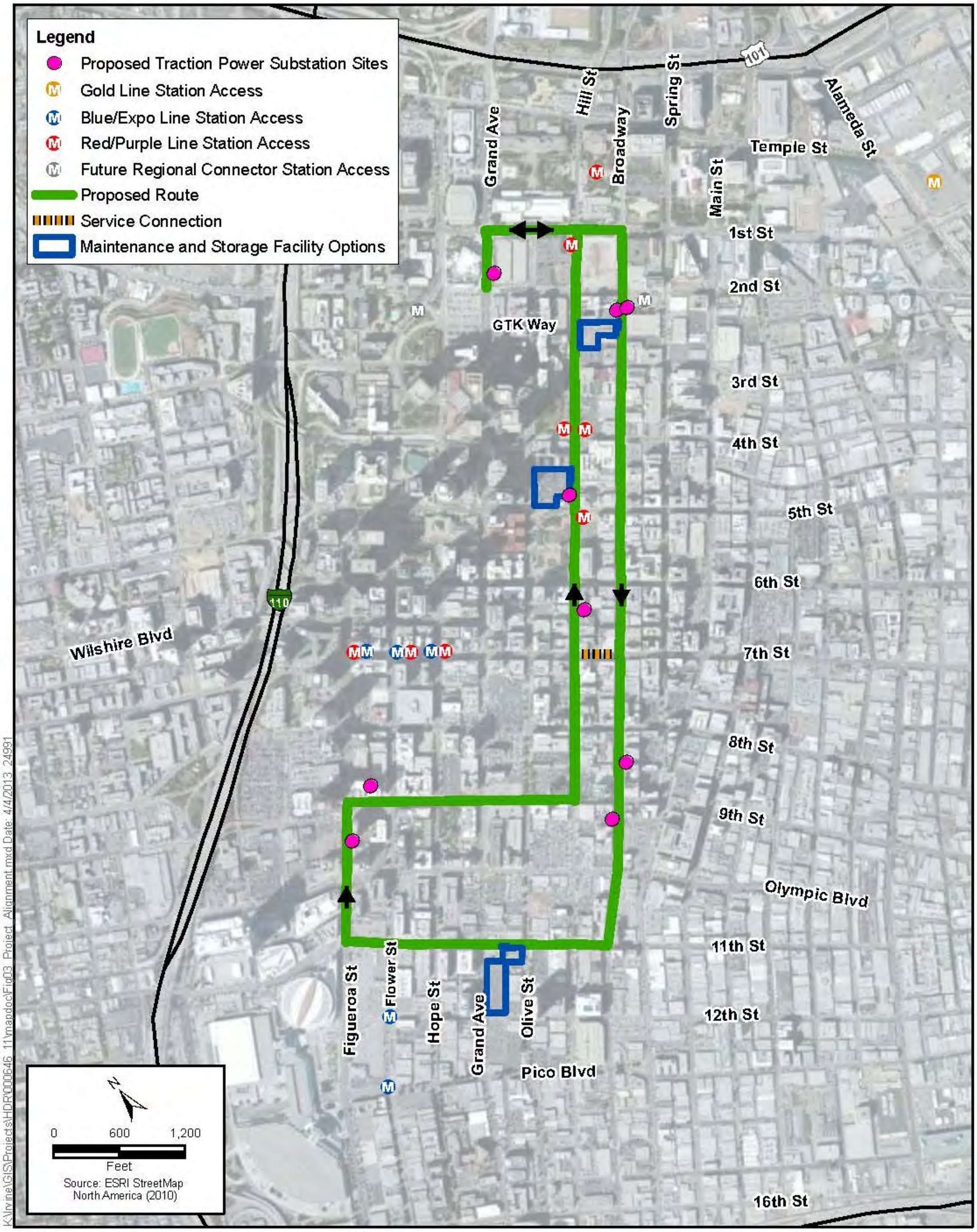


Figure 3
9th Street Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

2. SUMMARY OF PURPOSE AND NEED

The proposed project has two overarching objectives and several sub-objectives.

- Enhance mobility and transit circulation in downtown Los Angeles through the following:
  - Connect major districts, destinations, and activity centers.
  - Improve transit coverage and circulation.
  - Provide simple, localized, high-frequency service.
  - Alleviate traffic and reduce parking demand.
  - Serve transit-dependent populations.
  - Improve transit accessibility.
- Support the growth and revitalization of downtown Los Angeles, including its historic districts, through the following:
  - Restore historic streetcar service.
  - Revitalize geographically isolated, economically depressed areas
  - Support smart, sustainable growth.
  - Foster a more livable downtown.
  - Encourage historic restoration and transit-oriented development.
  - Strengthen downtown's economic competitiveness.

The proposed project aims to address the challenges of navigating a disconnected downtown area by providing a transportation link between various districts. By connecting residential and employment hubs, shopping districts, civic resources, cultural institutions, historic landmarks, entertainment venues, and transit services, the project would increase mobility and accessibility for people who live and work in downtown as well as visitors. The proposed project would promote transit use and walking within downtown while reducing the need to travel by automobile.

In concert with local efforts, the proposed project is intended to aid in the revitalization of many downtown districts, including the Historic Core. Local initiatives such as Bringing Back Broadway (an effort to restore Broadway, which contains the highest concentration of historic theaters in the western United States), redevelopment plans, street improvements, and proposed design guidelines have been proposed to restore the area's historic significance and stimulate economic development opportunities. The reintroduction of streetcar service is proposed to facilitate the renewal of the Historic Core and support growth and revitalization of the underdeveloped neighborhoods in the area.

2.1. PROJECT AGENCIES

The project participants include FTA, LADOT, LABOE, and Metro. Consultants under contract to Metro include HDR (responsible for AA and preliminary engineering), ICF (subconsultant to HDR, responsible for environmental documentation), and The Robert Group (public outreach consultant).

2.2. REPORT PURPOSE AND STRUCTURE

According to the Council on Environmental Quality's NEPA Regulations (40 Code of Federal Regulations [CFR] Part 1500 et seq.) and the CEQA Guidelines (14 California Code of Regulations, Sections 15082–15083), federal and state lead agencies should engage in the public scoping process to define the appropriate range of issues and the depth and breadth of analysis to be addressed in a major environmental document. This report documents the lead agencies' compliance with the scoping requirements of NEPA and CEQA.

Section 1 of this report explains the need of this Scoping Summary Report and provides a summary of the proposed project and the current alternatives. Section 2 addresses the purpose, need, and primary objectives of the streetcar project. Section 3 of this report first provides a recap of the outreach activities completed during the previous phase of study (i.e., the Restoration of Historic Streetcar Service AA Study). Section 4 then reviews the scoping activities for the Draft EIR/EA. Section 4.1 describes the initiation of the scoping process, with the publication/posting of the notice of preparation (NOP). Section 4.2 reviews the scoping process for interested agencies and the general public. This section describes the two public scoping meetings that were held on January 23, 2013and the additional forms of notification used other than the publishing of the NOP. Finally, Section 4.3 provides a summary of comments received during the designated scoping period.

3. ALTERNATIVE ANALYSIS OUTREACH ACTIVITIES

In May 2011, Metro and CRA/LA initiated efforts to complete the AA for the Restoration of Historic Streetcar Services in Downtown Los Angeles. The project study area defined in the AA is bounded by Cesar Chavez Avenue, Chinatown, and Union Station to the north; Washington Boulevard to the south; Los Angeles Street to the east; and the Harbor Freeway (I-110) to the west.

Metro originally envisioned the system to reconnect several downtown neighborhoods, including Chinatown, Olvera Street, and the South Park Community. The growing downtown residential population, as well as new business, retail, and entertainment venues, would be reconnected through the historic streetcar service, which would provide service to intermodal transit facilities. The project would be designed as an initial segment, which could be extended in the future when additional funds become available.

3.1. PREPARATION

Metro hosted a series of early scoping meetings and community updates as part of the initial environmental review process. An inter-agency meeting was held on May 4, 2011, and included representation from a number of City of Los Angeles departments, Metro, the California Department of Transportation (Caltrans), Metrolink, the California Public Utilities Commission (CPUC), and FTA. A list of attendees is included in Appendix A1. Metro briefed the Downtown Los Angeles Neighborhood Council (DLANC) on May 10, 2011. Finally, a formal "pre-scoping" open house and hearing was held on May 17, 2011, at the Los Angeles Theatre in Downtown Los Angeles.

To alert project stakeholders to the pre-scoping meeting, a series of notices was distributed. The project database was assembled using Metro's Regional Connector stakeholder list and included the additional stakeholders identified from the Los Angeles Streetcar Incorporated (LASI) list. Online display advertising was placed in the *Los Angeles Downtown News* and *BlogDowntown* and ran for the entire month of May.

Metro purchased a commercial postal mailing list to distribute the mailer, a three-sided pamphlet containing information related to the early scoping meeting in English, Spanish, and Mandarin. The pamphlet included the date, time, and location of the meeting, as well as a brief overview of the proposed project. The commercial mailer contained more than 40,000 postal addresses located in the project study area. This was not a "property owner" list or a list that could be utilized for a formal public notice. The postal mailer was distributed twice to the project study area, on May 2 and May 10, 2011. A copy of the mailer is included in Appendix A2.

Email notices were distributed on April 29, May 9, and May 16, 2011, to those who had previously attended community meetings, workshops, or hearings. Additionally, notices were distributed to anyone who commented on the project or was identified as a project stakeholder. A follow-up email was posted on May 18, 2011, highlighting the availability of project information on the study website.

3.2. SUMMARY OF SUBMITTED COMMENTS

The AA scoping meeting invitation was sent prior to May 5, 2011, and comments were requested back by May 31, 2011. Ninety comments were submitted by the public during the comment period and at the pre-scoping meeting. The majority of the comments recognized the need for the project and were supportive of the environmental review process continuing forward. Other comments noted concerns about project funding during construction and operations. A summary of the comments are provided below.

- Concerned a couplet would provide slower service.
- Construct bike lanes with the project.

- It should be easy to access the streetcar with a bike.
- Continue service during the weekend and evenings.
- Older cars could be used for special occasions.
- Do not want it seen as a tourist attraction but rather as a local circulator.
- Future extensions should travel to Union Station, Little Tokyo, and the Fashion and Arts Districts.
- Maintenance facility should be located on the line.
- Please use modern cars.
- Use the original streetcar colors to identify route.

Those not in support of the project cited the following specific concerns:

- Area is currently well served by local transit; additional transit access at-grade is not needed
- Building and land owners should not bear the brunt of financing the construction or operation of the project.
- Crossing the Metro Blue line tracks is too dangerous.
- Financing plan should not increase residential rents.
- Keep streetcars away from Disney Hall—wires and vibration from trains would be harmful.
- Project should be funded with City general funds.
- Regional Connector would provide this access.
- The project is not about how fast one can travel through downtown.

Those in support of the project requested the following connections and alignments, as referenced in the AA:

- A1, Olive, and C1 as options.
- A5 and B1 as preferred segments. Did not like any of the C segments.
- A7 as first choice, with B1 and B2 or C3.
- Connect the platform directly to the crosswalk.
- Connect to Chinatown.
- Connect to Union Station.
- Connect with Dodger Stadium.
- Connection to Figueroa is very important.

- Must connect to LA Live, Convention Center, and Music Center.
- Remove some of the buses from Broadway.
- Route should travel northbound Broadway and southbound Hill.
- Route should travel southbound Broadway and northbound Hill.
- Streetcar service is perfect for the Historic Core.
- Supports a couplet on Broadway to Los Angeles or Main Streets.
- Supports A7 with connections to Chinatown.
- Travel on Broadway to support existing and potential economic development opportunities.
- Travel to 11th Street.
- Travel to Pico Boulevard.
- Use Main and Spring Streets as a couplet.
- Would like to see direct connections with Regional Connector stations and existing Metro Blue, Red, and Purple lines stations.

Metro hosted a community update meeting in early August of 2011 to review the screened project alternatives that would be recommended for further study. At that time, the participating agencies determined what further environmental documentation would be required to move forward.

4. DRAFT EIR/EA SCOPING PROCESS

This section documents the scoping activities completed as part of the draft EIR/EA. These scoping activities included the following:

- Preparing Notice of Preparation (NOP), consistent with CEQA requirements.
- Posting the NOP with the State Clearinghouse and the County Clerk/Recorder of Los Angeles County to initiate the CEQA scoping process.
- Mailing NOP to agencies and interested parties.
- Publishing the NOP in the *Los Angeles Times*.
- Holding two scoping meetings.
- Logging all scoping comments into a database and summarizing public input.

Comments and issues raised at the two scoping meetings and during the scoping process would be used to identify environmental factors that could be affected by this proposed project. As needed, additional alternatives may be identified to lessen or avoid potential environmental impacts. These alternatives would be analyzed to a lesser level of detail, in accordance with CEQA.

4.1. INITIATION OF SCOPING (NOTICE OF PREPARATION)

In compliance with CEQA, the NOP for an EIR was published at the State Clearinghouse on January 3, 2013. In addition, the NOP was posted at the Los Angeles County Clerks' Office on January 3, 2013. The NOP announced LABOE's intent to prepare an EIR/EA in accordance with CEQA and NEPA. The NOP provided formal notice of the opportunity to comment in writing and/or at the public scoping meeting and commenced the CEQA scoping period. The scoping comment period was open for 30 days, until February 1, 2013, during which time agencies and the public were provided an opportunity to comment on the project. A copy of the NOP can be found in Appendix B1. Information regarding the scoping meeting was also included in the NOP in the *Los Angeles Times*. A copy of this advertisement is included in Appendix B5.

4.2. PUBLIC SCOPING

Public outreach to notify agencies, elected officials, organizations, and interested individuals of the scoping meetings was completed via several channels of communication, as described further in this section.

4.2.1. Notice of Preparation and Initial Study Mailings

The NOP was distributed to 86 agencies and interested parties on January 3, 2013, via U.S. Postal Service certified mail. All interested individuals were encouraged to attend the scoping meeting. The complete list of agencies and contacts that received an NOP mailing, including the recipient name, organization, and address is included in Appendix B2.

4.2.2. Notification Database

There were three different databases used to notify project stakeholders of the environmental scoping process. Metro's database included stakeholders who self-identified as stakeholders, regardless of proximity to the project study area. LASI maintained a database of interested stakeholders. In addition, since 2007 The Robert Group has maintained a database for the proposed project, which contains:

- Federal, state, county, local elected officials, and neighborhood councils;
- Representatives of business, community, and non-profit organizations located in the project study area;
- Homeowner and property owner associations;
- Past meeting participants; and

- Those who have previously submitted comments.

Cumulatively, LASI's and Metro's database includes 5,654 stakeholders. Stakeholders were provided with email notices six times prior to the meeting, alerting them of the time, date, and location of the scoping meeting. Additionally, hyperlinks were included in the email noting the location of the NOP and all previous environmental review documents (See Section 4.2.5.4 for more information regarding the proposed project's websites). In addition, the email included the email contact information, as well as the postal address to be used when submitting comments.

4.2.3. Project Information Telephone Line

A project information telephone line was created as an additional means of communication. This line is used by the public to communicate with Metro staff to acquire information or ask questions related to the proposed project. The line is accessible in English and Spanish; however, additional language access is available upon request. In addition to phone call alerts to Metro staff when a message is left, Metro staff checked for messages on a daily basis. All messages were logged and responded to by Metro staff. Less than five messages were left, and all related to accessing parking for the community scoping meeting. The project line phone number is (213) 922-3000.

4.2.4. Project Email

The project email address is streetcarservice@metro.net; however, comments were submitted to Jim Doty, Manager of the Environmental Management Group with the City of Los Angeles Bureau of Engineering, the designated contact person for the CEQA Lead agency at jim.doty@lacity.org. Stakeholders could request to be added to Metro's stakeholder list via the project email or Jim Doty's email address. Additionally, the project email address was provided for stakeholders should project related questions arise.

When Metro or the City receives emails, the document is forwarded to the individual responsible for providing a response. For example, if the request was to be added to the Metro distribution list, Metro is responsible for updating their internal list. If the request is related to the scoping process, the email was forwarded to Jim Doty at the City of Los Angeles, who would then forward the email to the project's technical consultant.

4.2.5. Noticing

A variety of methods were utilized to notify the public about the scoping meetings. Metro and The Robert Group distributed 480 email notices regarding the project scoping period and meetings held on January 23, 2013. The email notice was made available in English and Spanish.

The scoping meetings were publicized by means of flyers in English, Spanish, Japanese, Mandarin, and Korean, electronic notices to the project database, display advertisements in multilingual publications, and postings on Facebook.

4.2.5.1. Take Ones

Preceding the public scoping meetings, “take one” flyers, a double sided pamphlet containing information related to the EIR scoping meetings, were distributed to all individuals, groups, and businesses along the project alignment areas bounded by 1st, Hill, Spring, and 11th Streets. This included distribution on both sides of Broadway. Approximately 500 flyers were distributed. Flyers were printed in English, Spanish, Japanese, Mandarin, and Korean, and included the meeting time, date, and location as well as the contact information to secure additional information and submit written comments. A copy of the flyer is included in Appendix B3.

4.2.5.2. Email Notice

The project team distributed the electronic mailings to all individuals, groups, and organizations in the project database with email addresses, included elected officials, neighborhood groups, business organizations, and community-based organizations. Email notices were sent six times prior to the scoping meeting alerting them to the time, date, and location of the meetings. Additionally, hyperlinks were included in the email noting the location of the NOP and all previous environmental review documents. At the conclusion of the scoping meeting, five additional notices were distributed to solicit additional comments and to notify the public of the comment submission deadline. E-mail blasts were sent to approximately 5,100 email addresses. A copy of Metro’s email blast is included in Appendix B4.

4.2.5.3. Newspaper Advertisements

Print advertisements of the public scoping meetings were published in several newspapers, selected primarily on their geographic and language focus. A copy of each newspaper advertisement is included in Appendix B5. Newspaper advertisement details are listed below.

- ***Los Angeles Times*** (English)
  - Date: January 10, 2013
- ***Los Angeles Downtown News*** (English)
  - Date: January 7, 2013 (English)

- ***Korea Times Los Angeles*** (Korean)
  - Date: January 12, 2013
- ***La Opinión*** (Spanish)
  - Date: January 7, 2013
- ***Metro Insider*** (English)
  - Date: January 2013
- ***Rafu Shimpo*** (Japanese)
  - Date: January 10, 2013
- ***World Journal*** (Chinese/Mandarin)
  - Date: January 11, 2013

4.2.5.4. Project Website

The City of Los Angeles and Metro have developed websites for the project:

- http://eng.lacity.org/techdocs/emg/historic_streetcar.htm, and
- www.metro.net/projects/historic-streetcar-service.

The two sites maintain the same information for the current stage of the project, including the initial study and NOP. The Metro site hosts previous presentation materials, fact sheets, the AA, and reference maps. In weeks prior to the scoping meeting, web banners were run on Metro's website. Metro's newsletter, *The Source*, ran an article on the project as well. In addition, the scoping presentation and display boards have been posted. The project website is updated as information becomes available.

4.2.5.5. Facebook

A Facebook page for the Los Angeles Streetcar project is maintained by LASI. Metro does not maintain a Facebook page for this project. The page included links to the City of Los Angeles and Metro project pages.

4.2.6. Public Scoping Meetings

Two scoping meetings, as detailed below, were held to receive public comments regarding the scope and content of the environmental information to be included in the draft EIR/EA. Meeting details are as follows:

- **Date:** Wednesday, January 23, 2013
- **Time:** 10:00 a.m. to 11:00 a.m. and 6:30 p.m. to 8:00 p.m.
- **Location:** Caltrans/LADOT, 100 South Main Street, Conference Room 1A, Los Angeles, CA
- **Number of Attendees:** 102 signed in (74 morning, 28 evening)
- **Commenters:** 10 verbal comments

Presentation materials at both meetings were identical. Both meetings included an open house, presentation board display and a slide presentation. The majority of the morning participants were City of Los Angeles representatives and the majority of the evening participants were downtown Los Angeles residents or property owners. In total, 102 people attended the meetings. The sign-in sheets from both public scoping meetings are provided in Appendix C3. A Spanish translator was available at the evening meeting.

4.2.6.1. Scoping Meeting Format

The meeting format was as follows:

- Open House
- Presentation
- Public Comment

Both public scoping meetings were initiated with an open house display of presentation boards. The open house and presentation provided attendees with information regarding the scoping process, in addition to the purpose and need, alternatives, and potential impacts of the streetcar service. Project participants were available during the open house portion of the scoping meetings to answer questions.

A slide presentation followed the open house period. After welcoming the attendees, team members discussed the following: 1) purpose of scoping meeting; 2) project background and description; 3) EIR/EA process; and 5) public comment. Emphasis was placed on the importance of the submission of comments on the scope and content of the EIR/EA.

Attendees willing to speak filled out a speaker card and turned it in prior to speaking. Following the public comment portion of the meetings, the project participants gathered by the presentation boards and were available for questions. Written comments were accepted throughout the meetings.

4.2.6.2. Public Meeting Materials

Display boards, the slide presentation, speaker cards, and comment sheets provided during the scoping meetings are described below.

Display Boards

Display boards were used during the open house portion of the meetings to provide information under the following headings:

- Objectives
- EIR/EA Process
- Potential Impacts
- Locally Preferred Alternative
- 9th Street Alternative

A copy of the display boards is included in Appendix C1.

Slide Presentation

A copy of the slide presentation is included in Appendix C2.

4.2.7. Speaker Cards and Comments Sheets

Speaker cards were available for those who wished to give verbal comments, and comment sheets were available for those who preferred to submit a written comment.

4.2.8. Public Meeting Comments

The sign-in sheets of the public scoping meetings are provided in Appendix C3.

4.3. Summary of Scoping Comments

Comments were accepted throughout the scoping period, from January 3 until February 11, 2013. All commenters and comments were recorded and categorized in an electronic database. The database contains information documenting the name and affiliation (if any) of the commenters, the topics addressed in the comments, and a brief summary of the comments, if appropriate. The database is included in Appendix D2.

Throughout the scoping process, a total of 126 commenters submitted feedback. Commenters included agencies, community organizations, and members of the general public. Agency and public written comments are included in Appendix D1.

4.3.1. Summary of Agency Comments

Twelve agencies submitted comments during the scoping period. Agencies were categorized into federal, state, and local. Some of the agencies requested assurance that the proposed project would comply with government-mandated policies, while some agency letters expressed concern regarding project impacts and the long-term results. One federal agency requested that an analysis of the proposed project's potential impacts on a proposed federal courthouse. The agency comments are included in Appendix D. The concerns of all the agencies will be addressed in the draft EIR/EA.

4.3.2. Summary of Public Comments

The substance of the 126 written comments can be classified into one or more of four categories. These four categories include project purpose and need, the alternatives to be studied in the draft EIR/EA, potential environmental impacts and other noteworthy concerns. The following sections summarize the comments from each major category.

4.3.2.1. Comments Related to Purpose and Need

Sixty-three comments during the scoping period discussed the purpose and need of the project. 21 commenters expressed their opinion that there is no need for the project since it would reduce mobility and would not beneficially affect transit circulation or revitalization. Ten of these commenters noted that downtown traffic would be made worse due to the already congested streets, in addition to various environmental impacts. Another objection by 11 commenters was that routes could be duplicated by the local DASH or Metro Gold and Purple lines. However, as many as 42 commenters agreed that there is a need for the project and anticipate the return of streetcars in the downtown area. Some view it is a practical alternative to unite downtown Los Angeles. One supporter commented that the streetcar would provide an energy efficient approach to view the "splendor of downtown and all that it offers." The draft EIR/ EA will expand and clarify the purpose and need statement in response to these comments, as applicable.

4.3.2.2. Comments Related to Alternatives

Twenty-eight commenters provided feedback related to the project alternatives mentioned in the NOP. Ten commenters expressed support for the LPA (7th Street);however, only two supported the 9th Street Alternative. Seven comments related to additional alternatives or routes that should be considered. Reasonable concerns regarding alternatives will be addressed through the draft EIR/EA process, as applicable.

Locally Preferred Alternative

Three comments expressed concern about the streetcar going down 11th Street. These comments suggested that the LPA would increase traffic due to the reduction of traffic lanes on 11th Street, which is a predominantly two-lane street with a direct route to the Staples Center and LA Live. Five comments opposed the LPA mentioning that the proposed route could be duplicated by Dash Buses. However, ten voiced their support for the LPA because it would provide a connection to the 7th Street/Metro Center station and the Metro Red and Blue lines. It was mentioned that the LPA would serve the needs of the community as well as local businesses since it would be located in an area with numerous restaurants and stores.

9th Street Alternative

Two commenters supported the 9th Street Alternative because it was the closest to their place of residence or neighborhood grocery store. However, one commenter stated that because the 9th Street Alternative would not serve the Financial Core area, it would not be the most efficient or popular route.

Routes

One commenter enthusiastically expressed the need to consider 6th Street as an alternative route. The commenter noted that 6th Street is one-way east and would provide service to the largest office population in downtown—the Financial Core area, including Bunker Hill along 5th Street—in addition to the Bonaventure and Biltmore Hotels.
Another commenter mentioned the need to examine another north/south route for the streetcar other than Broadway and Hill Street because of their proximity to each other. One commenter recommended moving the single track from Hill to Broadway and providing a double track on Broadway to increase operational efficiency. Two commenters were concerned about the future expansion of the streetcar and whether it would connect to Little Tokyo, Chinatown, or Union Station. One commenter recommended that both the 7th Street and 9th Street Alternatives should be implemented. Another commenter suggested that the streetcar have one track in each direction, creating a two-way system.

4.3.2.3. Comments Related to Potential Impacts

Transportation/Traffic

Sixteen comments were related to traffic circulation and potential transportation impacts. These comments expressed general concerns over traffic patterns and the potential for increased traffic congestion. One commenter mentioned that the length of the streetcar could block traffic when turning. Since Downtown streets are presently narrow and congested, three commenters stated that the addition of the streetcar would worsen already-existing poor traffic conditions; especially since they cannot maneuver around obstructions, such as accidents, road work, or police or fire department activity. Also, there were nine comments concerning the potential impacts to existing bus routes on the streets that the streetcar would serve. These comments mentioned that the streetcar may be unnecessarily redundant with other similar forms of public transportation, such as the planned Regional Connector, existing Metro Red and Purple lines, and existing Metro and DASH bus routes. The potential impacts related to transportation/traffic will be analyzed in the draft EIR/EA, as applicable.

Air Quality

Two comments expressed concern that the streetcar would cause an increase in traffic, which could worsen local air quality due to additional exhaust caused by increased idling of cars in traffic on the streets. The potential impacts related to air quality will be analyzed in the draft EIR/EA, as applicable.

Aesthetics/Visual Quality

There were ten comments expressing concern that the streetcar's infrastructure (e.g., maintenance and storage facility, traction power substations, and overhead wiring) could diminish the visual quality and enjoyment of the area's architecturally significant buildings and character. A suggested solution by one commenter was to consider at least one of several streetcar technologies that would eliminate the need for overhead wires, which use various methods of safely embedding the power supply in the ground. Another commenter wanted more detailed information regarding the traction power substation locations. The potential impacts related to aesthetics/visual quality will be analyzed in the draft EIR/EA, as applicable.

Noise and Vibration

Seven comments noted that the project would add additional noise in the project area late in the night (according to the proposed service schedule). Commenters expressed concern also regarding the noise generated from construction activities. One local business commented that the sound and vibration that would come from the streetcar would be an issue not just to the human ear, but also to highly tuned recording equipment used frequently for business operations. The potential impacts related to noise and vibration will be analyzed in the draft EIR/EA, as applicable.

Safety

Seven concerns regarding the safety of the pedestrians were mentioned, especially where the streetcar would make turns at intersections. The potential impacts related to safety will be analyzed in the draft EIR/EA, as applicable.

Historic Resources

Four comments mentioned that the proposed streetcar route would complicate future historic renovation efforts of the many historic buildings in downtown by limiting the available construction staging space that would be needed for rehabilitation of the buildings. The Los Angeles Conservancy urged that the design, construction, and operation of the streetcar avoid or minimize adverse impacts to historic resources along the selected route. The potential impacts related to historic resources will be analyzed in the draft EIR/EA, as applicable.

Maintenance and Storage Facility

Sixty-one written comments were related to the potential locations for the maintenance and storage facility (MSF). The three potential locations are: 1) Broadway, midblock between 2nd Street and 3rd Street; 2) 5th Street and Olive Street; 3) 11th Street and Grand Avenue. One commenter from a local organization was concerned about the possible high levels of noise that would be generated by the proposed MSF. Another comment mentioned that all three potential sites are prime property for residential and/or commercial development. There was one comment opposed to the potential MSF location at 5th and Olive.

11th Street and Grand Avenue

Forty-seven commenters objected to the proposed MSF at the corner of 11th Street and Grand Avenue; these came from condominium owners and residents of the Grand Lofts, Luma, Elleven, and Evo. Evo sent in a survey from 150 members and residents. One hundred thirty-nine, or 92.7%, disapproved of this location for the rail yard. A table containing seventy-five comments was presented with the survey. The commenters expressed their disapproval of this MSF location. While the commenters do not oppose the project altogether, some even voicing their support, they expressed their disapproval of the proposed MSF location, which currently serves as their parking lot. Another concern voiced in the comments was that the parking lot is the safest parking arrangement available, since it connects directly to the building and allows the residents to exit their vehicles and directly enter the Grand Lofts. The majority of the commenters who reside in the Grand Lofts stated that the MSF would stymie the residential growth in their neighborhood. Others expressed concern about the decrease of the quality of life due to noise and potential air pollutants from the MSF. It was also suggested that the MSF would depreciate property values in the area, and that the location is inappropriate. The potential impacts related to the 11th Street/Grand Avenue MSF location will be analyzed in the draft EIR/EA, as applicable.

Broadway/Hill and 2nd Streets

Three comments were also opposed to constructing the MSF along Broadway, midblock between 2nd Street and 3rd Street. These comments stated that the residents of the Pan American Lofts anticipate rail construction could bring both noise and air pollution from road work, traffic re-routing, dust, etc. Also, one commenter mentioned that the Pan American Lofts must be historically preserved under the Mills Act, and any study of this MSF site must take into account possible damage to the building, including the underground structure. It was also noted by one commenter that potential impacts would be exacerbated because streetcar construction could precede, follow, or be concurrent with the federal courthouse construction at Broadway and 2nd Street. However, three additional comments were received preferring this location to the other two, Grand and 11th Street and Olive and 5th.The potential impacts related to the Broadway/Hill and 2nd Streets MSF location will analyzed in the draft EIR/EA, as applicable.

4.3.2.4. Other Comments

Nine commenters were concerned about the design of the proposed streetcar. Five comments expressed an interest in not only the original color design, but also the original, historic trolleys. Many commenters mentioned that any project in the area must preserve the historic character of the area. These commenters agreed that a modern streetcar vehicle would be inconsistent with the character of historic downtown Los Angeles and that it's a possibility that replica trolleys can be constructed with new running gear and electronics. However, five other commenters were not in favor of the vintage, original streetcar design. By using advanced streetcar technologies, such as the Personal Rapid Transit (PRT), an automated guideway transit, these alternative technologies could be cheaper, more efficient, quieter, consume less energy, and have less impact on traffic and the environment. One of these commenters wrote that they hope that the selected streetcar would be an interesting design unique to Los Angeles. One commenter stated that low-slung trolleys not only make boarding easier and safer, but they are very modern in appearance, and would proclaim that Los Angeles is a forward-looking metropolis. Three commenters held three different opinions on advertisements based on the type and the quantity. One commenter wondered if the TPSS and overhead contact system would be approximately 600 VDC (as mentioned in the NOP) or if 750 VDC would also be considered (the voltage of all modern streetcar systems operating in the United States). Three comments mentioned the need to consider how the streetcar could affect access to the theaters on Broadway, especially when there are high volumes of traffic. Three comments were related to the fare of the streetcar, whether local residents would obtain free or discounted passes, and the times of operation.

APPENDICES

Appendix A: Alternative Analysis Outreach

A1 Inter-Agency Meeting Attendees

A2 Early Scoping Meeting Mailer

Appendix B: Noticing

B1 Notice of Preparation

B2 Agency List

B3 Take One

B4 Electronic Meeting Notice

B5 Newspaper Advertisement

Appendix C: Public Meetings

C1 Display Boards

C2 Slide Presentation

C3 Sign-in Sheet

Appendix D: Scoping Comments

D1 Written Comments

D2 Comment Database

Appendix A: Alternatives Analysis Outreach

Appendix A1. Inter-Agency Meeting Attendees

Organization	Dept	FName	Lname	email (Value)
LASI		Dennis	Allen	dallen@lastreetcar.org
Southern California Association of Governments		Marco	Anderson	anderson@scag.ca.gov
Metro		Robin	Blair	blairr@metro.net
The Robert Group		Ginny	Brideau	ginny@therobertgroup.com
Metro		Eric	Carlson	Carlsone@metro.net
City of Los Angeles	Transportation	Tom	Carranza	tomas.carranza@lacity.org
City of Los Angeles	Public Works: Street Lighting	Mike	Cates	mike.cates@lacity.org
City of Los Angeles	Bureau of Street Services	Ferdy	Chan	Ferdy.chan@lacity.org
City of Los Angeles	El Pueblo de Los Angeles Historical Monument Authority Commission	Suellen	Cheng	suellen.cheng@lacity.org
City of Los Angeles	Transportation: Corridor Studies	Calvin	Chow	calvin.chow@lacity.org
City of Los Angeles	Public Works: Bureau of Sanitation	Denise	Chow	denise.chow@lacity.org
Metro		Megan	De Armond	Dearmondm@metro.net
City of Los Angeles	Public Works: Engineering	Jim	Doty	jim.doty@lacity.org
City of Los Angeles	Office of Historic Resources	Edgar	Garcia	edgar.garcia@lacity.org
City of Los Angeles	Community Redevelopment Agency	Curtis	Gibbs	cgibbs@cra.lacity.org
HDR		Charles	Hales	charles.hales@hdrinc.com
HDR		Jim	Hecht	jim.hecht@hdrinc.com
City of Los Angeles	CRA	Bradley	Henning	Bhenning@CRA.lacity.org
Metro		Emanuel	Higgins	higginse@metro.net
City of Los Angeles	Planning	Gabriela	Juarez	gabriela.juarez@lacity.org
Metro		Rufina	Juarez	juarezr@metro.net
HDR		Sharon	Kelly	sharon.kelly@hdrinc.com
Metro		Ann	Kerman	kermana@metro.net
City of Los Angeles	Planning	Nicholas	Maricich	nicholas.maricich@lacity.org
LASI		Eric	Metz	emetz@lastreetcar.org
Federal Transit Administration		Mary	Nguyen	Mary.Nguyen@dot.gov
City of Los Angeles	Planning	Simon	Pastucha	Simon.Pastucha@lacity.org
Metro	Operations Administration	Hector	Rodriguez	Rodriguezh@metro.net
City of Los Angeles	Bringing Back Broadway	Edlin	Roque	earoque@sbcglobal.net
Metro		Bruce	Shelburne	shelburneb@metro.net
Metro		Irv	Taylor	taylori@metro.net
City of Los Angeles	Community Redevelopment Agency	Jay	Virata	jvirata@cra.lacity.org
Metrolink		Mark	Waier	waierm@scrra.net
City of Los Angeles	Public Works: Bureau of Sanitation	Allen	Wang	allen.wang@lacity.org
Metro		Sami	Wassef	wassefs@metro.net
City of Los Angeles	Planning	Jeff	Wilson	jalanwilson@gmail.com
Caltrans	Highway Planning	Linda	Wright	linda_c_wright@dot.ca.gov

Appendix A2. Early Scoping Meeting Mailer

When: Tuesday, May 17, 2011

Cuándo: Martes, 17 de mayo de 2011

日期 : 2011 年 5 月 17 日 , 星期二

Time: 4:00 p.m. – 7:30 p.m.
Open house: 4:00 p.m. - 6:00 p.m.
Public comment: 6:00 p.m. - 7:30 p.m.

Hora: 4:00 p.m. – 7:30 p.m.
Reunión abierta: 4:00 p.m. - 6:00 p.m.
Comentario público: 6:00 p.m. - 7:30 p.m.

時間 : 下午 4 點–7 點 30 分
招待會 : 下午 4 點–6 點
公眾評論 : 下午 6 點–7 點 30 分

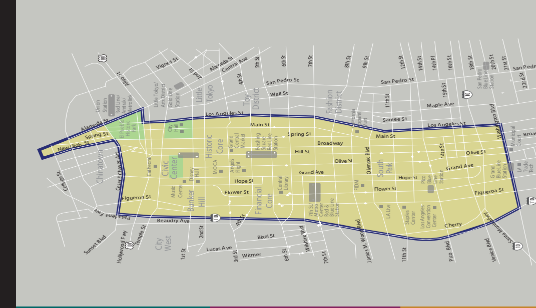
Where: Los Angeles Theatre, 615 South Broadway, Los Angeles, CA 90014-1803

Dónde: Teatro de Los Ángeles, 615 South Broadway, Los Ángeles, CA 90014-1803

地點: Teatro de Los Ángeles, 615 South Broadway, Los Ángeles, CA 90014-1803

Metro
One Gateway Plaza
99-22-2
Los Angeles, CA 90012

You are invited!



www.metro.net

Restoration of Historic Streetcar Service in Downtown Los Angeles
Early Scoping Meeting - May 17, 2011

Restauración del Servicio Histórico de Tranvías en la Zona Centro de Los Ángeles
Reunión de Exploración Inicial - 17 de mayo de 2011

洛杉磯市中心 - 歷史街車復駛計畫初期範疇界定會議 – 2011 年 5 月 17 日

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

Please plan to attend the upcoming Early Scoping Meeting

Metro is conducting an Early Scoping Meeting for an Alternatives Analysis (AA) of the Restoration of Historic Streetcar Service in Downtown Los Angeles ("Project"). The purpose of this Project is to restore historic streetcar service to downtown Los Angeles. This includes review of route alternatives and evaluation criteria. The AA will study and select alternative(s) for possible further environmental review and help in selecting a Locally Preferred Alternative.

The Project Study Area (PSA) is bounded by State Route 110 Freeway to the West, Washington Boulevard to the South, Los Angeles Street to the East, Cesar Chavez Avenue to the North with an extension stretching North of Cesar Chavez Avenue along New High and Alameda Streets just north of College Street. Districts within the PSA include the Historic Broadway District, Chinatown, El Pueblo, Bunker Hill, the Financial Business District, South Park and the L.A. Civic Center.

We encourage and welcome your participation. Comments regarding the scope of the AA may be submitted at the Early Scoping Meeting.

Oral comments regarding the scope of the AA may be heard during the Public Comment period. Written comments may be accepted during this event and also mailed to Metro, c/o Historic Streetcar Service, One Gateway Plaza, 99-22-2, Los Angeles, CA 90012 or emailed to streetcarservice@metro.net by May 31, 2011.

Any individual who requires special assistance, a sign language interpreter or translator, to participate in the meeting, should contact Ginny Brideau, ginny@therobertgroup.com, (323) 669-7654.

For more information about the Project, please visit http://www.metro.net/projects/historic-streetcar-service/

RESTAURACIÓN DEL SERVICIO HISTÓRICO DE TRANVÍAS EN LA ZONA CENTRO DE LOS ÁNGELES

Por favor planee asistir a la próxima reunión inicial para determinar el alcance del proyecto

Metro lo invita a una Reunión de Exploración Inicial sobre el análisis de alternativas (AA) para la Restauración del Servicio Histórico de Tranvías en la Zona Centro de Los Ángeles (el "proyecto"). El propósito de este proyecto es restaurar los servicios históricos de tranvía en la zona centro de Los Ángeles. Esto incluye el análisis de las rutas alternativas y los criterios de evaluación. Este AA estudiará y seleccionará una o varias alternativas para su posible evaluación medioambiental adicional y ayudará a seleccionar la alternativa preferida localmente.

El área de estudio del proyecto (PSA, por sus siglas en inglés) está limitada al Oeste por la ruta estatal Autopista 110, el Bulevar Washington al Sur, la calle Los Ángeles al Este, la avenida César Chávez al Norte, con un tramo que se extiende al norte de la avenida César Chávez a lo largo de las calles New High y Alameda, justo al norte de la calle College. El PSA incluye los siguientes distritos: el distrito histórico de Broadway, Chinatown, El Pueblo, Bunker Hill, el distrito comercial financiero, South Park y el centro cívico de Los Ángeles.

Queremos escuchar su opinión y su participación es bienvenida. Se pueden presentar comentarios sobre el alcance del AA en la reunión de exploración inicial.

Los comentarios orales sobre el alcance del AA se oirán durante el período de comentario público. Se pueden presentar comentarios escritos durante este evento o enviarse por correo a Metro, c/o Historic Streetcar Service, One Gateway Plaza, 99-22-2, Los Ángeles, CA 90012 o por correo electrónico a streetcarservice@metro.net a más tardar el 31 de mayo de 2011.

Cualquier individuo que requiera asistencia especial, un intérprete de lenguaje de señas o un traductor para participar en la reunión deberá comunicarse con Ginny Brideau, ginny@therobertgroup.com, (323)669-7654.

Para obtener más información sobre el proyecto, por favor visite http://www.metro.net/projects/historic-streetcar-service/

洛杉磯市中心歷史街車復駛計畫

請參加即將舉辦的初期範疇界定會議

都會運輸處 (Metro) 即將為洛杉磯市中心歷史街車復駛計畫 (簡稱「計畫」) 的替代分析 (Alternatives Analysis) 舉辦一場初期範疇界定會議 (Early Scoping Meeting)。這項「計畫」的目的是在洛杉磯市中心恢復歷史街車的服務。會議將包括可能路線和評估標準的審查。此項替代分析將為未來可能的環境審查進行供選方案的調查與選擇，並且有助於挑選一個「當地偏好方案」(Locally Preferred Alternative) .

「計畫調查區域」(Project Study Area) 位在 110 號高速公路以東，Los Angeles Street 以西，Washington Boulevard 以北，Cesar Chavez Avenue 以南的區塊，以及由 Cesar Chavez Avenue 北邊延伸的一塊區域–沿著 New High Street 和 Alameda Street 到 College Street 北邊。「計畫調查區域」涵括 Historic Broadway District，中國城，El Pueblo，Bunker Hill，金融商務區 (Financial Business District)，南方公園和洛杉磯市政中心。

我們鼓勵並歡迎您的參與。與替代分析的範疇有關的意見可以在初期範疇界定會議中提出。

有關替代分析之範疇的口頭意見可以在公眾評論時間提出。書面意見可以在此活動中提出，也可於 2011 年 5 月 31 日前郵寄至 Metro, c/o Historic Streetcar Service, One Gateway Plaza, 99-22-2, Los Angeles, CA 90012 或以電子郵件寄至 streetcarservice@metro.net.

參加會議者若需要特別協助 (如手語翻譯或語言翻譯)，請與 Ginny Brideau 聯絡， ginny@therobertgroup.com，(323) 669-7654.

欲知更多有關此「計畫」的訊息，請參閱 http://www.metro.net/projects/historic-streetcar-service/

Appendix B: Noticing

Appendix B1. Notice of Preparation

CITY OF LOS ANGELES

CALIFORNIA

ANTONIO R. VILLARAIGOSA
MAYOR

DEPARTMENT OF
PUBLIC WORKS

BUREAU OF
ENGINEERING

GARY LEE MOORE, P.E.
CITY ENGINEER

1149 S. BROADWAY, SUITE 700
LOS ANGELES, CA 90015-2213

http://eng.lacity.org

January 3, 2013

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL ASSESSMENT

To: Responsible Agencies, Trustee Agencies, Stakeholders, and Interested Parties

From: City of Los Angeles, Department of Public Works
Bureau of Engineering,
1149 South Broadway, Suite 600
Los Angeles, CA 90015-2213

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

The City of Los Angeles Department of Public Works, Bureau of Engineering, as the lead agency, will prepare an environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA) for the project identified below. In addition, the Federal Transit Administration (FTA) and the City of Los Angeles Department of Transportation (LADOT) are the co-lead agencies under the National Environmental Policy Act (NEPA). An environmental assessment (EA) will be prepared in accordance with NEPA. The LADOT is a responsible agency under CEQA.

The Bureau of Engineering requests your comments regarding the scope and content of the EIR/EA.

Project Title	Restoration of Historic Streetcar Service in Downtown Los Angeles
Project Location	The proposed project, which would be located in downtown Los Angeles, would travel through the following neighborhoods/districts (from north to south): the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, the Fashion District, and the Los Angeles Sports and Entertainment District, all of which are located within the Central City Community Plan area of the City of Los Angeles. The proposed 3.8-mile project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area comprised primarily of commercial land uses with a mix of residential, public, and entertainment uses interspersed throughout the project vicinity. Figure 1 depicts the regional location of the proposed project.
Project Description	The streetcar system would run within existing traffic lanes and would consist of a fleet of electric-powered vehicles utilizing a track and roadway configuration allowing for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would

convert high voltage power to approximately 600 volts direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide, and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loop, and there may be another TPSS at the Maintenance and Storage Facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would be generally located along the sidewalk or as a sidewalk extension towards the traffic lane to meet the streetcar vehicle. An exception to this is the stop on Grand Avenue north of 2nd Street that is planned in the median with crosswalks to either side of the street. Streetcar stops would generally be placed every block in the north-south direction, and every other block in the east-west direction.

Photo depicts a sample streetcar vehicle in an urban setting.

Two potential build alternatives have been carried forward as a result of the Alternatives Analysis Report. The alternatives under consideration for the Restoration of Historic Streetcar Service in Downtown Los Angeles include:

Locally Preferred Alternative (LPA) – The proposed project would construct and implement streetcar service along a one-way loop that would run from 1^{st} Street on the north, through downtown Los Angeles, to 11^{th} Street on the south. The project alignment would begin and terminate on Grand Avenue, one block south of 1^{st} Street. From that point, the streetcar would run northbound and turn on 1^{st} Street in the eastbound direction. From 1^{st} Street, the streetcar would turn southbound, down Broadway, travelling 1.25 miles to 11^{th} Street where it would turn westbound. The streetcar would then turn north on Figueroa Street and travel 0.5 mile north to 7^{th} Street where it would turn in the eastbound direction. From 7^{th} Street, the streetcar would turn northbound on Hill Street, continue north back to 1^{st} Street, then complete the circuit and turn westbound on 1^{st} Street to return to the streetcar terminal stop on Grand Avenue south of 1^{st} Street, by the Disney Concert Hall. Figure 2 depicts the LPA alignment.

9^{th} Street Alternative – The 9th Street Alternative would follow the same alignment as the LPA but would run eastbound on 9^{th} Street between Figueroa Street and Hill Street rather than 7^{th} Street. Figure 3 depicts the 9^{th} Street alignment.

Under both alternatives, there are three potential sites for the

	maintenance and storage facilities. These include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11st Street and Grand Avenue. The environmental impacts of both alternatives will be evaluated through the EIR/EA process. As needed, additional alternatives may be identified to lessen or avoid potential environmental impacts. These alternatives will be analyzed to a lesser level of detail, in accordance with CEQA.
Potential Environmental Effects	An Initial Study, which includes a preliminary review of the proposed project's environmental impacts, is attached to this NOP. Based on the results of the Initial Study, potential impacts in the following categories will be analyzed in further detail in the EIR/EA in accordance with CEQA and NEPA requirements: CEQA • Aesthetics • Air Quality Cultural Resources • Energy • Geology and Soils • Greenhouse Gas Emissions • Hazards and Hazardous Materials • Land Use and Planning • Noise and Vibration • Transportation/Traffic • Construction Impacts • Cumulative Impacts NEPA • Land Use and Zoning • Transportation System and Facilities • Air Quality • Historic, Archaeological, and Paleontological Resources • Visual Quality • Noise and Vibration • Land Acquisitions, Displacement, and Relocation • Hazardous Materials • Geology, Soils, and Seismicity • Community and Neighborhoods • Parks and Recreation Areas • Energy Resources • Safety and Security • Environmental Justice • Construction Impacts • Section 4(f) Resources

The Initial Study can be reviewed at the following locations:

Little Tokyo Branch Library, 244 S. Alameda Street
Central Library, 630 W. 5th Street
Online at: http://eng.lacity.org/techdocs/emg/

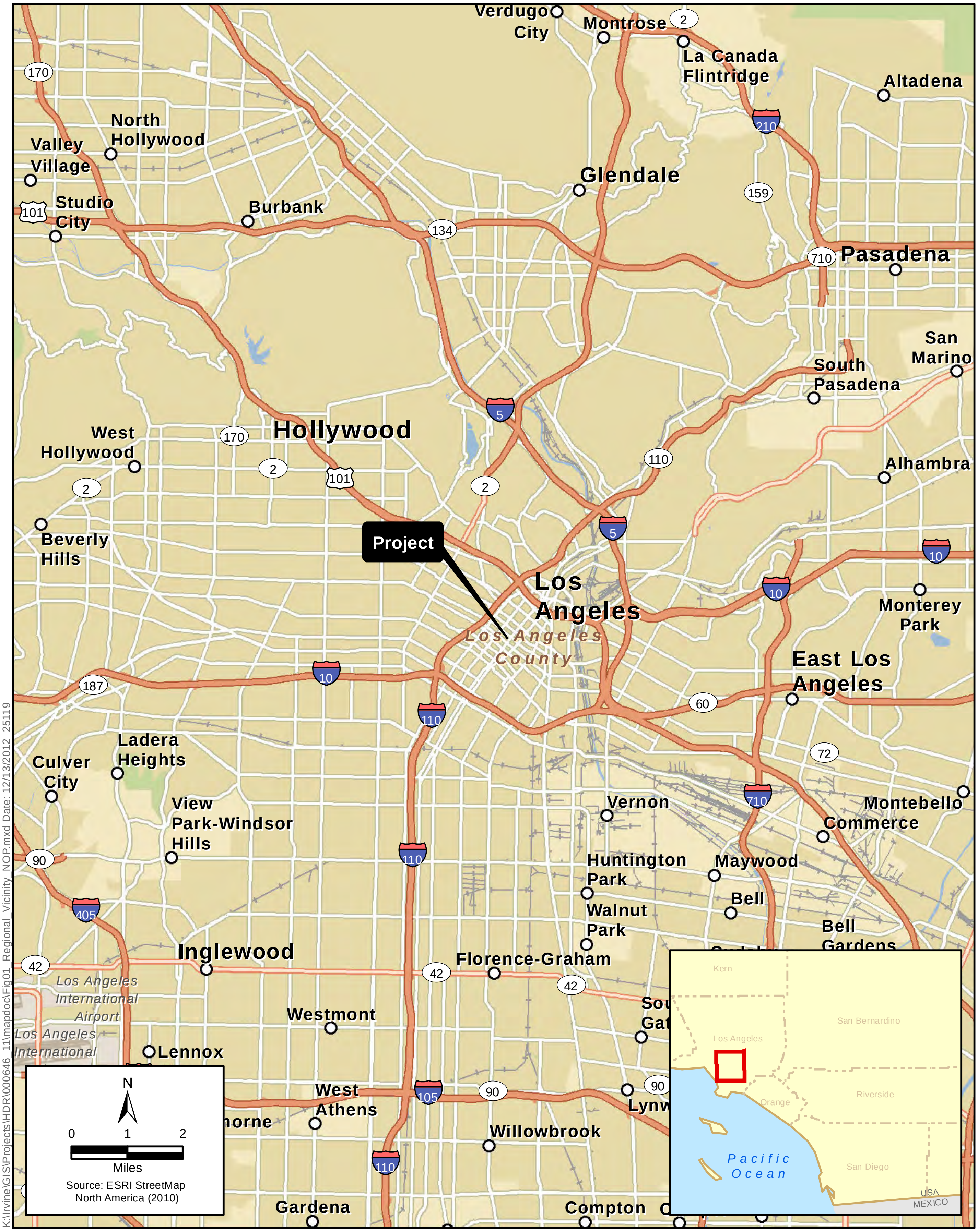
Due to the time limits mandated by state law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to: City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
Attention: Jim Doty
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
or
Via email to: jim.doty@lacity.org

A public scoping meeting will be held to receive public comments regarding the scope and content of the environmental information to be included in the Draft EIR/EA. The Bureau of Engineering encourages all interested individuals to attend this meeting. The location, date, and time of the public scoping meetings for this project are as follows:

Date: Wednesday, January 23rd 2013
Time: 10:00 a.m. to 11:00 a.m. and from 6:30 p.m. to 8:00 p.m.
Location: Caltrans/LADOT, 100 South Main Street, Conference Room 1.A

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities. Sign language interpreters, assistive listening devices, or other auxiliary aids and/or services may be provided upon request. Requests should be made 72 hours prior to the meeting by calling (213) 922-3000.



K:\Irvine\GIS\Projects\HDR\00646_11\mapdoc\Fig01_Regional_Vicinity_NOP.mxd Date: 12/13/2012 25119

Figure 1
Regional Location Map
Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 2
Locally Preferred Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 3
9th Street Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

CITY OF LOS ANGELES
CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

(Article I - City CEQA Guidelines)

Council District: 14 Date: January 3, 2013

Lead City Agency: Department of Public Works, Bureau of Engineering

Project Title: Restoration of Historic Streetcar Service in Downtown Los Angeles

I. INTRODUCTION

A. Purpose of an Initial Study

The California Environmental Quality Act (CEQA) was enacted in 1970 for the purpose of providing decision-makers and the public with information regarding environmental effects of proposed projects; identifying means of avoiding environmental damage; and disclosing to the public the reasons behind a project's approval even if it leads to environmental damage. The Bureau of Engineering Environmental Management Group (EMG) has determined the proposed project is subject to CEQA and no exemptions apply. Therefore, preparation of an initial study is required.

An initial study is a preliminary analysis conducted by the lead agency, in consultation with other agencies (responsible or trustee agencies, as applicable), to determine whether there is substantial evidence that a project may have a significant effect on the environment. If the initial study concludes that the project, with mitigation, may have a significant effect on the environment, an environmental impact report should be prepared; otherwise the lead agency may adopt a negative declaration or mitigated negative declaration.

This Initial Study (IS) has been prepared in accordance with CEQA (Public Resources Code §21000 et seq.), the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended July 31, 2002).

B. Document Format

This Initial Study is organized into eight sections as follows:

<u>Section I, Introduction:</u> provides an overview of the project and the CEQA environmental documentation process.

Section II, Project Description: provides a description of the project location, project background, and project components.

Section III, Existing Environment: provides a description of the existing environmental setting with focus on features of the environment that could potentially affect the proposed project or be affected by the proposed project.

Section IV, Potential Environmental Effects: provides a detailed discussion of the environmental factors that would be potentially affected by this project as indicated by the screening checklist in Appendix A.

Section V, Mitigation Measures: provides the mitigation measures that would be implemented to ensure that potential adverse impacts of the proposed project would be reduced to a less than significant level.

Section VI, Preparation and Consultation: provides a list of key personnel involved in the preparation of this report and key personnel consulted.

Section VII, Determination – Recommended Environmental Documentation: provides the recommended environmental documentation for the proposed project; and,

Section VIII, References: provides a list of reference materials used during the preparation of this report.

C. CEQA Process

To begin the CEQA process, the lead agency identifies a proposed project. The lead agency then prepares an initial study to identify the preliminary environmental impacts of the proposed project. The Initial Study for the Restoration of Historic Streetcar Service in Downtown Los Angeles project determined that the proposed project could have significant environmental impacts that would require further study and/or the implementation of mitigation measures and the lead agency has decided to prepare an Environmental Impact Report/Environmental Assessment (EIR/EA). A Notice of Preparation is prepared to notify public agencies and the general public that the lead agency is starting the preparation of an EIR/EA for the proposed project. The Notice of Preparation and initial study are circulated for a 30-day review and comment period. During this review period, the lead agency requests comments from agencies, interested parties, stakeholders, and the general public on the scope and content of the environmental information to be included in the EIR/EA.

After the close of the 30-day review and comment period, the lead agency continues the preparation of the Draft EIR/EA and associated technical studies (if any). Once the Draft EIR/EA is complete, a Notice of Availability is prepared to inform the public agencies and the general public of the document and the locations where the document can be reviewed. The Draft EIR/EA and Notice of Availability are circulated for a 45-day review and comment period. The purpose of this review and comment period is to provide public agencies and the general public an opportunity to review the Draft EIR/EA and comment on the adequacy of the analysis and the findings of the lead agency regarding potential environmental impacts of the proposed project. After the close of the 45-day review and comment period, responses to all comments received on the Draft EIR/EA are prepared. The lead agency prepares a Final EIR/EA, which incorporates the Draft EIR/EA or a revision to the Draft EIR/EA, Draft EIR/EA comments and list of commenters, and a response to comments discussion. In addition, the lead agency must prepare the findings of fact for each significant effect identified, a statement of overriding considerations if there are significant impacts that cannot be mitigated, and a mitigation monitoring and reporting program to ensure that all proposed mitigation measures are implemented.

The Board of Public Works will consider the Final EIR/EA, together with any comments received during the public review process, and may certify the Final EIR/EA and approve the project or refer the Final EIR/EA and project with a recommendation to the City Council on whether or not to certify the Final EIR/EA and approve the project. If referred to Council, one or more Council committees may then review the proposal and documents and make its own recommendation to the full City Council. The full City Council would consider the Final EIR/EA, together with any comments received during the review and comment process, in the decision to certify the Final EIR/EA and approve or disapprove the project.

During the project approval process, persons and/or agencies may address either the Board of Public Works or the City Council regarding the project. Public notification of agenda items for the Board of Public Works, Council committees, and City Council is posted 72 hours prior to the public meeting. The Council agenda can be obtained by visiting the Council and Public Services Division of the Office of the City Clerk at City Hall, 200 North Spring Street, Suite 395; by calling 213/978-1047, 213/978-1048 or TDD/TTY 213/978-1055; or via the internet at http://eng.lacity.org/techdocs/emg/

Within five days of project approval, the City will file a Notice of Determination with the County Clerk. The Notice of Determination will be posted by the County Clerk within 24 hours of receipt. This begins a 30-day statute of limitations on legal challenges to the approval under CEQA. The ability to challenge the approval in court may be limited to those persons who objected to the approval of the project, and to issues that were presented to the lead agency by any person, either orally or in writing, during the public comment period.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

II. PROJECT DESCRIPTION

A. Location

The proposed project, which would be located in Downtown Los Angeles, would travel through the following neighborhoods/districts (from north to south): the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, the Fashion District, and the Los Angeles Sports and Entertainment District, all of which are located within the Central City Community Plan area of the City of Los Angeles. The proposed 3.8-mile project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area comprised primarily of commercial land uses with a mix of residential, public, and entertainment uses interspersed throughout the project vicinity. Figure 1 depicts the regional location of the proposed project. Figures 2 and 3 depict the alignments of the project alternatives.

B. Purpose

The proposed project has two overarching objectives and several sub-objectives.

- Enhance mobility and transit circulation in Downtown Los Angeles through the following:
  - Connect major districts, destinations, and activity centers.
  - Improve transit coverage and circulation.
  - Provide simple, localized, high frequency service.
  - Alleviate traffic and reduce parking demand.
  - Serve transit-dependent populations.
  - Improve transit accessibility.
- Support the growth and revitalization of Downtown Los Angeles, including its historic districts through the following:
  - Revitalize geographically isolated, economically depressed areas.
  - Support smart, sustainable growth.
  - Foster a more livable Downtown.
  - Encourage historic restoration and transit-oriented development.
  - Strengthen Downtown’s economic competitiveness.

The proposed project aims to address the challenges of navigating a disconnected downtown area by providing a transportation link between various districts. By connecting residential and employment hubs, shopping districts, civic resources, cultural institutions, historic landmarks, entertainment venues, and transit services, the project would increase mobility and accessibility for people who live and work in Downtown, as well as for visitors. The proposed project would promote transit use and walking within Downtown while reducing the need to travel by automobile.

In concert with local efforts, the project is intended to aid in the revitalization of many Downtown districts, including the Historic Core. Local initiatives such as Bringing Back

Broadway (an effort to restore Broadway, which contains the highest concentration of historic theaters in the western United States), redevelopment plans, street improvements, and proposed design guidelines have been proposed to restore the area's historic significance and stimulate economic development opportunities. The reintroduction of streetcar service is proposed to facilitate the renewal of the Historic Core and also support growth and revitalization of the underdeveloped neighborhoods in the area.

C. Description

There are two alternative alignments that are under consideration for the Restoration of Historic Streetcar Service Project:

Locally Preferred Alternative – The proposed project would construct and implement streetcar service along a one-way loop that would run from 1st Street on the north, through Downtown Los Angeles, to 11th Street on the south. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn on 1st Street in the eastbound direction. From 1st Street, the streetcar would turn southbound, down Broadway, travelling 1.25 miles to 11th Street where it would turn westbound. The streetcar would then turn north on Figueroa Street and travel 0.5 mile north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street, then complete the circuit and turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall. Figure 2 depicts the LPA alignment.

9th Street Alternative – The 9th Street Alternative would follow the same alignment as the LPA but would run eastbound on 9th Street between Figueroa Street and Hill Street rather than 7th Street. Figure 3 depicts the 9th Street alignment.

Under both alternatives, there are three potential sites for the maintenance and storage facilities. These include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11st Street and Grand Avenue.

Construction activities for both alternatives would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street. Furthermore, activities would include pavement removal, excavation, track installation, installation of concrete track slab and rails, paving and striping. Other activities would include installation of specialty system work such as traction power, overhead contact wires, communications, and train/traffic signaling, curb, gutter, stop improvements, and overhead contact system (OCS) pole foundations. Unaffected traffic lanes would remain open during construction. Construction would take place between the hours of 7:00 a.m.

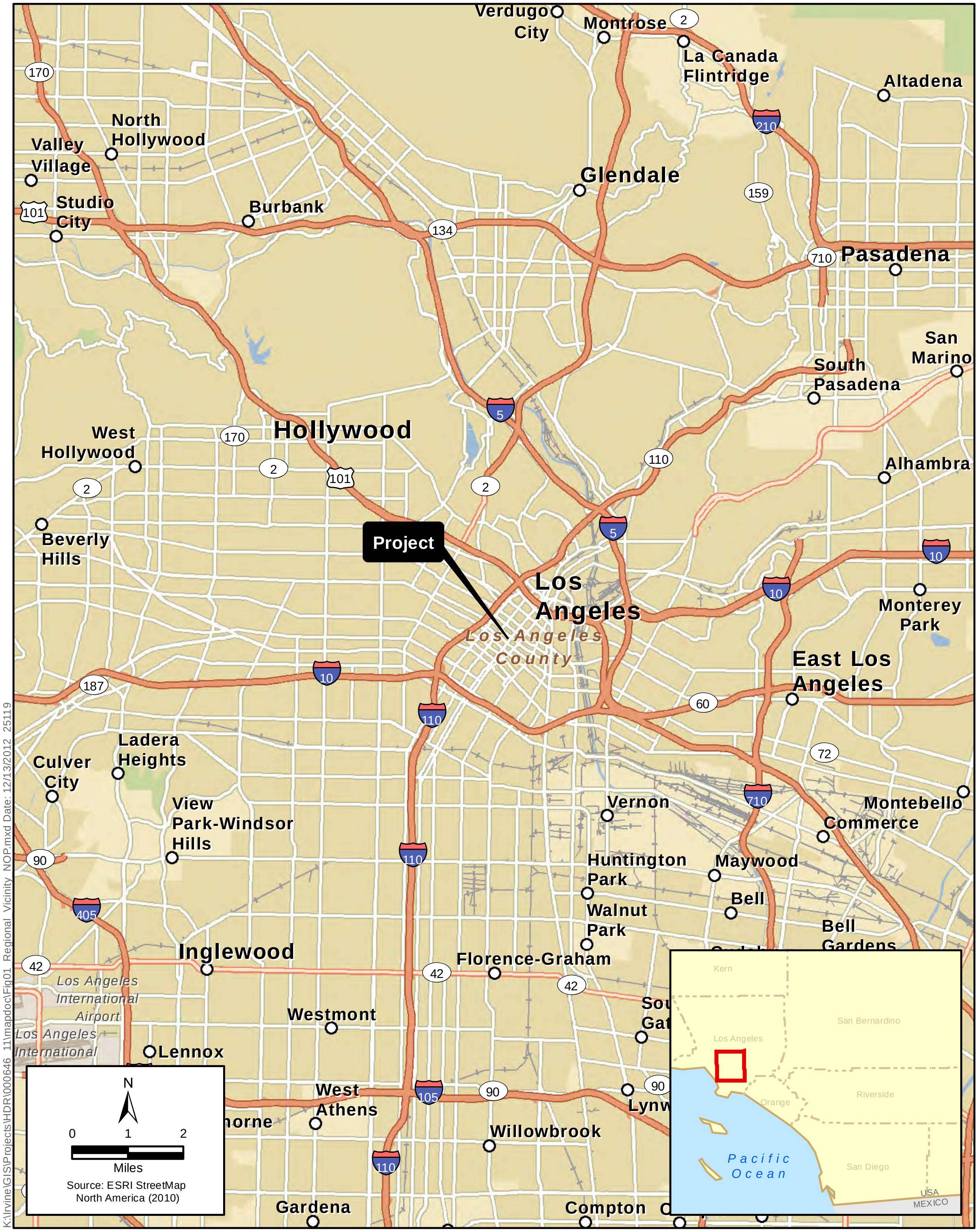


Figure 1
Regional Location Map
Restoration of Historic Streetcar Service in Downtown Los Angeles

ICF INTERNATIONAL

Figure 2
Locally Preferred Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 3
9th Street Alternative
Restoration of Historic Streetcar Service in Downtown Los Angeles

and 9:00 p.m., except for intersection construction, which would take place during nighttime hours.

The streetcar system would run within existing traffic lanes and would consist of a fleet of electric-powered vehicles utilizing a track and roadway configuration allowing for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to approximately 600 volts direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide, and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loop, and there may be another TPSS at the Maintenance and Storage Facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops would be approximately 70 to 120 feet long, and would be generally located along the sidewalk or as a sidewalk extension towards the traffic lane to meet the streetcar vehicle. An exception to this is the stop on Grand Avenue north of 2nd Street that is planned in the median with crosswalks to either side of the street. Streetcar stops would generally be placed every block in the north-south direction, and every other block in the east-west direction.

The streetcar system would operate seven days a week with a total of 3 to 6 streetcars running at any given time. Hours of operation would be approximately 6:00 AM to 12:00 AM on some days, and approximately 6:00 AM to 2:30 AM on some days, depending on demand. The run time for the round-trip would be approximately 35 minutes.

The analysis in this document assumes that, unless otherwise stated, the project would be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards including but not limited to:

- Los Angeles Municipal Code (Reference 17)
- Bureau of Engineering Standard Plans (Reference 24)
- Standard Specifications for Public Works Construction (Reference 1)
- Work Area Traffic Control Handbook (Reference 2)
- Additions and Amendments to the Standard Specifications for Public Works Construction (Reference 23).

III. EXISTING ENVIRONMENT

The project corridor is within the Central City Plan area. The project is consistent with the community plan’s policies. The land use designations of the properties adjacent to the proposed corridor are composed primarily of high density residential, public facilities, commercial land uses, with numerous office buildings, regional center commercial, surface parking lots, and retail shops. The zoning designations for the properties adjacent to the proposed corridor comprise of commercial (C5, C2), open space (OS-1XL), multiple dwelling zone (R5), and public facilities (PF).

The project study area is a dense urban core covering 2.05 square miles and is comprised primarily of commercial land uses, with numerous office buildings and retail shops. In addition, the project study area is home to the region's fastest growing residential area of over 45,000 residents. In recent years, there has been an increasing amount of residential and mixed land uses (especially in South Park and the Historic Core), with 9,391 units of housing having been built within Downtown since 2000 (an increase of 89 percent), and an additional 11,831 units are in planning (permitted, undergoing the approval process, or under consideration) (Reference 31). The proposed project area also has a substantial number of historic buildings. Some of these buildings have been restored; however, many remain vacant or abandoned totaling over one million square feet of unused commercial and residential space. Surface parking lots are also prevalent in the proposed project area.

The project study area is the region's largest employment center of with over 500,000 employees, and one of the region's largest tourist destinations with over 10 million annual visitors (Reference 31). The project study area is also home to many of the region's historic and cultural attractions, such as Bunker Hill (Disney Concert Hall, Museum of Contemporary Art, and future Broad Museum), Broadway (historic theaters and architecture), and Los Angeles Sports and Entertainment District (Staples Center, Nokia Theater, Convention Center, LA Live, Grammy Museum, and potential football stadium). The project study area is a regional hub for transit service, with the highest volumes of boardings/alightings in the Metro rail and bus system as well as connections to Metrolink, Amtrak, and other regional and intercity transportation.

IV. POTENTIAL ENVIRONMENTAL EFFECTS

The environmental factors checked below would be potentially affected by this project, involving at least one potentially significant impact as indicated by the checklist in Appendix A. A detailed discussion of these potential environmental effects follows.

☒ Aesthetics	☐ Agriculture and Forestry Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☒ Geology /Soils
☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☒ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Utilities / Service Systems	☒ Mandatory Findings of Significance

A. Aesthetics

The proposed streetcar would travel through Downtown Los Angeles, an area that contains numerous historic buildings, districts, and architecturally significant resources that may be considered aesthetic/visual resources. The proposed project would alter the visual landscape of the project study area by adding the proposed streetcar system, which would include streetcar vehicles, overhead contact systems, and platforms, all of which would be visible to viewer groups in the project study area. These issues will be further evaluated in the EIR/EA.

B. Agriculture and Forestry Resources

An initial screening determined that the proposed project would cause no impact or less-than-significant impacts. (See Appendix A.)

C. Air Quality

The project is located in the South Coast Air Basin (Basin), within the South Coast Air Quality Management District (SCAQMD). The SCAQMD has established standards for air quality constituents generated by construction and by operational activities for such pollutants as ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and particulate matter (PM). The SCAQMD maintains an extensive air quality monitoring network to measure criteria pollutant concentrations throughout the Basin. The Basin is designated a severe non-attainment area for O_3, a serious non-attainment area for particulate matter less than 10 microns in size (PM_{10}), and a non-attainment area for particulate matter less than 2.5 microns in size ($PM_{2.5}$). The Basin is a maintenance area for CO and nitrogen dioxide (NO_2) and is in attainment for SO_2.

During construction of the proposed project, emissions may be generated by grading activities, construction workers traveling to and from the project site, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment. Construction emissions would be short-term in nature and would be limited only to the time period when construction activity is taking place. Due to the nature of the project, construction emissions are anticipated to be below SCAQMD thresholds. However, an evaluation is needed to determine if construction related emissions are potentially significant. This issue will be evaluated further in the EIR/EA.

The streetcar system would consist of electric vehicles, and therefore, no operational emissions would result from the streetcar vehicles. However, the streetcar project would result in an increase in electrical use. Accordingly, there is a potential for increased emissions from power plants as a result of operation of the streetcar project. Although the proposed project has the potential to reduce long-term vehicle emissions by reducing traffic, depending upon proposed trip generation and changes to traffic circulation (of the proposed project or alternatives), the proposed project may increase vehicular traffic in the vicinity of the project site. These issues will be further evaluated in the EIR/EA.

D. Biological Resources

The California Department of Fish and Game (CDFG), *California Natural Diversity Database* lists 19 occurrences of species that are federally and/or state listed as endangered or threatened, or a special-status animal or plant species within the Los Angeles topographic quadrangle, as follows:

Species	Status	Comments
Burrowing owl (*Athene cunicularia*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Southwestern willow flycatcher (*Empidonax traillii extimus*)	Endangered (Federal and State)	No habitat on site
Bank Swallow (*Riparia riparia*)	Threatened (State)	No habitat on site
Least Bell's vireo (*Vireo bellii pusillus*)	Endangered (Federal and State)	No habitat on site
Hoary bat (*Lasiurus cinereus*)	None	No habitat on site
Western mastiff bat (*Eumops perotis californicus*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Big free-tailed bat (*Nyctinomops macrotis*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
American badger (*Taxidea taxus*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Coast horned lizard (*Phrynosoma blainvillii*)	Species of Special Concern (California Department of Fish and Game)	No habitat on site
Walnut Forest	None	No habitat on site
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	Presumed extinct	No habitat on site
Greata's aster (*Symphyotrichum greatae*)	Rare, threatened, or endangered	No habitat on site
Robinson's pepper-grass (*Lepidium virginicum* var. *Robinsonii*)	Rare, threatened, or endangered	No habitat on site
Davidson's saltscale (*Atriplex serenana* var. *Davidsonii*)	Rare, threatened, or endangered	No habitat on site
Round-leaved filaree (*California macrophylla*)	Rare, threatened, or endangered	No habitat on site
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	Presumed extinct	No habitat on site
Prostrate vernal pool navarretia (*Navarretia prostrate*)	Rare, threatened, or endangered	No habitat on site
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	Rare, threatened, or endangered	No habitat on site
Plummer's mariposa-lily (*Calochortus plummerae*)	Plant of limited distribution	No habitat on site

An initial screening determined that the proposed project would cause no impact or less than significant impacts. (see Appendix A)

E. Cultural Resources

The proposed streetcar would travel through some of the oldest areas of Downtown Los Angeles, with numerous historic buildings and landmarks located along the alignment. While the proposed project would be constructed mostly within existing roadways, there is a potential for both direct and indirect impacts to historical resources as a result of construction and operation.

The project area is comprised of existing roadways and other urban land uses; accordingly, construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct traction power substations and maintenance facilities. Therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction. These issues will be evaluated further in the EIR/EA.

F. Geology and Soils

The site is not located within an Alquist-Priolo Special Studies Zone. Thus, the potential for ground surface rupture at the site is considered to be low. However, there is a designated landslide Seismic Hazard Zone adjacent to Hill Street and the northern end of the project alignment is located within a liquefaction Seismic Hazard zone.(Reference: 26)

Known regional faults that could produce significant ground shaking at the site include the Elysian Park Thrust, Hollywood, Raymond, Compton Thrust, Newport-Inglewood, Verdugo, Santa Monica, Sierra Madre, and Whittier Faults, among others. The closest of these are the Elysian Park Thrust, Hollywood, and Raymond Faults; these faults have surface projections of potential rupture area located at distances of approximately one mile, four miles, and four miles from the site, respectively. Given that the project is located in a seismically active region, there is a potential to expose people and structures to risks of loss, injury, or death. In addition, project construction would involve excavation exposing soils to wind or water which may result in soil erosion or loss of topsoil. In general, construction would comply with applicable building codes and requirements pertaining to seismic and soil safety. These issues will be evaluated further in the EIR/EA.

G. Greenhouse Gas Emissions

SCAQMD has recommended a greenhouse gas significance threshold of 10,000 metric tons per year of carbon dioxide equivalent (CO_2) for assessing the significance of a proposed project's potential GHG emissions. Greenhouse gas emissions may be generated by grading activities, construction workers traveling to and from the project site, delivery and hauling of construction supplies and debris, and fuel combustion by on-site construction equipment. Construction emissions would be short-term in nature and would be limited only to the time period when construction activity is taking place. An evaluation is needed to determine if construction-related emissions are potentially significant. This issue will be evaluated further in the EIR/EA. Operation would also result in an increase in electrical usage which would generate GHG emissions. The proposed project would also change traffic circulation in the Downtown area, which may result in increased congestion in some locations. This issue will be further evaluated in the EIR/EA.

H. Hazards and Hazardous Materials

Construction activities would be short-term and limited in nature and may involve limited transport, storage, use, or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated. According to the Department of Toxic Substances Control, EnviroStor database, there are five known cleanup sites within the vicinity of the proposed project including two sites operating with a tiered permit for toxic substance treatment adjacent to the project site. If unknown contamination were identified during project construction or a spill were to occur during construction, agencies with jurisdiction would be notified and immediate measures would be taken to ensure the health and safety of the public and workers and to protect the environment. Any excavation, treatment, and/or disposal of contaminated soils would be conducted to the satisfaction of the applicable regulatory agencies, which could include the Los Angeles Fire Department (LAFD), Los Angeles County Fire Department (LACoFD), Los Angeles Regional Water Quality Control Board (LARWQCB) and/or the California Department of Toxic Substances Control (DTSC). Adherence to regulations set forth by local, state, and federal regulatory agencies would reduce the potential for hazardous materials impacts. Operation of the proposed project is not anticipated to involve the routine handling or transport of hazardous materials or waste; however, routine use of fuels, lubricating fluids, and solvents is likely as part of routine maintenance of the streetcar fleet. These issues will be further evaluated in the EIR/EA.

I. Hydrology and Water Quality

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

J. Land Use and Planning

The project corridor is within the Central City Community Plan area. The land use designations of the properties adjacent to the proposed corridor are composed primarily of high density residential, public facilities, and commercial land uses, with numerous office buildings, regional center commercial, surface parking lots, and retail shops. The zoning designations for the properties adjacent to the proposed corridor include commercial (C5, C2), open space (OS-1XL), multiple dwelling zone (R5), and public facilities (PF) designations. The proposed project would include construction of a maintenance facility. Three potential sites have been identified. These sites contain commercial land uses. Accordingly, the proposed project would result in a potential change in land use. The proposed improvements are not anticipated to be inconsistent with existing land use policies. Nonetheless, impacts related to the change in land use and consistency with existing land use policies and zoning will be further addressed in the EIR/EA.

K. Mineral Resources

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

L. Noise

Noise within the vicinity of the project is dominated by traffic noise on Downtown Los Angeles streets. Noise levels in the vicinity of the project would increase during the construction phase. Should construction occur during nighttime hours, this impact could be potentially significant. Analysis of the proposed project's consistency with local noise ordinances and guidelines based on existing land uses within and surrounding the project corridor will be completed. This issue will be further evaluated in the EIR/EA.

M. Population and Housing

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

N. Public Services

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

O. Recreation

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

P. Transportation/Traffic

Traffic impacts, if any, would be primarily due to changes in circulation patterns or conflicts between streetcars and vehicles, bicyclists or pedestrians. These issues, as well as consistency with the Los Angeles County Congestion Management Program, will be further evaluated in the EIR/EA.

Q. Utilities and Service Systems

An initial screening determined that the proposed project would cause no impact or less than significant impacts. See Appendix A.

R. Mandatory Findings of Significance

Based on the foregoing, it has been determined that:

There is a potential for both direct and indirect impacts to historical resources as a result of construction and operation of the project. Potential impacts associated with the proposed project would not substantially affect the habitat of a wildlife species, cause a species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, affect a rare or endangered species. Construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct associated traction power substations and maintenance facilities to support the project; therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction that may have the potential to eliminate important examples of history or prehistory. These issues will be evaluated further in the EIR/EA.

The proposed project would be constructed primarily within the existing roadway right-of-way. One of the proposed project's objectives is to encourage revitalization of the area. The proposed project does not involve the construction of habitable structures or the conversion of large tracts of undisturbed land. However, the proposed project could increase traffic congestion and result in increased motor vehicle pollutant emissions. The cumulative impacts of the proposed project will be analyzed further in the EIR/EA

The proposed project has the potential to degrade the quality of the environment during construction and operation with regard to several resource areas as indicated in Section IV of the Initial Study. The project's potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals will be further evaluated in the EIR/EA.

Implementation of the proposed project would involve mostly construction impacts, which would be temporary. After construction, there could be operational impacts from the proposed project. This topic will be analyzed further in the EIR/EA.

V. <u>MITIGATION MEASURES</u>

Any applicable mitigation measures are to be identified in the EIR/EA.

VI. NAME OF PREPARER

ICF International

Lee Lisecki, Project Director

Paulette Franco, Project Manager

Namrata Cariapa, Deputy Project Manager

Peter Feldman, Environmental Analyst

VII. DETERMINATION - RECOMMENDED ENVIRONMENTAL DOCUMENTATION

A. Summary

As described in this Initial Study, the environmental factors listed below would be potentially affected by the proposed project and will be further evaluated in the EIR/EA.

- Aesthetics
- Air Quality
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise and Vibration
- Transportation/Traffic

B. Recommended Environmental Documentation

On the basis of this initial evaluation:

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. .

Prepared By: Namrata Cariapa

Approved By: Gary Lee Moore, P.E.
City Engineer

By: James E Doty
Jim Doty

Environmental Affairs Officer

Environmental Management Group

APPENDICES

A. Environmental Screening Checklist

VIII. REFERENCES:

The following sources were used in the preparation of this document. Sources not available via the internet are available by appointment for review at the offices of the Bureau of Engineering, 650 South Spring Street, Suite 500, Los Angeles.

1. American Public Works Assoc. S. California Chpt. *Standard Specifications for Public Works Construction*. [Std Specs]

2. American Public Works Assoc. S. California Chpt. *Work Area Traffic Control Handbook*. [WATCH]

3. California Building Standards Commission, 1994. *Uniform Building Code*, [California Code of Regulations, Title 24, Part 2]. Table 18-1-B. {UBC]

4. California Dept. of Conservation, 2010. Farmland Mapping and Monitoring Program, Los Angeles County Important Farmland. Available: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/los10.pdf

5. California Dept. of Conservation, Div. of Mines and Geology. *Geologic Map of California: Los Angeles Sheet*. [Geol Map LA]

6. California Dept. of Conservation, Div. of Mines and Geology, Special Publication 42, *Fault Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Map.* Revised 1997 and Supplemented 1999. [CDC 42] Available online at http://www.consrv.ca.gov/CGS/rghm/ap/index.htm

7. California Dept. of Conservation, Div. of Land Resource Protection, Farmland Mapping and Monitoring Program. Important Farmland in California, January 2009. [Farmland Map] Available online at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2006/fmmp2006_08_11.pdf

8. California Dept. of Fish and Game. *California Natural Diversity Database*. [CNDDB] Available online at www.dfg.ca.gov/whdab/cnddb.htm

9. California Dept. of Fish and Game. *Biogeographic Information & Observation Database*. Available online at http://bios.dfg.ca.gov/ [BIOS]

10. California Dept. of Fish and Game. *Laws and Regulations Directing Environmental Review and Species Take Programs.* Available online at http://www.dfg.ca.gov/wildlife/nongame/regcode.html

11. California Dept. of Parks and Recreation, Office of Historic Preservation. *California Historical Resources Information System.* South Central Coastal Information Center. [CHRIS]

12. California Dept. of Toxic Substances Control. *EnviroStor Database*. [EnviroStor] Available online at http://www.envirostor.dtsc.ca.gov/public/default.asp

13. California Secretary for Resources. *Guidelines for Implementation of the California Environmental Quality Ac*t. Title 14. California Code of Regulations. Chapter 3. [CEQA Guidelines] Available online at http://www.califaep.org

14. California State Water Resources Control Board, *Geotracker Database*. Available online at http://geotracker.swrcb.ca.gov.

15. City of Los Angeles, City Council. *Municipal Code*. [LAMC] Available online at http://www.amlegal.com/los_angeles_ca/

16. City of Los Angeles, City Council. *Protected Tree Ordinance*. Los Angeles Municipal Code. Section 1. Subdivision 12 of Subsection A of Section 12.21. [Tree Ord.] Available online at http://www.amlegal.com/los_angeles_ca/

17. City of Los Angeles, Dept. of City Planning. *General Plan*. Including community plans and technical elements. [General Plan] Available online at http://planning.lacity.org/

18. City of Los Angeles. Dept. of City Planning. General Plan. Safety Element. Inundation and Tsunami Hazard Areas map (Exhibit G) (adopted by City Council November 26, 1996) [Inundation Map] Available online at http://planning.lacity.org/

19. City of Los Angeles. Dept. of City Planning. General Plan. Safety Element. Alquist-Priolo Special Study Zones & Fault Rupture Study Areas map (Exhibit A) (adopted by City Council November 26, 1996) [Inundation Map] Available online at http://planning.lacity.org/

20. City of Los Angeles, Dept. of City Planning. *Zoning Information and Map Access System (ZIMAS)*. Available online at http://zimas.ci.la.ca.us.

21. City of Los Angeles, Dept. of Environmental Affairs. *GREEN LA. An Action Plan to Lead the Nation in Fighting Global Warming*. May 2007. [GREEN LA] Available online at http://www.ci.la.ca.us/EAD/pdf/GreenLA_CAP_2007.pdf

22. City of Los Angeles, Dept. of Environmental Affairs. *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles*. 2006. [Thresholds] Available online at http://www.ci.la.ca.us/EAD/programs/thresholdsguide.htm

23. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Additions and Amendments to the 2006 Edition and 2008 Cumulative Supplement of the Standard Specifications for Public Works Construction*. Available online at *http://eng.lacity.org/techdocs/speclibrary/index.htm*

24. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Standard Plans*. [Std Plans] Available online at http://eng.lacity.org/techdocs/stdplans/

25. City of Los Angeles, Dept. of Public Works. *Tree Removal Mitigation Agreement Between the Bureaus of Engineering and Street Maintenance*. Adopted by the Board of Public Works October 15, 1990. [BOE/BSS Tree Policy]

26. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *NavigateLA*. Available online at http://boemaps.eng.ci.la.ca.us.

27. City of Los Angeles, Dept. of Public Works, Bureau of Engineering. *Policies for the Installation and Preservation of Landscaping and Trees on Public Property*. Special Order SO18-0372. Adopted by City Council September 21, 1971. [Tree Policy] Available online at http://eng.lacity.org/techdocs/sporders/index.cfm?dsp_year=1972

28. City of Los Angeles, Dept. of Recreation and Parks. *Urban Forest Program – Revised October 2004.* Available online at http://www.laparks.org/dos/forest/urbanforestprogram.htm

29. County of Los Angeles Department of Public Works, *2007 Annual Report on the Countywide Siting Summary Plan and Countywide Siting Element,* June 2008. Available online at http://dpw.lacounty.gov/swims/default.asp

30. Dibblee, Thomas W. Jr., *Geologic Map of the Hollywood & Burbank Quadrangle.*

31. Los Angeles County Metropolitan Transit Authority, 2012. *Restoration of Historic Streetcar Service in Downtown Los Angeles, Final Alternatives Analysis (AA),* January 12, 2012.

32. South Coast Air Quality Management District, 1993. *CEQA Air Quality Handbook*. [AQMD Handbook]

33. U.S. Dept. Interior Fish & Wildlife Service. *National Wetlands Inventory*. Overlays for U.S. Dept. Interior Geological Survey. 7.5-minute Map Series (Topographic). [Wetlands Map]

34. U.S. Dept. Interior Geological Survey. *7.5-minute Map Series* (Topographic). [USGS Quad]

35. U.S. Federal Emergency Management Agency. *Flood Insurance Rate Maps*. Community Panel number 060137 00__ C. [FIRM] Available online at http://www.cityofla.org/

36. Upper Los Angeles River Area Watermaster, Spring 1990. *Upper Los Angeles River Area Groundwater Contour Map*. [Groundwater Map]

APPENDIX A

ENVIRONMENTAL SCREENING CHECKLIST

A brief explanation is provided for all answers except “No Impact” answers that are adequately supported by the information sources cited following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
1. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project introduces incompatible visual elements within a field of view containing a scenic vista or substantially alters a view of a scenic vista. Reference: 17 (Thresholds A.1 & A.2)

Explanation: There are no scenic vistas on or in near proximity to the project site.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐

Standard: A significant impact may occur where scenic resources within a state scenic highway would be damaged or removed as a result of the proposed project. Reference: 17 (Thresholds A.1 & E.3), 17(General Plan)

Explanation: Refer to Section IV.A of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project introduces incompatible visual elements to the project site or visual elements that would be incompatible with the character of the area surrounding the project site. Reference: 17 (Thresholds A.1 and A.3)

Explanation: Refer to Section IV.A of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Standard: A significant impact would occur if the proposed project caused a substantial increase in ambient illumination levels beyond the property line or caused new lighting to spill-over onto light-sensitive land uses such as residential, some commercial and institutional uses that require minimum illumination for proper function, and natural areas. Reference: 17 (Thresholds A.4)

Explanation: New lighting elements would be limited to the minimum levels necessary for safety and would be similar to lighting levels in the project area. The new light fixtures would be designed to prevent spillover. There are no nearby natural areas. Therefore, this will not be further evaluated in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
2. AGRICULTURE AND FOREST RESOURCES – Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

Standard: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Reference: 13) A significant impact may occur if the proposed project were to result in the conversion of state-designated agricultural land from agricultural use to another non-agricultural use. Reference: 4

Explanation: According to the Farmland Mapping & Monitoring Program mapping for Los Angeles County (2010), there is no designated prime farmland, unique farmland, or farmland of statewide importance in the vicinity of the project. Reference: 4

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were to result in the conversion of land zoned for agricultural use, or indicated under a Williamson Act contract, from agricultural use to another non-agricultural use.

Explanation: The project site and adjacent parcels are not zoned for agricultural uses and not subject to a Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

Standard: In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Reference: 7)

Explanation: There is no forestland, timberland, or timberland zoned Timberland Production on or near the project site.

d) Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒

Standard: In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Reference:

Explanation: There is no forestland on or near the project site.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland, to non-agricultural use?	☐	☐	☐	☒

Standard: A significant impact may occur if a project results in the conversion of farmland to another non-agricultural use.

Explanation: Refer to discussion under 2 (a) and 2 (b) above.

3. AIR QUALITY – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐

Standard: A significant impact may occur if the project was inconsistent with or obstruct the implementation of the Air Quality Element of the City's General Plan or the Air Quality Management Plan (AQMP). Reference: 17(Thresholds B.1 to B.3), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project violated any SCAQMD air quality standard. The SCAQMD has set thresholds of significance for reactive organic gases (ROG), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide ($S0_2$), and particulate matter (PM10) emissions resulting from construction and operation in the South Coast Air Basin. Reference: 17(Thresholds B.1, B.2), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project would result in a cumulatively considerable net increase of a criteria pollutant for which the South Coast Air Basin exceeds federal and state ambient air quality standards and has been designated as an area of non-attainment by the USEPA and/or California Air Resources Board. The South Coast Air Basin is a non-attainment area for carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM10), and fine particulate matter (PM2.5). Reference: Reference: 17(Thresholds B.1, B.2), 31(AQMD Handbook)

Explanation: Refer to Section IV.C of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐

Standard: A significant impact may occur if construction or operation of the proposed project generated pollutant concentrations to a degree that would significantly affect sensitive receptors. Reference: 17 (Thresholds B.1 to B.3)

Explanation: Refer to Section IV.C of the Initial Study.

Issues

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Standard: During construction, sources of odor are diesel emissions from construction equipment and volatile organic compounds from sealant applications or paving activities. However, these odors would be temporary and localized. Nonetheless, applicable best management practices such as those in SCAQMD Rule 431 (Diesel Equipment) would, in addition to minimizing air quality impacts, also help minimize potential construction odors. Reference: 17 (Thresholds B.1 & B.2)

Explanation: Refer to Section IV.C of the Initial Study.

4. BIOLOGICAL RESOURCES – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project would remove or modify habitat for any species identified or designated as a candidate, sensitive, or special status species in local or regional plans, policies, or regulation, or by the state or federal regulatory agencies cited. Reference: 17 (Thresholds C)

Explanation: As described in the Initial Study, Section IV.D, the Los Angeles Quadrangle contains 19 occurrences of species that are federally and/or state listed as endangered or threatened. The project is located in a highly urbanized part of the City of Los Angeles. The existing project corridor is sparsely landscaped with street trees lining the roadways along the project alignment. As part of the project, some of this landscaping would be removed. A landscape plan would be prepared and presented to the Department of City Planning for approval. The project site is not suitable habitat for any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. In addition, there are no known locally designated natural communities on the project site or in the project vicinity. The project corridor contains mature trees that have the potential to be used for nesting by migratory birds. However, the proposed project would comply with the Migratory Bird Treaty Act (MBTA), which regulates vegetation removal during the nesting season, to ensure that significant impacts to nesting migratory birds would be avoided. Specifically, in accordance with the MBTA, efforts would be made to schedule the removal of mature trees between September and February to avoid the nesting season.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

Standard: A significant impact may occur if riparian habitat or any other sensitive natural community were to be adversely modified. Reference: 17(Thresholds C)

Explanation: The proposed project would not result in the direct removal, filling or hydrological interruption of a federally protected wetland as defined by Section 404 of the Clean Water Act. Due to the highly urbanized surroundings, there are no wildlife corridors or native wildlife nursery sites in the project vicinity. See explanation for 4(a).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

Standard: A significant impact may occur if federally protected wetlands, as defined by Section 404 of the Clean Water Act would be modified or removed. Reference: 17(Thresholds C), 33(Nat. Wetlands Map)

Explanation: There are no wetlands within or adjacent to the project site.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project interferes or removes access to a migratory wildlife corridor or impedes the use of native wildlife nursery sites. Reference: 9(BIOS), 17(Thresholds C)

Explanation: No sensitive habitats were identified within the project site or vicinity. The project area is urbanized and heavily used and does not provide significant habitat for wildlife. However, the project corridor contains mature trees that have the potential to be used for nesting by migratory birds. As previously discussed, the proposed project would comply with the MBTA, which regulates vegetation removal during the nesting season, to ensure that significant impacts to nesting migratory birds would be avoided. Specifically, in accordance with the MBTA, efforts would be made to schedule the removal of mature trees between September and February to avoid the nesting season. Therefore, the project is not expected to have an impact on habitat suitable for wildlife movement or migration.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project would cause an impact that is inconsistent with local regulations pertaining to biological resources. Reference: 9 (CDFG), 27(Tree Policy), 28(Urban Forest Program), 25(PW Tree Policy), 17(Thresholds C)

Explanation: The City of Los Angeles has a Native Tree Protection Ordinance that protects native oak species, black walnut, California bay, and California sycamore that measure four inches or more in cumulative diameter, at four and one-half feet above the ground level at the base of the tree. The project corridor includes areas of grass and trees that may potentially provide habitat for sensitive species, especially nesting birds. The proposed project would remove both young and mature trees, including several protected California sycamores and heritage trees. Protected and heritage tree removal will follow the Recreation and Parks Tree Removal Procedure.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project would be inconsistent with mapping or policies in any conservation plans of the cited type. Reference: 8(CNDDB), 17(Thresholds C)

Explanation: There are no known locally designated natural communities on the site or in the project vicinity; therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Accordingly, the proposed project would not result in significant impacts to biological resources.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
5. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?	X			
Standard: A significant impact may result if the proposed project caused a substantial adverse change to the significance of a historical resource (as identified above). Reference: 13(Guidelines 15064.5), 17 (Thresholds D.3), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?	X			
Standard: A significant impact may occur if the proposed project were to cause a substantial adverse change in the significance of an archaeological resource that falls under the CEQA Guidelines section cited above. Reference: 13(Guidelines 15064.5), 17 (Thresholds D.2), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X			
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb unique paleontological resources or unique geologic features. Reference: 13(Guidelines 15064.5), 17(Thresholds D.1), 30(Diblee), 11(CHRIS), 20(ZIMAS)				
Explanation: Refer to Section IV.E of the Initial Study.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	X			
Standard: A significant impact may occur if grading or excavation activities associated with the proposed project would disturb interred human remains. Reference: 13(Guidelines 15064.5), 17(Thresholds D.2), 11(CHRIS)				
Explanation: Refer to Section IV.E of the Initial Study.				
6. GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?				X
Standard: A significant impact may occur if the proposed project were located within a state-designated Alquist-Priolo Zone or other designated fault zone and appropriate building practices were not followed. References: 6(CDC Publ. 42), 17(Thresholds E.1)				
Explanation: Refer to Section IV.F of the Initial Study.				

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
ii) Strong seismic ground shaking?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project design did not comply with building code requirements intended to protect people from hazards associated with strong seismic ground shaking. Reference: 1917(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project would be located in an area identified as having a high risk of liquefaction and appropriate design measures required within such designated areas were not incorporated into the project. Reference:26, 17(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

iv) Landslides?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were located in a hillside area with soil conditions that would suggest high potential for sliding and appropriate design measures were not implemented. Reference: 26, 17(Thresholds E.1)

Explanation: Refer to Section IV.F of the Initial Study.

a) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were to expose large areas to the erosion effects of wind or water for a prolonged period of time. Reference: 17(Thresholds E.2)

Explanation: Refer to Section IV.F of the Initial Study.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were built in an unstable area or that would become unstable as a result of improper site preparation or design features to provide adequate foundations for project buildings, thus posing a hazard to life and property. Reference: 26, 17(Thresholds E.2)

Explanation: See 6 (a) (iii) and (iv) above.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐

Explanation: Prior to any construction and as a standard practice, a geotechnical evaluation would be prepared which would prescribe methods, techniques, and specifications for: site preparation, treatment of undocumented fill and/or alluvial soils, fill placement on sloping ground, fill characteristics, fill placement and compactions, temporary excavations and shoring, permanent slopes, treatment of expansive soils, and treatment of corrosive soils. Design and construction of the proposed project would conform to recommendations in the geotechnical evaluation; therefore, impacts from potentially expansive soil would not be significant.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were built on soils that were incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system, and such a system was proposed. Reference: 17(Thresholds E.3)

Explanation: The project area is served by the City's wastewater collection, conveyance, and treatment systems. Therefore, no septic tanks or alternative wastewater disposal systems would be used during project operation.

Reference: 26(NavigateLA wye map)

7. GREENHOUSE GAS EMISSIONS – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐

Explanation: Refer to Section IV.G of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Explanation: Refer to Section IV.G of the Initial Study.

8. HAZARDS AND HAZARDOUS MATERIALS – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project involved the use or disposal of hazardous materials as part of its routine operations and would have the potential to generate toxic or otherwise hazardous emissions. Reference: 17(Thresholds F.1, F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project involved a risk of accidental explosion or utilized substantial amounts of hazardous materials as part of its routine operations that could potentially pose a hazard to the public under accident or upset conditions. Reference: 14(Geotracker), 15(LAMC), 17(Thresholds F.1, F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within one-quarter mile of an existing or proposed school site and were projected to release toxic emissions that pose a hazard beyond regulatory thresholds. Reference: 17(Thresholds F.2)

Explanation: There is no school within 0.25 mile of the project. 26(NavigateLA Schools)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐

Reference: 17(Thresholds F.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project site were located within a public airport land use plan area, or within two miles of a public airport, and would create a safety hazard. Reference: 17(Thresholds F.1, K.2)

Explanation: The project is not located within a public airport land use plan area, or within two miles of a public airport. Reference: 20(ZIMAS)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

Standard: A significant impact may occur if the project would result in a safety hazard for people residing or working in the project area because of its location near a private airstrip. Reference: 17(Thresholds F.1, K.2)

Explanation: No private airstrip is located within the vicinity of the project site. Reference: 26(NavigateLA)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project were to substantially interfere roadway operations used in conjunction with an emergency response plan or evacuation plan or would generate sufficient traffic to create traffic congestion that would interfere with the execution of such plan. Reference: 17(Thresholds F.1, K.2)

Explanation: Refer to Section IV.H of the Initial Study.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in a wild land area and poses a significant fire hazard, which could affect persons or structures in the area in the event of a fire. Reference: 17(Thresholds K.2)

Explanation: The project site is not located within a wild land or a very high fire hazard severity zone. 26(NavigateLA Very High Fire Hazard Severity Zone)

9. HYDROLOGY AND WATER QUALITY – Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project discharged water that did not meet the quality standards of agencies that regulate surface water quality and water discharge into storm-water drainage systems. Reference: 17(Thresholds G.2)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

Explanation: The proposed project would comply with applicable storm water management requirements for pollution prevention (for example, compliance with the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements to reduce potential water quality impacts). Short-term impacts to water quality due to construction activities would be regulated under California State Water Resources Control Board Water Quality Order No. 99-08-DWQ (General Construction Permit). Under this permit, the City of Los Angeles would implement a stormwater pollution prevention plan and Best Management Construction Practices would be implemented to ensure no significant impacts to water quality occur during construction.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒

Standard: A project would normally have a significant impact on groundwater supplies if it were to result in a demonstrable and sustained reduction of groundwater recharge capacity or change the potable water levels sufficiently that it would reduce the ability of a water utility to use the groundwater basin for public water supplies or storage of imported water, reduce the yields of adjacent wells or well fields, or adversely change the rate or direction of groundwater flow. Reference: 17(Thresholds G.2, G.3)

Explanation: The proposed streetcar project would not utilize existing groundwater resources nor would it interfere with groundwater recharge. Changes to the groundwater supply are not anticipated as a result of the proposed project.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in a substantial alteration of drainage patterns that resulted in a substantial increase in erosion or siltation during construction or operation of the project. Reference: 17(Thresholds G.1, G.2)

Explanation: The proposed project would not substantially alter the existing drainage pattern of the site or area. No streams or rivers cross the proposed project route. As discussed in Comment 8 (a), the project would result in temporary soil disturbance activities during construction during which time a stormwater pollution prevention plan for the control of soil erosion and sediment runoff would be implemented. The project would be constructed in accordance with applicable requirements of the municipal code, including grading requirements.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in increased runoff volumes during construction or operation of the proposed project that would result in flooding conditions affecting the project site or nearby properties. Reference: 17(Thresholds G.1)

Explanation: The proposed project would not substantially alter the existing drainage pattern of the site or area. See Comments for 8 (a) and 8 (c) above.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒

Standard: A significant impact may occur if the volume of runoff were to increase to a level that exceeded the capacity of the storm drain system serving a project site. A significant impact may also occur if the proposed project would substantially increase the probability that polluted runoff would reach the storm drain system. Reference: 17(Thresholds G.2)

Explanation: The proposed project would not change the volume of storm water runoff. See Comment 8(a).

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐

Comment: A significant impact may occur if a project included potential sources of water pollutants and have the potential to substantially degrade water quality. Reference: 17(Thresholds G.3)

Explanation: No new potential sources of pollutants that could substantially degrade water suitability are anticipated.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project placed housing within a 100-year flood zone. Reference: 17(Thresholds G.1 to G.4)

Explanation: The proposed project does not include housing.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within a 100-year flood zone and would impede or redirect flood flows. Reference: 17(Thresholds G.4)

Explanation: The project site is not located within a 100-year flood zone. Reference: 35(FIRM Panel 06037C1620F), 26(NavigateLA Flood Plains)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in an area where a dam or levee could fail, exposing people or structures to significant risk of loss, injury or death. Reference: 17(Thresholds E.1, G.3)

Explanation: The project site is not located in an area subject to this risk. Reference: 26(NavigateLA Inundation Areas)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located in an area with inundation potential due to seiche, tsunami, or mudflow. Reference: 17(Thresholds E.1)

Explanation: The project site is not located in an area subject to this risk. Reference: 26(NavigateLA Tsunami Area and Landslides)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
10. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were sufficiently large or otherwise configured in such a way as to create a physical barrier within an established community. Reference: 17(Thresholds H.2)

Explanation: The proposed project would involve the construction and operation of a streetcar service that would traverse the following neighborhoods/districts from north to south: the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, and the Los Angeles Sports and Entertainment District (LASED), all of which are located within the Central City Community Plan area of the City of Los Angeles. No changes to the surrounding land uses and no barriers that would divide the community are proposed. Additionally, a goal of the proposed project is to facilitate connections between the surrounding community, private businesses, and public facilities within the different neighborhoods/districts. Therefore, implementation of the proposed project would connect communities rather than divide them. No further analysis is warranted.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project were inconsistent with the General Plan, or other applicable plan, or with the site's zoning if designated to avoid or mitigate a significant potential environmental impact. Reference: 17(Thresholds H.1, H.2)

Explanation: See discussion in Section IV. Reference: 20(ZIMAS), 17(General Plan)

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project were located within an area governed by a habitat conservation plan or natural community conservation plan and would conflict with such plan. Reference: 17(Thresholds H.1, H.2)

Explanation: Please see the discussion for Item 4(f), above. No impact would occur.

11. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

Standard: A significant impact may occur if the project were located in an area used or available for extraction of a regionally important mineral resource, if the project converted an existing or potential present or future regionally important mineral extraction use to another use, or if a project affected access to such a site. Reference: 17(General Plan), 17(Thresholds E.4)

Explanation: The project site is not located within a Mineral Resource Zone (MRZ-2), which indicates the inclusion of known mineral deposits. As described in the Conservation Element of the City of Los Angeles General Plan, the primary mineral resources within the city are rock, gravel, oil, and sand deposits, and the only available deposit site within the city is the Tujunga alluvial fan, which is more than 10 miles from the project site. The project site is not located within an area known to contain mineral resources, and no impacts with respect to mineral resources would occur as a result of construction and operation of the proposed project. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Standard: A significant impact may occur if a project were located in an area used or available for extraction of a locally-important mineral resource and the project converted such a resource to another use or affected access to such a site. Reference: 17(General Plan), 17(Thresholds E.4)

Explanation: As discussed in Item 11(a), the proposed project site is not located within a locally important mineral resource discovery site delineated in the General Plan. Therefore, no further analysis is warranted.

12. NOISE – Would the project result in:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐

Standard: A significant impact may occur if the project generated noise levels exceeding the standards for ambient noise as established by the General Plan and Municipal Code or exposed persons to that increased level of noise. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: Noise levels in the vicinity of the project would increase during the construction phase of the proposed project. Should construction occur during nighttime hours, this impact could be potentially significant. However, the Bureau of Engineering Standard Project Specifications for public works construction are designed to comply with the City's General Plan Noise Element and related Municipal Code Noise Ordinance and, given that the proposed project would be implemented in accordance with these, significant adverse impacts to noise levels are not expected. Nonetheless, this will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	☒	☐	☐	☐

Standard: A significant impact may occur if the project were to expose persons to or generate excessive ground-borne vibration or ground-borne noise levels. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: See also comment under Section 11(a). Increased groundborne vibration or groundborne noise levels within the vicinity of the proposed project could occur during the construction phase from use of heavy equipment. These impacts would be temporary and short-term in nature and would comply with applicable noise standards.

Given the proximity of nearby noise-sensitive uses, such as residences, to the project site, operation of the proposed project alternatives has the potential to expose persons to or generate excessive groundborne vibration or noise levels. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐

Standard: A significant impact may occur if the project were to substantially and permanently increase the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Issues

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

Explanation: Refer to discussion under 11 (a) above. Operation of the proposed project has the potential to increase noise as a result of streetcar vehicle operation and due to changes in traffic circulation that may increase ambient noise at nearby sensitive receptors depending upon the locations of potential traffic congestion impacts. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐

Comment: A significant impact may occur if the project were to create a substantial temporary or periodic increase in the ambient noise levels in the project vicinity above levels existing without the proposed project. Reference: 17 (General Plan Noise Element), 17(Thresholds Section I)

Explanation: Refer to discussion under Comment 11 (a) above. Construction of the proposed project would involve the use of noise-generating construction equipment, resulting in temporary and periodic increases in noise levels along the proposed project corridor. This impact is considered to be potentially significant and will be analyzed in the EIR/EA.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds Section I), 26(NavigateLA)

Explanation: The project is not located within two miles of an airport. The nearest airport to the project site is Bob Hope Airport, located approximately 10 miles northwest of the site (Google Earth Pro 2012). The project site is not located within an airport land use plan or within 2 miles of an airport land use plan, public airport, or public use airport; therefore, no further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds Section I), 26(NavigateLA)

Explanation: See Item 12(e). No private airstrips are located in the project vicinity. Thus, no one residing or working in the project area would be exposed to excessive noise levels associated with a private airstrip. No further analysis is warranted.

13. POPULATION AND HOUSING – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

Standard: A significant impact may occur if population growth is induced in an area, either directly or indirectly, such that the population of the area may exceed the planned population of that area. Reference: 17(Thresholds Section J.1)

Explanation: Population density is managed by the City’s land use and planning designations (see above) and building codes. The proposed project would involve the construction and operation of a streetcar service. The project would not include the construction of homes or businesses. Therefore, the proposed project would not directly increase the project area’s population. The proposed project would not involve changing the City’s land use and planning designations to a more intense use and, therefore, would not directly induce substantial population growth. However, an objective of the project is to encourage revitalization of the area through pedestrian friendly improvements and, therefore, the project could

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

indirectly induce business development and population growth. This indirect effect, however, is expected to be less than significant. No further analysis is warranted.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 17(Thresholds J.1 and J.2)

Explanation: The proposed project would involve the construction and operation of a streetcar system. It would not displace any existing housing. Therefore, no further analysis is warranted.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Standard: Normally, there would be no significant impact if the project will not result in a net loss of 15 single-family dwellings or 25 dwellings in multi-family housing. Reference: 17(Thresholds J.2)

Explanation: The proposed project would not displace any housing. No businesses or residences are proposed to be demolished or displaced by the proposed project. Therefore, no further analysis is warranted.

14. PUBLIC SERVICES –

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i) Fire protection?	☐	☐	☒	☐

Standard: A significant impact may occur if the City of Los Angeles Fire Department (LAFD) could not adequately serve the proposed project based on response time, access, or fire hydrant/water availability. Reference: 17(Thresholds K.2)

Explanation: The project site is served by LAFD Division 1, Battalion 1 at Station No. 3, located at 108 North Fremont Avenue, approximately 0.4 miles to the west. The proposed project would not result in an increase in population and, thus, would not generate a need for new or altered fire protection facilities. The proposed project would be constructed in accordance with all applicable fire codes set forth by the state Fire Marshall and LAFD. Therefore, the proposed project would not be considered a fire hazard and would not exceed the capacity of LAFD to serve the site or other areas with existing fire protection services. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction so as to coordinate emergency response routing during construction work. Construction and operation of the proposed project would not create hazards that would increase the need for fire protection. Therefore, less-than-significant impacts would occur. No further analysis is warranted.

ii) Police protection?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project were to result in an increase in demand for police services that would exceed the capacity of the police department responsible for serving the site. Reference: 17(Thresholds K.1)

Explanation: The project site is served by LAPD's Central division, Central Community Police Station,

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

located at 251 E. 6th Street. The proposed project would not require additional police protection beyond what is currently provided. The nearest local police station would be notified, as appropriate, of traffic control plans during construction so as to coordinate emergency response routing during construction work. Construction and operation of the proposed project would not increase the need for police services. No residential, commercial, industrial, or recreational land uses are proposed as part of the project. Therefore, less-than-significant impacts would occur. No further analysis is warranted.

iii) Schools?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that could generate demand for school facilities that exceeded the capacity of the school district responsible for serving the project site. Reference: 17(Thresholds K.3)

Explanation: The proposed project does not include a housing component, and it would not directly increase employment. The proposed project would not include new housing and, therefore, would not directly increase the demand for schools in the area. However, an objective of the project is to encourage revitalization of the area and, therefore, the project could indirectly induce business development and population growth. This indirect effect on school enrollment, however, is expected to be less than significant. No further analysis is warranted.

iv) Parks?	☐	☐	☒	☐

Standard: A significant impact may occur if the recreation and park services available could not accommodate the population increase resulting from the implementation of the proposed project. Reference: 17(Thresholds K.4)

Explanation: The proposed project would not directly increase the demand for parks in the area because it would not include new residential or business development. However, a primary objective of the project is to encourage revitalization of the area, which could induce new development and indirectly increase project area populations. However, the indirect impacts on parks due to increased populations are not expected to be significant, because the increase in population would be on a regional level and would not result in substantial increase in park use in the Downtown area. . A less-than-significant impact would result from construction and operation of the proposed project. No further analysis is warranted.

v) Other public facilities?	☐	☐	☒	☐

Standard: Projects that do not result in a net increase of 75 residential units normally would not have a significant impact on public libraries. Reference: 17(Thresholds K.5)

Explanation: The project would not result in a net increase of 75 residential units or more. The proposed project would not directly increase the use of other facilities in the area because it would not include new residential or business development. However, a primary objective of the project is to encourage revitalization of the area, which could induce new development and indirectly increase project area populations. However, the increased populations are not expected to have a significant impact on other public facilities. A less-than-significant would result from construction and operation of the proposed project. No further analysis is warranted.

Issues

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

15. RECREATION –

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project includes substantial employment or population growth that may generate demand for public park facilities that exceed the capacity of existing parks. Reference: 17(Thresholds K.4)

Explanation: The proposed project would not cause a direct population increase (see Section 13 above). The proposed project would involve the construction and operation of a streetcar system. The proposed project would not directly increase the use of existing neighborhood parks or regional parks such that substantial physical deterioration of the facility would occur or be accelerated. No further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Standard: Reference: 17(Thresholds K.4)

Explanation: The proposed project does not include or require a recreational facility. One of the goals of the proposed project is to improve connectivity to recreational facilities restaurants, and shops. The creation of connective transit corridors would facilitate access to existing facilities. No further analysis is warranted.

16. TRANSPORTATION/TRAFFIC – Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersection, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project causes an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system. Reference: 17(Thresholds L.1 to L.4, L.8)

Explanation: The proposed project could change Downtown circulation patterns, which could result in localized traffic impacts. This issue will be addressed in the EIR/EA.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project causes a conflict with an applicable congestion management program. Reference: 17(Thresholds L.1 to L3)

Explanation: Construction of the proposed project would temporarily increase traffic due to additional trips to and from the site involving haul trucks, construction equipment, and personal vehicles. These vehicle trips are directly related to construction activities and are temporary in nature.

Please see Item 16.(a) above.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project changed air traffic patterns, including either an increase in traffic levels or a change in location the resulted in substantial safety risks.

Explanation: The nearest airport to the project site is the Bob Hope Airport, located approximately 10 miles northwest of the site (Google Earth Pro 2012). The proposed project does not include any components that would affect air traffic. The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks. Therefore, no further analysis is warranted.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐

Standard: A significant impact may occur if the proposed project substantially increased road hazards due to a design feature or incompatible uses. Reference: 17(Thresholds L.5)

Explanation: Introduction of the streetcar system may introduce safety hazards to pedestrians, personnel, visitors, nearby neighbors, bicyclists, or other vehicles. Driveway access and the circulation scheme for the proposed project would need to be reviewed and approved by the City of Los Angeles, Department of Transportation. The impact is considered to be potentially significant and will be addressed in the EIR/EA.

e) Result in inadequate emergency access?	☐	☐	☒	☐

Standard: A significant impact may occur if the proposed project resulted in inadequate emergency access. Reference: 17(Thresholds L.5, L.8, and J2)

Explanation: The proposed project may intermittently result in diminished access for emergency vehicles during construction. However, the construction phase of the project would be temporary. The City will implement traffic control plans in areas where construction is occurring to accommodate first responders and emergency vehicles so that emergency access is not substantially impaired. Temporary traffic control elements would be subject to review, including safety, and approval by Los Angeles Department of Transportation. With compliance to existing regulations, the potential impact is considered to be less than significant. Therefore, no further analysis is warranted.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project conflicts with adopted policies, plans, or programs supporting alternative transportation. Reference 17(Thresholds L.6)

Explanation: The proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation, including the City of Los Angeles Bicycle Plan. Therefore, no impact would occur.

17. UTILITIES AND SERVICE SYSTEMS – Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project exceeds wastewater treatment requirements of the local regulatory governing agency. Reference: 17(Thresholds M.2)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact

Explanation: The proposed project would not generate additional wastewater. The proposed project would involve the construction of a streetcar system. No uses or activities that would generate wastewater requiring wastewater treatment are proposed as part of the project. The proposed project would have no impact on the wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board. Therefore, no impacts would occur. No further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project resulted in the need for new construction or expansion of water or wastewater treatment facilities that could result in an adverse environmental effect that could not be mitigated. Reference: 17(Thresholds G.1, M.1 and M.2)

Explanation: The proposed project would not use additional water or generate additional wastewater that would exceed existing capacity. The proposed project would involve the construction of a streetcar system. The proposed project would not use water in amounts that would have a significant impact on water treatment facilities. A minimal amount of additional water would be used for irrigation of new landscaping, as well as cleaning, servicing, and maintenance of the streetcar vehicles. The proposed project would not include new or expanded water or wastewater treatment facilities. In addition, the project would not require the construction or expansion of water or wastewater treatment facilities. Therefore, no impacts would occur. No further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Standard: A significant impact may occur if the volume of storm water runoff from the proposed project increases to a level exceeding the capacity of the storm drain system serving the project site. Reference: 17(Thresholds G.1 and M.2)

Explanation: The storm water facilities in the area are adequate to serve the proposed project. The proposed project would not increase the volume of storm water runoff. The project site is in an urbanized area that is adequately served by the existing storm drain system. Operation of the proposed project alternatives would not create substantial amounts of additional runoff that would require construction of new stormwater drainage facilities or the expansion of existing facilities. Therefore, no impacts would occur. No further analysis is warranted.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

Standard: A significant impact may occur if the proposed project's water demands would exceed the existing water supplies that serve the site. Reference: 17(Thresholds M.1)

Explanation: The City of Los Angeles Department of Water and Power provides potable water to the project area and vicinity. Other than temporary construction water use, the proposed project would not include new water uses. Construction and operation of the proposed project would not require new or expanded entitlements. The proposed project would involve the construction and operation of streetcar service and would not involve the construction of water wells or adversely affect ground water supply. The proposed project would not use any water, except for irrigation of landscaping improvements, and cleaning, servicing, maintenance of the streetcar vehicles, which would be a minimal amount. As a result, the minimal increase in demand for water would not exceed existing water supplies. Therefore, no impacts would occur. No further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

Comment: A significant impact may occur if the proposed project would increase wastewater generation to such a degree that the capacity of facilities currently serving the project site would be exceeded. Reference:

Explanation: See 17 (a) above. Construction and operation of the proposed project would not directly increase the demand for wastewater treatment facilities in the area. The proposed project would not include uses or activities that would generate wastewater requiring treatment. Therefore, no impacts would occur. No further analysis is warranted.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐

Comment: A significant impact may occur if the proposed project were to increase solid waste generation to a degree that existing and projected landfill capacities would be insufficient to accommodate the additional waste. Reference: 17(Thresholds M.3), 29(Countywide Siting Report)

Explanation: The City standard for public works projects requires demolition debris to be recycled where feasible; therefore, impacts associated with construction debris would be less than significant. Operation of the proposed project may generate minor amounts of solid waste during cleaning, servicing, and maintenance of the streetcar vehicles, but those small amounts would be recycled or disposed of in existing landfills. Adequate landfill capacity exists to accommodate project-generated waste. If disposal would occur at an off-site location, it would be disposed of in accordance with the City of Los Angeles' regulations. Therefore, through compliance with the applicable regulations, impacts on solid waste disposal needs would be less than significant as a result of the proposed project and no further analysis is warranted.

g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Comment: A significant impact may occur if the proposed project would generate solid waste that was in excess of or was not disposed of in accordance with applicable regulations. Reference: 17(Thresholds M.3), 29(Countywide Siting Report)

Explanation: The project will be designed, constructed and operated in accordance with all applicable laws, regulations, ordinances, and formally adopted City standards. Disposal of all solid waste generated by the proposed project would comply with federal, state, and local statutes and regulations related to solid waste. Therefore, no further analysis is warranted.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐

Explanation: While the proposed project is a transportation project that would be constructed mostly within existing roadways, there is a potential for both direct and indirect impacts to historical resources as a result of construction and operation of the project. Potential impacts associated with the proposed project would not substantially affect the habitat of a wildlife species, cause a species to drop below self-sustaining levels, threaten to eliminate a plant or animal community, affect a rare or endangered species. Construction activities would require excavation of portions of roadways and sidewalks and potential deep excavation in order to construct associated traction power substations and maintenance facilities to support the project; therefore, there is a potential to encounter unknown archaeological or paleontological resources during project construction that may have the potential to eliminate important examples of history or prehistory. These issues will be evaluated further in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐

Explanation: As discussed throughout this Initial Study, the proposed project has the potential to result in environmental impacts during construction and operation in several resource categories. In addition, other related projects in the vicinity of the streetcar alignment may also result in environmental impacts. As such, there is a potential for the proposed project to combine with the other related projects to result in a cumulative impact. Therefore, the cumulative impacts of the proposed project and related projects will be analyzed further in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
c) Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	☒	☐	☐	☐

Explanation: The proposed project has the potential to degrade the quality of the environment during construction and operation with regard to several resource areas as indicated in Section IV of the Initial Study. The project’s potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals will be further evaluated in the EIR/EA.

Issues	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant	No Impact
d) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Explanation: Implementation of the proposed project would involve mostly construction impacts, which would be temporary. After construction, there could be operational impacts from the proposed project. This topic will be analyzed further in the EIR/EA.

Appendix B2. Agency List

Federal Agencies				
Environmental Protection Agency Office of Federal Activities OECA (2251A) 1200 Pennsylvania Avenue Washington, DC 20460		Connell Dunning Transportation Lead Environmental Review Office EPA Region IX 75 Hawthorne Street, CED-2 San Francisco, CA 94105		Samuel Mazzola Director, Portfolio Management Division General Services Administration 450 Golden Gate Ave San Francisco, CA 94102
U.S. Department of Energy Office of Environmental Compliance 1000 Independence Avenue, SW, Room 4G-064 Washington, DC 20585		Vince Mammano Federal Highway Administration 650 Capitol Mall, Suite 4100 Sacramento CA 95814		Federal Transportation Administration Los Angeles Metropolitan Office 888 S Figueroa, Suite 1850. Los Angeles, CA 90017
John Fowler Executive Director Advisory Council on Historic Preservation 1100 Pennsylvania Ave. N.W., Suite 803 Washington DC 20004		Department of the Interior Office of Environmental Policy and Compliance 1849 C Street, NW MS 2462 Washington, DC 20240		Patricia S. Port Regional Environmental Officer Department of the Interior Office of Environmental Policy and Compliance 333 Bush Street, Suite 515 San Francisco, CA 94104
U.S. Department of Housing and Urban Development, Los Angeles Field Office AT&T Building, 611 West Sixth Street, Suite 801 Los Angeles, CA 90017		U.S. Department of Energy Western Area Power Administration Sierra Nevada Regional Office 114 Parkshore Drive Folsom, CA 95630-4710		Scott Windley United States Access Board 1331 F Street, NW, Suite 1000 Washington, DC 20004-1111

State Agencies				
Ed Pert, Regional Manager California Department of Fish and Game, Region 5 4949 Viewridge Avenue San Diego, CA 92 I23		California Transportation Commission Attn: Susan Bransen 1120 N Street, MS 52 Sacramento, CA 95814		California Dept. of Conservation Div. of Land Resource Protection 801 K Street. MS 13-71 Sacramento, CA 95814
State Water Resources Control Board 1001 I Street Sacramento, CA 95814		California Highway Patrol, Southern Division 411 North Central Avenue, Suite 410 Glendale, CA 91203-2020		Ron Kosinski Caltrans District 7, Deputy District Director Division of Environmental Planning 100 South Main Street, MS 164 Los Angeles, CA 90012
California Native American Heritage Commission Attn: Cynthia Gomez, Executive Secretary 915 Capitol Mall, Room 364 Sacramento CA 95814		State Historic Preservation Officer Office of Historic Preservation Department of Parks and Recreation P.O. Box 942896 Sacramento, CA 94296-0001		Paul Clanon Executive Director State of California Public Utilities Commission 320 West 4th Street, Ste. 500 Los Angeles, CA 90013
California State Clearinghouse 1400 Tenth Street Sacramento, CA 95814		Air Resources Board CEQA Compliance 9528 Telstar Avenue El Monte, CA 91731		California Wildlife Conservation Board 1416 Ninth Street Sacramento, CA 95814
California Department of Transportation District 7 Office of Regional Planning and Public Transportation Attn: Linda Wright 100 South Main Street, MS 16 Los Angeles, CA 90012		Andre Amy Regulatory Assistance Officer California Department of Toxic Substances Control 9211 Oakdale Ave. Chatsworth, CA 91311		

Regional and Local Agencies				
Steve Smith South Coast Air Quality Management District 21865 East Copley Drive Diamond Bar, CA 91765		Samuel Unger Los Angeles Regional Water Quality Control Board 320 West 4th Street, Suite 200 Los Angeles, CA 90013		Gail Farber Department of Public Works County of Los Angeles 125 South Baldwin Avenue Arcadia, CA 91007
Richard Bruckner Department of Regional Planning County of Los Angeles 320 West Temple Street Los Angeles, California, 90012		Phillip C. Hill Los Angeles Convention Center 1201 South Figueroa Street Los Angeles, CA 90015		Jack Gabig Gardena Department of Transportation 13999 S Western Avenue Gardena, CA 90249
Torrance Transit System City of Torrance 20500 Madrona Avenue Torrance, CA 90503-3692		City of Santa Clarita Transit Transit Maintenance Facility (TMF) 28250 Constellation Rd, Santa Clarita, CA 91355		Santa Monica Big Blue Bus 1660 7th Street Santa Monica, CA 90401
Montebello Bus Lines 400 S Taylor Avenue Montebello, CA 90640		Ron Andrade Executive Director Los Angeles City/County Native American Indian Commission 3175 W 6th Street Los Angeles, CA 90020		Jay Kim Principal Transportation Engineer Los Angeles Department of Transportation 100 S. Main Street – 10th Floor Los Angeles, CA 90012
Southern California Association of Governments Intergovernmental Review 818 W. Seventh Street, 12th Floor Los Angeles, CA 90020		Gary Hildebrand Assistant Deputy Director Watershed Management Division Los Angeles County Dept. of Public Works 900 S. Fremont Ave., 11th Floor Alhambra, CA 91803-1331		Greater Los Angeles Vector Control CEQA Compliance 12545 Florence Avenue Santa Fe Springs, CA 90670

Regional and Local Agencies				
Daryl Osby Fire Chief Los Angeles County Fire Department 1320 North Eastern Avenue Los Angeles, CA 90063		Metropolitan Water District of Southern California CEQA Compliance 100 North Alameda Street Los Angeles, CA 90012-2944		Grace Robinson Chan Chief Engineer and General Manager Sanitation Districts of Los Angeles County 1955 Workman Mill Road Whittier, CA 90601
Russ Guiney, Director County of Los Angeles Department of Parks and Recreation 433 South Vermont Avenue Los Angeles, CA 90020		Robert Ovrom General Manager City of Los Angeles, Building and Safety 201 N. Figueroa, Suite 1000 Los Angeles, CA 90012		Michael DePallo Metrolink One Gateway Plaza, 12th Floor Los Angeles, CA 90012
Enrique Salazar Los Angeles City Bureau of Sanitation 2714 Media Center Drive Los Angeles, CA 90065		Michael LoGrande Director of Planning Los Angeles City Planning Department 200 N. Spring Street, 5th Floor CH Los Angeles, CA 90012		Olga Garay-English Executive Director City of Los Angeles, Cultural Affairs 201 N. Figueroa, Suite 1400 Los Angeles, CA 90012
James G. Featherstone Director City of Los Angeles, Emergency Management 200 N. Spring Street, Room 1553 Los Angeles, CA 90012		Inspector – Central Division Los Angeles City Fire Department-Bureau of Fire Prevention and Public Safety Hydrants and Access Unit 200 N. Main Street, Room 1000 Los Angeles, CA 90012		Brian Cummings Chief City of Los Angeles, Fire Department 200 Main Street, Suite 1700 Los Angeles , CA 90012
Ken Bernstein Manager City of Los Angeles, Office of Historic Resources 200 N. Spring Street, Room 620 Los Angeles , CA 90012		Charlie Beck Chief City of Los Angeles, Police Department 100 W. 1st Street Los Angeles , CA 90012		Jon Kirk Mukri General Manager City of Los Angeles, Recreation and Parks 221 N. Figueroa Street, Suite 1550 Los Angeles , CA 90012

Regional and Local Agencies				
Leroy Baca Sheriff Los Angeles County Sheriff's Department 4700 Ramona Monterey Park, CA 91754		John Sterritt Director LAUSD Office of Environmental Health and Safety 333 South Beaudry Avenue, 20th Floor Los Angeles , CA 90017		Los Angeles Public Library Central Library 630 W. 5th Street Los Angeles, CA 90071
Los Angeles Public Library Little Tokyo Branch 203 S. Los Angeles Street Los Angeles, CA 90012				

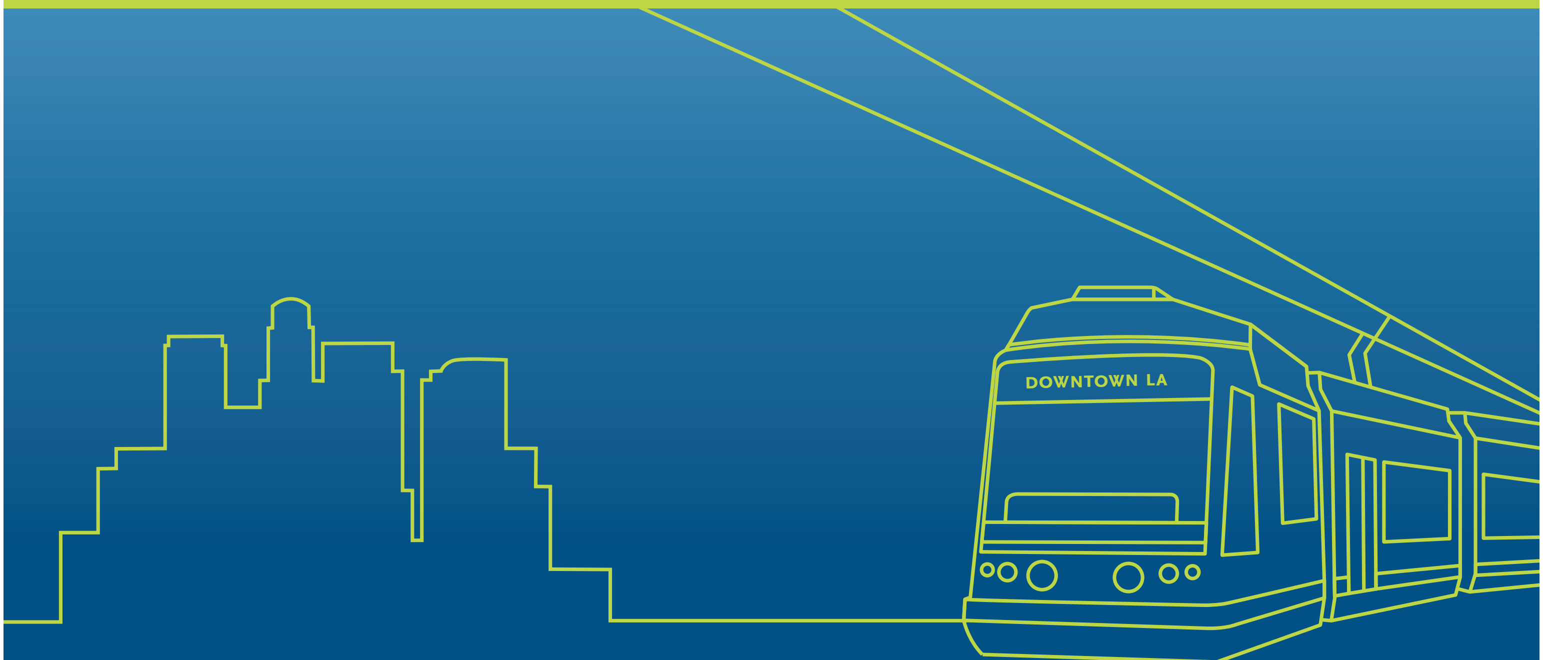
Elected Officials				
Councilmember José Huizar Los Angeles City Council, District 14 200 N. Spring Street, Rm. 465 Los Angeles, CA 90012		Councilmember Jan Perry Los Angeles City Council, District 9 200 N. Spring Street, Rm. 420 Los Angeles, CA 90012		Mayor Antonio Villaraigosa City of Los Angeles, Office of the Mayor 200 N. Spring Street Los Angeles, CA 90012
Senator Kevin De Leon California State Senate, District 22 1808 W. Sunset Blvd. Los Angeles, CA 90026		Assembly Member John Perez California State Assembly, District 53 320 West 4th Street, Room 1050 Los Angeles, CA 90013		Supervisor Gloria Molina Los Angeles County Supervisor, 1st District 856 Kenneth Hahn Hall of Administration 500 West Temple Street Los Angeles, CA 90012
Representative Lucille Roybal-Allard United States House of Representatives 500 Citadel Drive, Suite 320 Commerce, CA 90040		Senator Barbara Boxer United States Senate 312 N. Spring Street, Suite 1748 Los Angeles, CA 90012		Senator Dianne Feinstein United States Senate 11111 Santa Monica Boulevard, Suite 915 Los Angeles, CA 90025
Representative Xavier Becerra United States House of Representatives ATTN: Gayle Greenberg 1910 W. Sunset Blvd. Los Angeles, CA 90026				

Organizations and Interested Individuals		
Carol Schatz President and CEO Central City Association 626 Wilshire Boulevard, Suite 200 Los Angeles, CA 90017	Historic Downtown Business Improvement District ATTN: Blair Besten 453 S. Spring Street Los Angeles, CA 90013	Mr. Jeffrey Deitch Director Museum of Contemporary Art 250 S. Grand Avenue Los Angeles, CA 90012
Historic Cultural Neighborhood Council 307 E. 1st Street Los Angeles, CA 90012	Eric Mann Director Bus Riders Union 3780 Wilshire Blvd. Suite 1200; Los Angeles, CA 90010	Linda Dishman Executive Director Los Angeles Conservancy 523 W. Sixth Street, Suite 826 Los Angeles, CA 90014
Bart Reed The Transit Coalition P.O. Box 567 San Fernando, CA 91341	Los Angeles Tourism and Convention Board 333 S Hope Street, 18th Floor Los Angeles, CA 90071	Sierra Club Transportation Committee Attn: Darrell Clarke 3435 Wilshire Blvd #320 Los Angeles, CA 90010
Patricia Berman Downtown Los Angeles Neighborhood Council P.O. Box 13096 Los Angeles, CA 90013	The Colburn School 200 S. Grand Avenue Los Angeles, CA 90012	Downtown Center Business Improvement District Administrative Office 626 Wilshire Blvd., Ste. 200 Los Angeles, CA 90017
Little Tokyo Community Council Attn: Bill Watanabe 369 East First Street Los Angeles, California 90012	LA Fashion District Business Improvement District Attn: Kent Smith 110 E. 9th Street, Suite A-1175 Los Angeles, CA 90079	Figueroa Corridor Partnership 3982 S. Figueroa Street, Suite 207 Los Angeles, CA 90037
The Broad Foundations ATTN: Deborah Kanter 10900 Wilshire Blvd. 12th floor Los Angeles, CA 90024		

Appendix B3. Take One

metro.net/streetcar

Restoration of HISTORIC STREETCAR SERVICE IN DOWNTOWN LA



EIR SCOPING MEETINGS

Wednesday, January 23, 2013
10-11am and 6:30-8pm

Caltrans Building
100 S Main St, Conference Room 1A
Los Angeles, CA 90012

For project information:

- *eng.lacity.org/techdocs/emg/historic_streetcar.htm*
- *metro.net/streetcar*

Metro®

CITY OF LOS ANGELES
FOUNDED 1781

You are invited to attend and provide comments at the Scoping Meetings for the Environmental Impact Report (EIR) for the Restoration of Historic Streetcar Service in Downtown LA on January 23, 2013.

All requests for reasonable accommodations and translations in other languages will be provided upon request. Please submit meeting requests 72 hours in advance of the scheduled meeting date via *streetcarservice@metro.net*, 213.922.3000, or the California Relay Service at 711.

Está invitado a asistir y proporcionar sus comentarios en la reunión de alcance para el reporte de impacto ambiental (EIR) para la restauración del servicio histórico de tranvía en el centro de Los Ángeles el 23 de enero del 2013.

Pedidos para adaptaciones razonables e información en otros idiomas están disponibles al público. Favor de someter pedidos 72 horas antes de la reunión a *streetcarservice@metro.net*, 213.922.3000, o el servicio de retransmisión de California al 711.

敬邀您參加 2013 年 1 月 23 日洛杉磯市中心復駛歷史街車計劃及環境影響報告 (EIR) 的範疇界定會議，希望您能參與並提出寶貴意見。

我們將配合提供語言翻譯及其他的需求。請在會議 72 小時之前使用 *streetcarservice@metro.net*、213.922.3000 或加州殘障轉接服務 711 與我們聯絡。

로스앤젤레스 다운타운에 복원되는 역사적 시내 전차 서비스를 위해 2013년 1월 23일에 열리는 환경 영향 보고서(EIR) 평가 회의에 참석하셔서 의견을 제공하시도록 귀하를 초청합니다.

요청에 따라 적절한 편의 서비스가 제공되며, 다른 언어로 통역 서비스도 제공됩니다. 회의 참석 요청은 72시간 이전에 이메일: *streetcarservice@metro.net*, 전화번호: 213.922.3000, 또는 캘리포니아 중계 서비스 번호: 711로 예약해 주십시오.

ロサンゼルス・ダウンタウンの歴史的なストリートカー運行の復旧に関し、2013年1月23日に行われる環境影響報告書 (EIR) のためのスコーピング・ミーティングに参加し、コメントをお願いいたします。

他国語の通訳 ・ 翻訳は、妥当な限り提供されます。申請はミーティングの 72 時間前までに *streetcarservice@metro.net*、 213.922.3000、または California Relay Service、 711までご連絡ください。

Metro

Appendix B4. Electronic Meeting Notice

The City of Los Angeles' Bureau of Engineering invites you to attend and provide comments at the Scoping Meetings for the Environmental Impact Report (EIR) for the Restoration of Historic Streetcar Service in Downtown LA:

January 23, 2013
10-11am and 6:30-8pm

Caltrans Building
100 S Main St
Conference Room 1A
Los Angeles, CA 90012

All requests for reasonable accommodations and translations in other languages will be provided upon request. Please submit meeting requests 72 hours in advance of the scheduled meeting date via streetcarservice@metro.net, 213.922.3000, or the California Relay Service at 711.

Scoping Period

The scoping period is 30 days: January 3, 2013 – February 1, 2013. You may submit comments by February 1 via mail or email to:

City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1140 S Broadway, Suite 600
Los Angeles, CA 90015-2213

jim.doty@lacity.org

For more information, and to view the Notice of Preparation and Initial Study, please visit:

- metro.net/streetcar
- eng.lacity.org/techdocs/emg/

Metro

LA DPW ENGINEERING
TRANSFORMING LOS ANGELES

Appendix B5. Newspaper Advertisement

2866
Persons attending a bidder's conference should confirm their attendance by calling the contact person. Bids will not be accepted from anyone not attending a mandatory bidder's conference.
The RFP/RFQs may be obtained through the Internet at: http://www.aqmd.gov/rfp/
If you have questions or would like a copy of the RFP/RFQ mailed to you, call the contact person.
It is the policy of the AQMD to ensure that all businesses including minority-owned businesses, women-owned businesses, disabled veteran-owned businesses and small businesses have a fair and equitable opportunity to compete for and participate in AQMD contracts.

SCAQMD Procurement Unit

Legal Notices

"Public attempt to locate former tenants residing at 4260 Eagle Rock Blvd. Los Angeles CA 90064 regarding possible relocation entitlements from WORKS (Eagle Vista Project). If you were in occupancy on or before January 2010 please contact: Michael Quijano, DRA Inc., 510 S. La Brea Ave., Inglewood CA 90301 Tel: 310-645-3729 ext 248 Email: MichaelQ@drainc.com. You have 30 days from the first day of publication (1/7/2013) to respond. This ad does not ensure that persons responding will be compensated in any way.
Tim Glore d.b.a. LA Scaffolding & Shoring Co."

EDUCATION AND TRAINING 1400

AIRLINES ARE HIRING - Train for hands on Aviation Maintenance Career. FAA approved program. Financial aid if qualified - Housing available. CALL Aviation Institute of Maintenance at 877-804-5293

ATTEND COLLEGE ONLINE 100%. *Medical, *Business, *Criminal Justice, *Hospitality, *Web. Job placement assistance. Computer available. Financial Aid if qualified. SCHEV authorized. Call 866-688-7078 www.CenturaOnline.com

MEDICAL OFFICE TRAINEES NEEDED! Train for a career in Healthcare Management! NO EXPERIENCE NEEDED! Advanced College gets you job ready! PC & Internet Needed. 888-528-5540 (CDCN)

1500

EMPLOYMENT SERVICES

NOTE: Ads in "Employment Services" may offer training, testing services, job counseling, job information, or other products and services, and are not offers of employment.

EMPLOYMENT WANTED

• **Aide-** Exp'd & Mature woman seeks live-in position or nites, home care. Refs & bckgrnd chk avail. WLA./Bev. Hills. 661-540-3857

DOMESTIC EMPLOYMENT

CAREGIVER Must Be Exp'd w/ Alzheimer's. Cking/Clnng, Pref Mature Female, Live-In. Call 4pm-8pm ONLY 213-377-4674

CAREGIVER- Encino. 3+ yrs exp. Car, ins. SS#. Refs. Agency 805-955-9367

★HELPER/HOUSEKEEPER For Elderly Lady, F/T Live-In. Must LOVE Dogs, Drive, Speak English & Have Refs. Female Pref. 310-302-1901

Employment

ALARM

SALES (Outside)
Est. Security Co. looking for exp. salespeople. Salary + comm. Call **800-521-1958**
Fax Res 323-224-6770
Email resumes:
ssappel@vectorsecurity.com

Auto-Smog Tech. Exper'd. Busy shop in Montebello. Pay DOE. Apply: 1619 W. Whittier Blvd., Montebello, CA 90640. Call 323-725-1833

CONSTRUCTION
FINISH CARPENTER Must have residential exp. hanging drs., cabs., trim, truck & tools req. Call 714-870-8051

DENTAL - High tech Dental office seeks Front Desk/Biller w/3-5 yrs exp in Torrance area. Preferrably Dentrix proficient. Fax: 310-257-1112

• DENTIST •
Victorville/W. Cov./S. Bern.
FT/PT. 15 pat./day. Familiar with HMO's,RCT, Exts.
Fax CV/Resume to:
Fax (909) 380-7325; Email jflawsonIV@gmail.com

IT

Website Developer & Media Coordinator
CSULB Foundation
Central Office
Visit: www.foundation.csulb.edu
Refer to Position # 2225

DRIVERS: Home Nightly! Huntington Beach, Flatbed. Santa Fe Springs, Container. Vernon, Yard Hostler. 1yr CDL-A driving req'rd. Estenson Logistics. Apply: www.goelc.com 1-866-336-9642

http://www.tsa.gov/research/checked_baggage_material.shtm

Interested firm may obtain RFQ/P documents at the Airport website - www.BobHopeAirport.com under "Business Opportunities". All interested firms shall register with the Airport Engineering Department either via website or in person. **Proposals submitted by firms that have not registered with Airport Engineering will be deemed non-responsive and will not be considered.** Interested firms shall attend a mandatory pre-proposal conference on January 23, 2013 at 10:00 AM in the Airport Engineering offices. The Airport Engineering Offices are located at 2800 Clybourn, Burbank, CA on the second floor of the Million Air Terminal. Firms are required to submit three copies of the statement of qualifications/proposal no later than 5:00 PM on February 12, 2013.

TO: RYAN RODRIGUEZ AND ADRIAN, L/N/U, POSSIBLE BIOLOGICAL FATHERS OF A BABY BORN NOVEMBER 30, 2012, IN CEDAR RAPIDS, LINN COUNTY, IOWA

You are hereby notified that there is now on filed in the office of the Clerk of Court for Linn County, Iowa, a Petition in Case No. JVJV31800, filed December 19, 2012, which prays for a termination of your Parent-Child Relationship to a Child born on the 30th day of November, 2012. For further details contact the Clerk's Office. The Petitioner's attorney is Mona Knoll of Nazette, Marner, Nathanson & Shea, L.L.P., 615 Second Street SW, Cedar Rapids, Iowa 52404; 319-366-1000.

You are notified that there will be a hearing on the Petition to Terminate Parental Rights before the Iowa District Court for Linn County, at Linn County Juvenile Justice Center in Cedar Rapids, Iowa, at 8:30 a.m. on the 31st day of January, 2013.

You have a right, even if indigent, to be presented by an attorney pursuant to Section 600A.6A, the Code of Iowa.

Roxanne Repstein
CLERK OF THE JUVENILE COURT

NOTICE OF SERVICE OF PROCESS BY PUBLICATION
STATE OF NORTH CAROLINA
COUNTY OF MECKLENBURG
In the General Court of Justice
District Court Division
File No:12JT495

IN RE: Aimee Maxine Galvan Bustos.
To: Max Galvan

TAKE NOTICE that a pleading seeking relief against you has been filed in the above-entitled action. The nature of the relief sought is the termination of your parental rights over the minor child Aimee Maxine Galvan Bustos [d/o/b February 19, 2007].

You are required to make defense to this pleading not later than within forty (40) days of the date that this notice is published; and upon your failure to do so, the party seeking service against you will apply to the Court for the relief sought.

Donna J. Jackson, Attorney at Law
Attorney for Petitioner Consuelo Jazmin Bustos Leon Mazyck
101 N. McDowell Street, Ste 100
Charlotte, NC 28204
704-331-4778

Petition of U Kyaw Win & Nang Oom Khan (Parents) of the minors Teint Mon Kyaw, Khing Mon Kyaw and Phone Myat Kyaw
ORDER TO SHOW CAUSE FOR CHANGE OF NAME
CASE NUMBER: GS014656

TO ALL INTERESTED PERSONS:

Petitioner U Kyaw Win & Nang Oom Khan (Parents) of the minors filed a petition with this court for a decree changing names as follows:

Present Name: a. Teint Mon Kyaw
b. Khing Mon Kyaw
c. Phone Myat Kyaw

Valencia Loc.

CITY OF LOS ANGELES ENVIRONMENTAL NOTICES

Notice is hereby given to the general public of the availability for public review and comment on the following environmental documents. Please call the telephone number listed in each particular item for information regarding the location where the document is available for review and where written comments must be addressed. CD indicates the City Council District. The publication is intended to serve as our Notice of Intent to adopt the following Proposed Mitigated Negative Declaration (MND) or Negative Declaration (ND).

NOTICE OF PREPARATION-NOP-12-005-PW: Notice of Preparation for the Restoration of Historic Streetcar Service in Downtown Los Angeles EIR/EA. City of Los Angeles, Bureau of Engineering is lead agency under CEQA. The Federal Transit Administration and City of Los Angeles, Department of Transportation are co-lead agencies under NEPA. The three agencies are preparing an EIR/EA. Project proposes streetcar service for a 3.8-mile loop in downtown Los Angeles running along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th (or 9th) Street, and Hill Street. Project is intended to enhance mobility and transit circulation to further revitalize downtown Los Angeles. Copies of the NOP can be obtained through http://eng/lacity.org/techdocs/emg/. Hard copies may be reviewed at the Little Tokyo Branch Library (244 S. Alameda Street) or the Central Library (630 W. 5th Street). The review period is 30 days. Scoping meetings are scheduled for January 23, 2013, (10-11 a.m. and 6:30-8 p.m.) at Caltrans Building, 100 South Main Street, Conference Room 1.A, Los Angeles. Written comments may be mailed to: Jim Doty, City of LA/Department of Public Works, BOE, 1140 S. Broadway, Suite 600, Los Angeles, CA 90015-2213.

NOTICE OF PREPARATION-NOP-13-001-PW: Notice of Preparation of an Environmental Impact Report for Griffith Park Crystal Springs New Baseball Fields Project. The City is proposing to construct two new youth baseball fields within the existing Crystal Springs Picnic Area of Griffith Park. The City is also considering two alternative locations for the project: one also within the picnic area and the second in North Atwater Park, across the Golden State (I-5) Freeway and the LA River. CDs 4 and 13. The City will prepare an EIR to analyze the environmental impacts of the proposed project and alternatives. Pursuant to CEQA, the City has prepared an Initial Study and a Notice of Preparation which are available for review beginning January 10, 2013, at Hollywood Field Office, Councilmember Tom LaBonge, CD #4, 6501 Fountain Ave., Glassell Park Satellite Office, Councilmember Eric Garcetti, CD #13, 3750 Verdugo Rd., http://eng.lacity.org/techdocs/emg/projects.htm and at the following Branch Libraries: Silver Lake and Atwater Village. You may also contact Maria Martin, Bureau of Engineering, 1149 S. Broadway, Los Angeles, CA 90015 or (213) 485-5753 to obtain a copy. Comments must be received in writing by February 8, 2013. Mail to: Maria Martin, City of Los Angeles, Bureau of Engineering, 1149 S. Broadway, Suite 600, Los Angeles, CA 90015; or e-mail (include "Griffith Park Baseball Fields" in subject) to Maria.Martin@lacity.org . A public scoping meeting to obtain input on the scope and contents of the EIR will be held on Thursday, January 24, 2013, from 4:00 6:00 p.m. at the Wilson/Harding Golf Course Banquet Room in Griffith Park, Los Angeles, CA 90027.

MITIGATED NEGATIVE DECLARATION-NG-13-001-PL: Reconsideration. ENV-2011-328. 12110 W. Rochester Ave.; West Los Angeles. Council District No. 11. A Vesting Tentative Tract Map for a 1-lot subdivision to convert an existing 18-unit apartment to an 18-unit condominium (including 1 very low income unit and 3 density bonus units) with 32 parking spaces, in lieu of the 35 parking spaces required by Advisory Agency Policy No. 2000-1, issued on May 24, 2000; and a Zoning Administrators Adjustment to allow an encroachment of 3.6 inches into the 12-ft. building line along Bundy Avenue, established by Ordinance No. 111,692. The project site is a 12,202 sq. ft. parcel of land in the R3 Zone. Please call a DAY in advance to review file: (213)978-1332. If no answer, please leave message. Documents are available for review by appointment ONLY at: Los Angeles City Hall, 200 N. Spring St., Rm 750, Los Angeles, CA 90012. Comments can be faxed to: (213)978-1343 or e-mailed to: Darlene.Navarrete@lacity.org. REVIEW/COMMENT period ends: Jan. 30, 2013

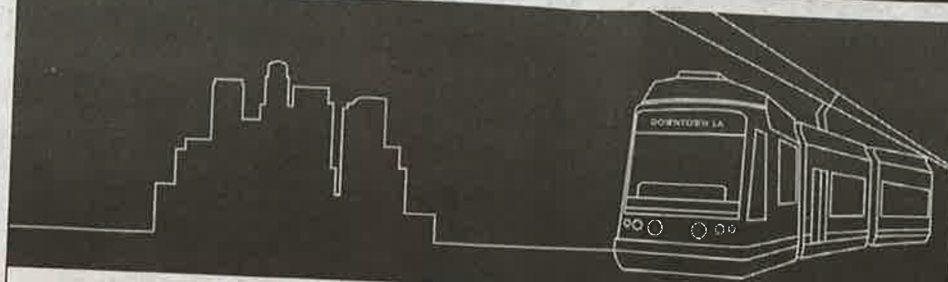
MITIGATED NEGATIVE DECLARATION-NG-13-002-PL: ENV-2012-406. 7650, 7660 and 7662 W. Beverly Blvd.; Wilshire. Council District No. 4. Pursuant to LAMC Section 12.24-W.1, a Conditional Use to permit the sale of beer and wine for off-site consumption and to permit on-site tastings of beer and wine from 10:00 am to 9:00 pm daily, in conjunction with an existing 13,317 sq. ft. grocery store with hours of operation from 8:00 am to 11:00 pm daily, all in the C2-1-O Zone. Please call a DAY in advance to review file: (213)978-1332. If no answer, please leave message. Documents are available for review by appointment ONLY at: Los Angeles City Hall, 200 N. Spring St., Rm. 750, Los Angeles, CA 90012. Comments can be faxed to: (213)978-1343 or e-mailed to: Darlene.Navarrete@lacity.org. REVIEW/COMMENT period ends: Feb. 11, 2013

MITIGATED NEGATIVE DECLARATION-NG-13-003-PL: ENV-2012-1851. 1537 N. Forfolk St.; Northeast Los Angeles. Council District No. 14. A Parking Variance to allow a total of 178 spaces in lieu of the required 282 spaces for an existing 140,964 sq. ft. building for medical and related uses (a 104 space reduction). The 178 spaces would consist of 60 existing spaces in the basement level of the existing building and an additional 118 spaces on a surface lot to be constructed on an adjoining lot in the C2-2 Zone. All existing structures on the adjoining lot would be demolished. Please call a DAY in advance to review file: (213)978-1332. If no answer, please leave message. Documents are available for review by appointment ONLY at: Los Angeles City Hall, 200 N. Spring St., Rm. 750, Los Angeles, CA 90012. Comments can be faxed to: (213)978-1343 or e-mailed to: Darlene.Navarrete@lacity.org. REVIEW/COMMENT period ends: Jan. 30, 2013

NEGATIVE DECLARATION-NG-13-004-PL: ENV-2012-2345. Lot 360 - 10420-10422 N. Telfair Ave. and Lot 361 - 10426 and 10426½ Telfair Ave.; Arleta-Pacoima. Council District No. 7. The project involves 2 lots under the same ownership with similar project, which is the conversion of 2 existing accessory living quarters to 2 single family dwellings (1 per lot) which would result in 3 dwelling units on each R1 Zoned lot, not otherwise allowed; to allow a 3-ft. side yard setback verses 5-ft. along that portion of a proposed 2-car carport; and the construction of a 6-car garage with a 3-ft. side yard setback verses 5-ft. A Zone Variance for the 3rd dwelling units will be needed and a Zoning Administrators Adjustment is needed for the reduced side yard setbacks. Small additions of 92 sq. ft. and 161 sq. ft. are proposed for each existing accessory living quarter/proposed dwelling units. Please call a DAY in advance to review file: (213)978-1332. If no answer, please leave message. Documents are available for review by appointment ONLY at: Los Angeles City Hall, 200 N. Spring St., Rm 750, Los Angeles, CA 90012. Comments can be faxed to: (213)978-1343 or e-mailed to: Darlene.Navarrete@lacity.org. REVIEW/COMMENT period ends: Jan. 30, 2013

metro.net/streetcar

Restoration of **HISTORIC STREETCAR SERVICE IN DOWNTOWN LA**



EIR SCOPING MEETINGS

You are invited to attend and provide comments at the Scoping Meetings for the Environmental Impact Report (EIR) for the Restoration of Historic Streetcar Service in Downtown LA.

The meetings will be held at the following times and location:

Wednesday, January 23, 2013
10-11am and 6:30-8pm

Caltrans Building
100 S Main St, Conference Room 1A
Los Angeles, CA 90012

All requests for reasonable accommodations and translations in other languages will be provided upon request. Please submit meeting requests 72 hours in advance to *streetcarservice@metro.net*, 213.922.3000, or the California Relay Service at 711.

For project information:

eng.lacity.org/techdocs/emg/

metro.net/streetcar

Metro

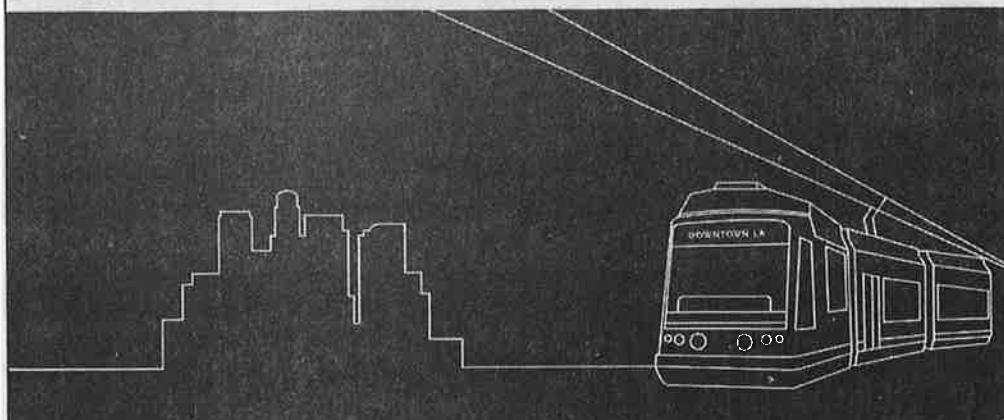
ㅐ 주요 사업으로 ▲
사업 등을 추진한다
했다. 〈이우수 기자〉

은 184만5,000달러에서 230만달러
의 가격대로 판매된다.

3785 Wilshire Blvd. LA (213)387-
9099 www.thesolair.com

metro.net/streetcar

로스앤젤레스 다운타운에 복원되는 역사적인 시내 전차 서비스



환경 영향 보고서(EIR) 평가 회의

로스앤젤레스 다운타운에 복원되는 역사적인 시내 전차 서비스를 위한 환경 영향 보고서(EIR) 평가 회의에 참석하셔서 의견을 제공하시도록 귀하를 초청합니다.

이 회의는 다음의 시간 및 장소에서 개최됩니다:

2013년 1월 23일, 수요일
오전 10:00-11:00 및 오후 6:30-8:00

Caltrans Building
100 S Main St, Conference Room 1A (회의실-1A)
Los Angeles, CA 90012

요청에 따라 적절한 편의 서비스 및 다른 언어로 통역 서비스가 제공됩니다. 회의 참석 요청은 72시간 이전에 이메일: *streetcarservice@metro.net*, 전화: 213.922.3000, 또는 캘리포니아 중계 서비스 번호 711로 예약해 주십시오.

프로젝트 정보 연락처:

eng.lacity.org/techdocs/emg/

metro.net/streetcar

Metro

rísticos diseños en zigzag y otros patrones geométricos en suéteres y bufandas, es una de las marcas de moda italianas más famosas en el exterior.

roeste del país, lo que ocasiona bajas temperaturas, vientos fuertes, nubosidad y posibilidad de aguanieve en

El organismo de la Secretaría de Gobernación (Segob) detalló que la entrada de humedad proveniente del Océano Pacífico hacia el sur del país, también originará nublados dispersos con algún potencial de precipitaciones pluviales ligeras.

Añadió que habrá am-

sierra y descan
ble aguanieve e
del noreste de B
noroeste de S
"Rumorosa".

Indicó que el
una potencia de
tros por hora y
60 kilómetros p
alcanzarán altu
y 2.5 metros de a
y zonas marí
dente de la Pe
California y en
Mar de Cortés.

En su alerta
naproc indicó
ambientes co
mayores a lo
grados centíg
tro-occidente
con frío extrem

Asimismo,
habrá un frí
nos nueve a
dos centígra
de Sonora,
Chihuahua
Durango.

La Opinión
www.laopinion.com impreMedia

AVISO A NUESTROS LECTORES

La Opinión no garantiza la autenticidad ni se responsabiliza por los precios de boletos de avión o paquetes turísticos que publican las Agencias de Viajes.

Si usted tiene alguna queja al respecto, repórtela a Los Angeles County Department of Consumer Affairs

(213) 974-1452

Gracias

La Opinión
www.laopinion.com impreMedia

ESTABLISHED SEPTEMBER 16, 1926

MAIN OFFICE:
700 SOUTH FLOWER
LOS ANGELES, CALIFORNIA
ADMINISTRATION: (213) 896-2150
EDITORIAL: (213) 896-2333
CLASSIFIED ADVERTISING: (213) 891-9191
DISPLAY ADVERTISING: (213) 896-2300
CIRCULATION: (213) 896-2222

Address all correspondence to:
P.O. BOX 15093
LOS ANGELES, CA 90015

SUBSCRIPCION POR CORREO/MAIL SUBSCRIPTION

DOMINGO/SUNDAY

	3 meses /months	6 meses /months	1 año /year
Subscripción Doméstica/ Domestic Subscription	$41.93	$83.85	$167.71
Subscripción Extranjera/ Foreign Subscription	$52.10	$104.18	$208.36

DIARIO/DAILY

	3 meses /months	6 meses /months	1 año /year
Subscripción Doméstica/ Domestic Subscription	$72.42	$144.84	$289.67
Subscripción Extranjera/ Foreign Subscription	$108.00	$214.72	$429.43

Subscription rates are payable in U.S. currency. Payments must be made in advance. Subscribers must submit new and old addresses upon change of address. Las tasas de subscripciones son pagaderas en dólares estadounidenses. Los pagos se tienen que efectuar por adelantado. Los subscriptores tienen que someter su domicilio nuevo y el anterior cuando hay cambio de domicilio.

PLEASE NOTE: LA OPINION attempts to screen advertising within the limits of its resources and does NOT knowingly accept any advertising that is false or misleading. LA OPINION does not guarantee, ensure warrant or in any way endorse any advertisement, advertiser or the products or services advertised herein. The truth of statements and/or claims made in the advertisements appearing in LA OPINION is the responsibility of the advertiser.

LA OPINION trata de seleccionar los anuncios que aparecen publicados, dentro del límite de los medios de su alcance, y NO acepta a sabiendas anuncios fraudulentos o engañosos.

LA OPINION no garantiza, asegura o respalda de manera alguna los productos o servicios que aparecen en los anuncios. La veracidad del contenido publicitario es la responsabilidad del anunciante.

LA OPINION (ISSN-0164 3886) is published daily, including Sunday and Holidays by La Opinión Limited Partnership, 700 South Flower, Los Angeles, CA 90017.

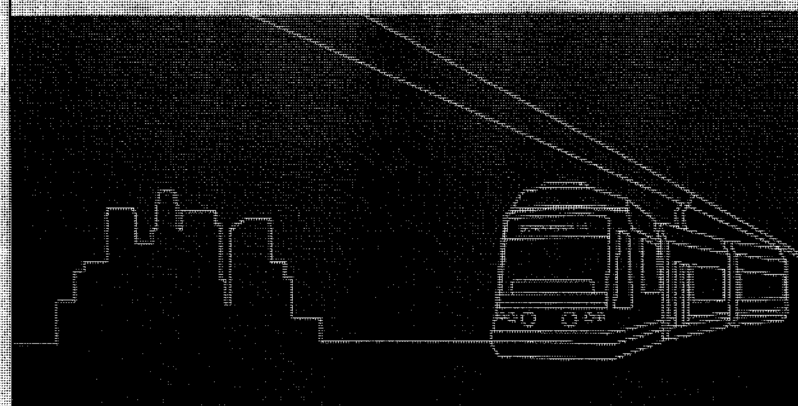
Periodicals postage paid at Los Angeles, CA.

Send address changes to:
LA OPINION, P.O. Box 15093, Los Angeles, CA 90015.

POSTMASTER: Send address changes to:
La Opinión
700 SOUTH FLOWER LOS ANGELES, CA 90017

metro.net/streetcar

ロサンゼルス・ダウンタウンの歴史的な ストリートカー運行の復旧



環境影響報告書 (EIR) スコーピングミーティング

ロサンゼルス・ダウンタウンの歴史的なストリートカー運行の復旧に関し、環境影響報告書(EIR)のためのスコーピング・ミーティングに参加し、コメントをお願いいたします。

ミーティングは以下の時と場所で行います:

2013年1月23日
午前10時から11時、午後6時30分から8時

Caltrans Building
100 S Main St, Conference Room 1A
Los Angeles, CA 90012

他国語の通訳・翻訳は、妥当な限り提供されます。申請はミーティングの72時間前までにstreetcarservice@metro.net、213.922.3000、またはCalifornia Relay Service、711までご連絡ください。

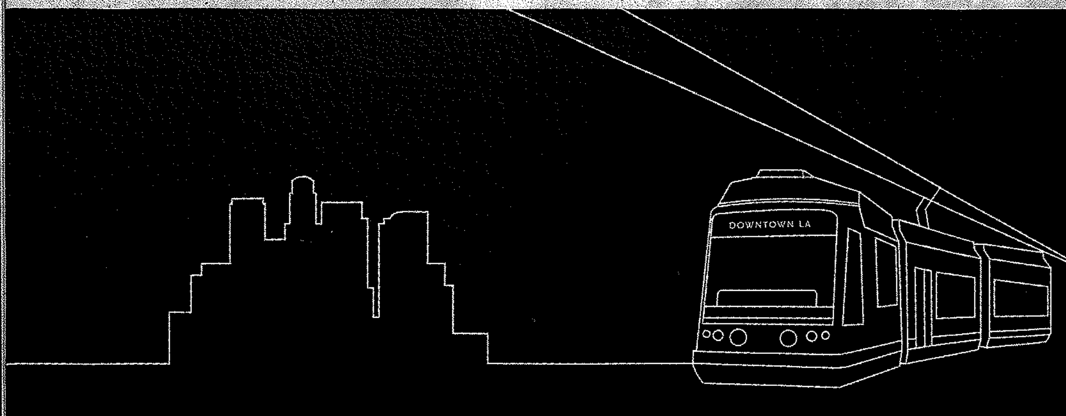
プロジェクト情報

eng.lacity.org/techdocs/emg/
metro.net/streetcar

Metro

metro.net/streetcar

洛杉磯市中心歷史街車復駛計畫



環境影響報告書(EIR)作用域會議

我們誠邀您參加洛杉磯市中心歷史街車復駛計畫環境影響報告 (EIR) 的範疇界定會議，並希望您能提出寶貴意見。

會議將於以下時間和地點舉行：

2013 年 1 月 23 日，週三
上午 10 點至 11 點，下午 6:30 至 8 點

Caltrans Building
100 S Main St, Conference Room 1A
Los Angeles, CA 90012

所有與合理膳宿及其他語言翻譯相關之要求，我們將在會議參加者提出後予以提供。請於會議召開前 72 小時將與會議相關之請求提交至 *streetcarservice@metro.net*、213.922.3000 或加州殘障轉接服務 711。

欲瞭解專案資訊：

eng.lacity.org/techdocs/emg/

metro.net/streetcar

Metro

©2012 LACMTA

Q058934-1

Appendix C: Public Meetings

Appendix C1. Display Boards

Objectives

Enhance Mobility and Transit Circulation in Downtown

- Connect major districts, destinations, and activity centers
- Improve transit coverage & circulation
- Provide simple, localized, high frequency service
- Alleviate traffic & reduce parking demand
- Serve transit-dependent populations
- Improve transit accessibility

Support the Growth and Revitalization of Downtown

- Revitalize geographically isolated, economically depressed areas
- Support smart, sustainable growth
- Foster a more livable Downtown
- Encourage historic restoration and transit-oriented development
- Strengthen Downtown's economic competitiveness

EIR/EA Process

CEQA Lead Agency
City of LA
DPW Bureau
of Engineering

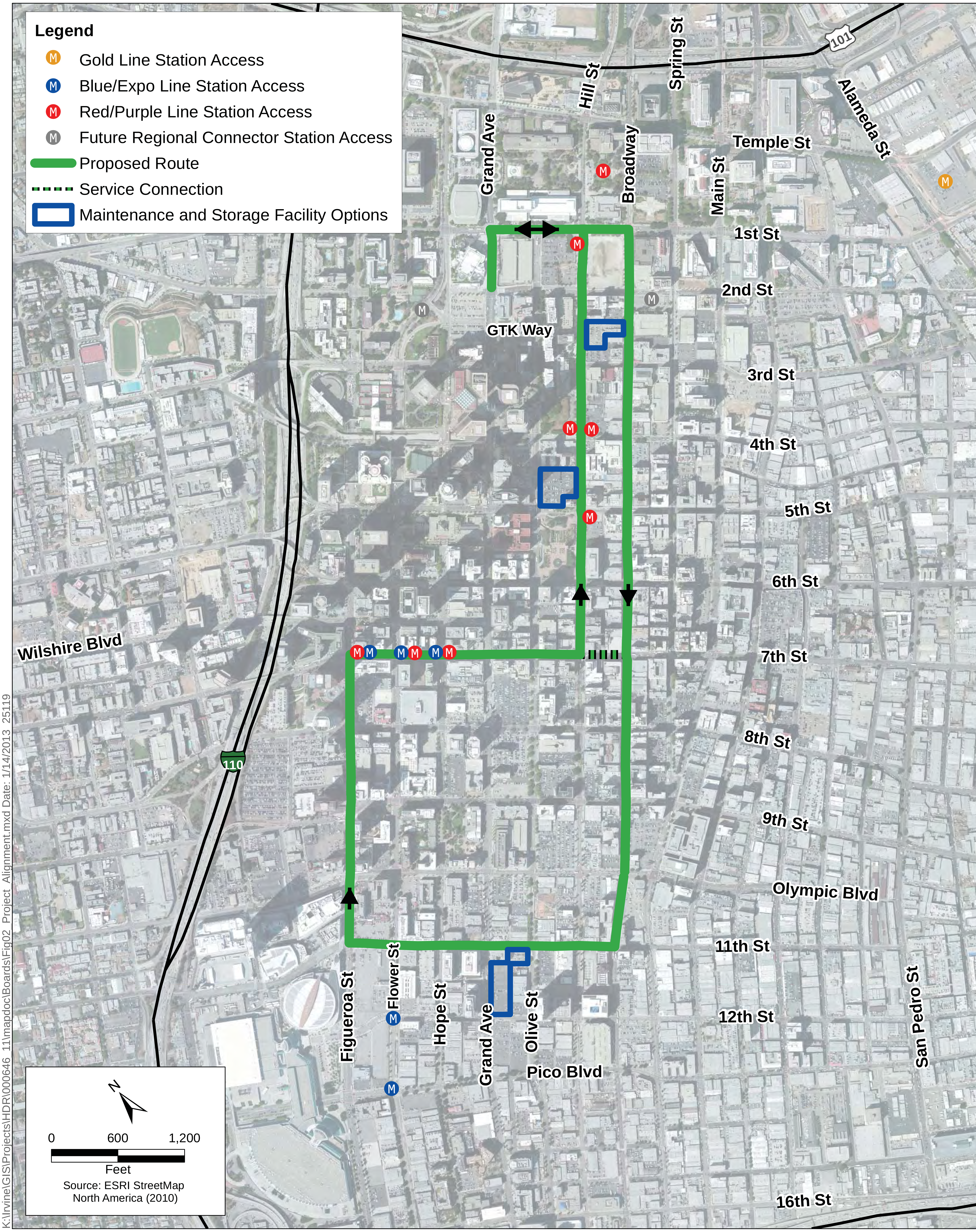
NEPA Co-Lead Agency
Federal Transit
Administration

NEPA Co-Lead Agency
City of LA
Department of
Transportation

Notice of Preparation (30 days)	Prepare Draft EIR/EA	Circulate Draft EIR/EA (45 days)	Prepare Final EIR/EA	Distribute Final EIR/EA	City Council and FTA Decision
Jan 3-Feb 1, 2013		Summer 2013		Winter 2013	Spring 2014
Public Input		Public Input			

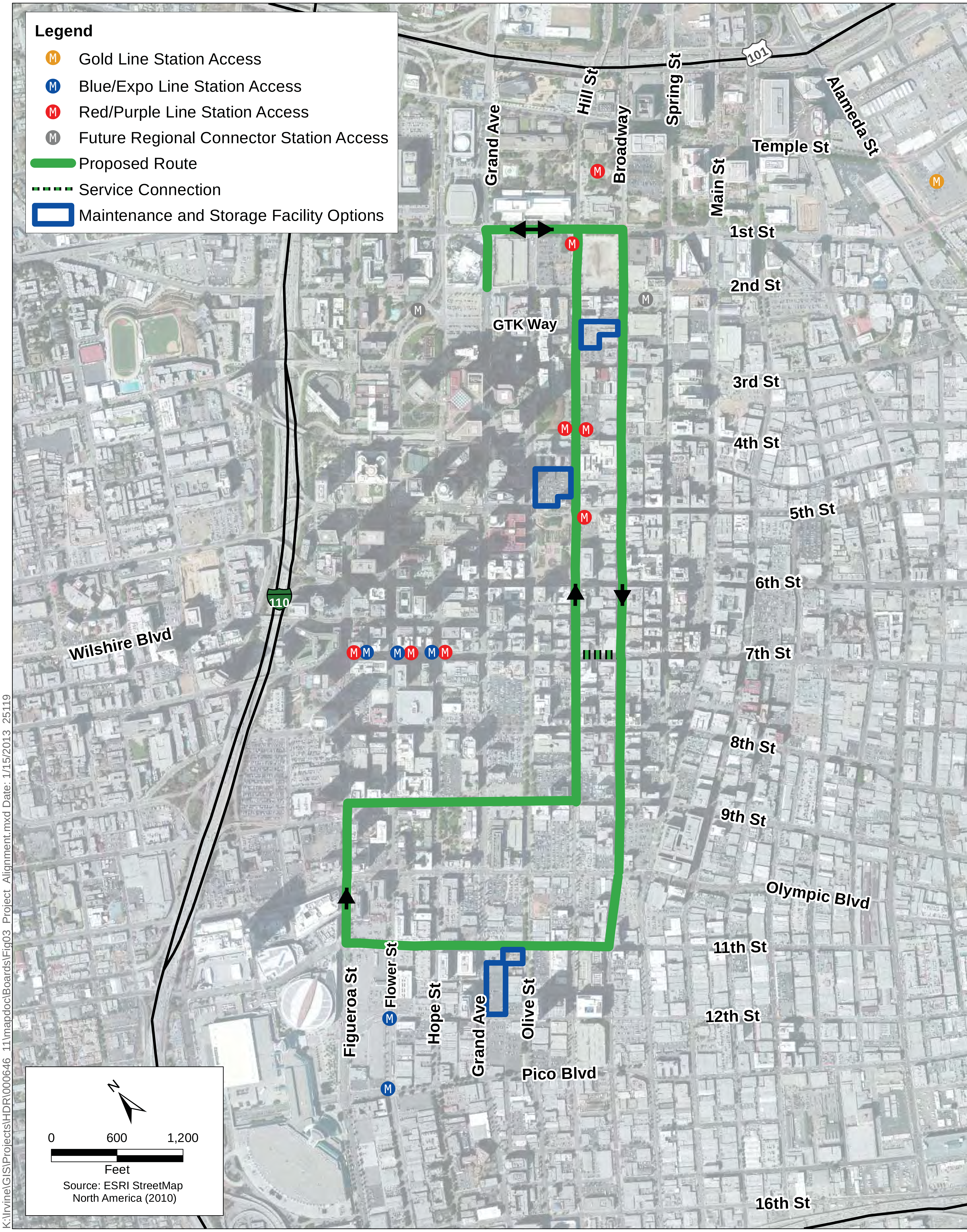
Potential Impacts to be Studied in EIR/EA

- Aesthetics
- Air Quality
- Cultural and Historic Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise and Vibration
- Transportation/Traffic
- Land Acquisitions, Displacement, and Relocation
- Community and Neighborhoods
- Parks and Recreation Areas
- Safety and Security
- Environmental Justice
- Section 4(f) Resources
- Construction Impacts
- Cumulative Impacts



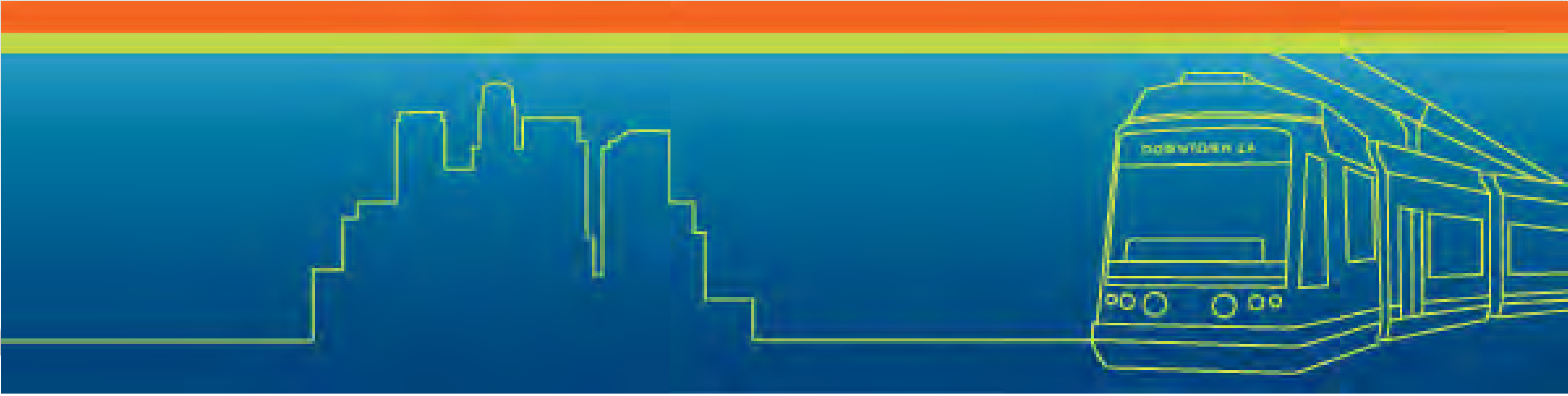
K:\Irvine\GIS\Projects\HDR\000646_11\mapdoc\Boards\Fig02_Project_Alignment.mxd Date: 1/14/2013 25119

Locally Preferred Alternative



9th Street Alternative

Appendix C2. Slide Presentation



Restoration of Historic Streetcar Service in Downtown Los Angeles

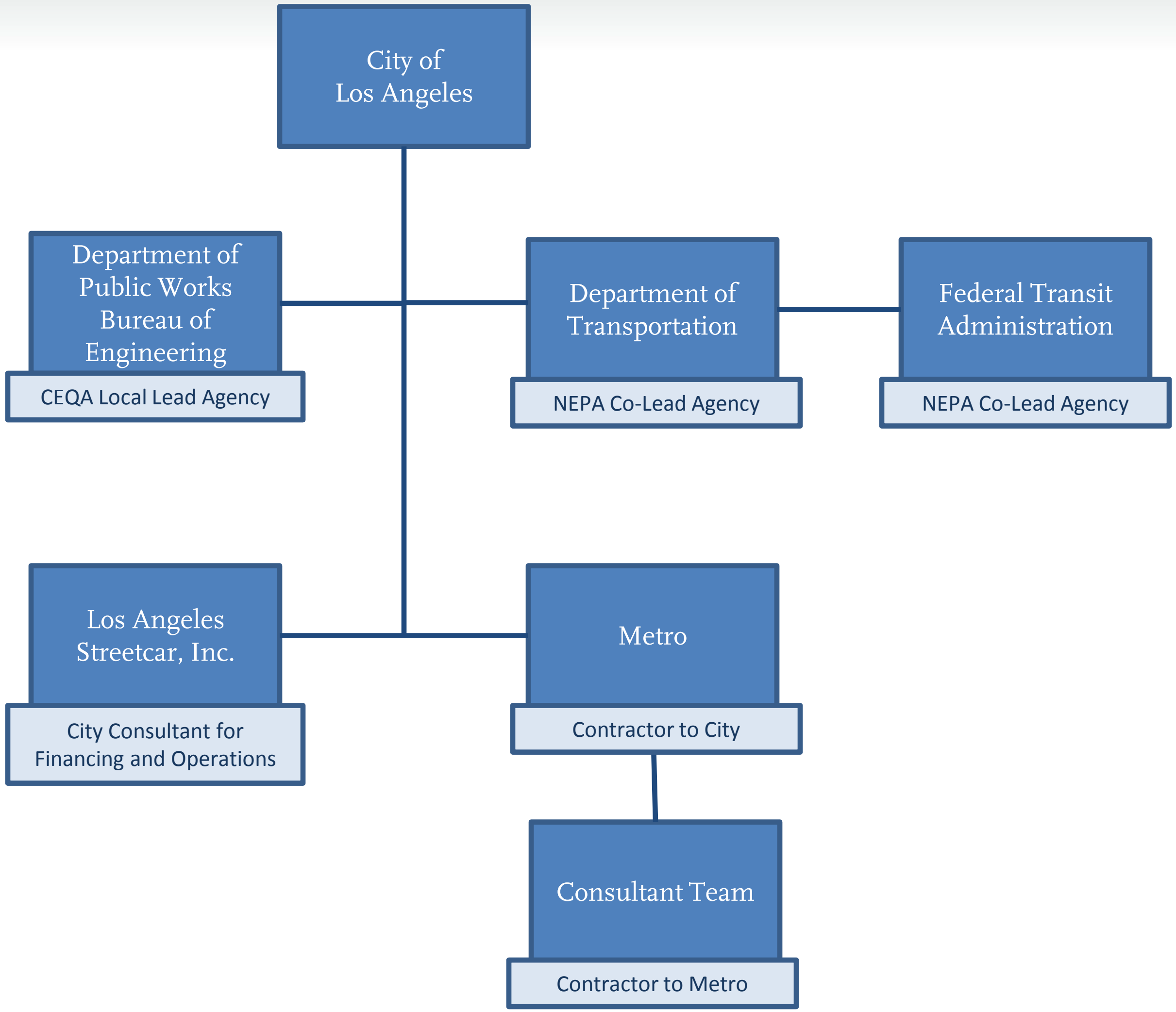
Environmental Scoping Meeting

January 23, 2013

Agenda

1. Welcome
2. Purpose of Scoping Meeting
3. Project Background and Description
4. EIR/EA Process
5. Public Comment

Organizational Chart



Purpose of Scoping Meeting

- Provide notice on preparation of EIR/EA (Environmental Impact Report/Environmental Assessment)
- Request public comment on the scope and content of the EIR/EA

Planning Process

Alternatives Analysis

Locally Preferred Alternative

Environmental Documentation (EIR/EA)

Advanced Conceptual Engineering

We are here

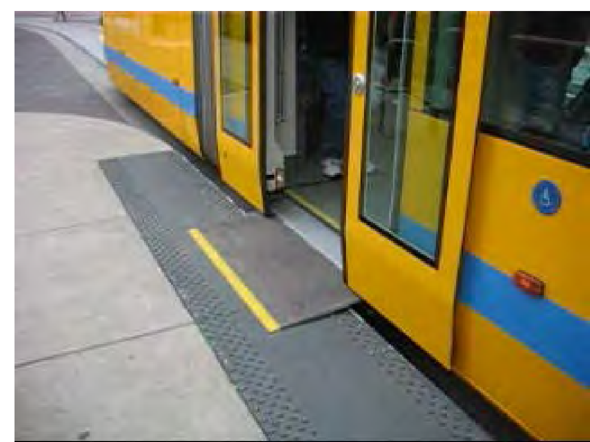
Preliminary Engineering and Final Design

Project Background

June 2006	Red Car Trolley Feasibility Study Community Redevelopment Agency [CRA])
2008-09	Community Workshops & Stakeholder Meetings (CRA, Bringing Back Broadway, LA Streetcar Inc.)
Jan 2012	Alternatives Analysis Completed (Metro)
Feb 2012	Locally Preferred Alternative Adopted (LA City Council)
July 2012	Community Facilities District Formed and Election Date Set (LA City Council)
Dec 2012	CFD Special Tax Approved (Voters)

What is a Streetcar?

- Fixed-guideway rail system with overhead wires
- Operates in mixed traffic (does not require dedicated lane)
- Can be articulated for tight turns
- Compatible with on-street parking
- Shares stops with buses
- Can be low floor with multiple doors
- Bicycles accommodated on board
- Capacity of approximately 100 passengers per vehicle



Objectives

Enhance Mobility and Transit Circulation in Downtown

- Connect major districts, destinations, and activity centers
- Improve transit coverage & circulation
- Provide simple, localized, high frequency service
- Alleviate traffic & reduce parking demand
- Serve transit-dependent populations
- Improve transit accessibility

Support the Growth and Revitalization of Downtown

- Revitalize geographically isolated, economically depressed areas
- Support smart, sustainable growth
- Foster a more livable Downtown
- Encourage historic restoration and transit-oriented development
- Strengthen Downtown's economic competitiveness

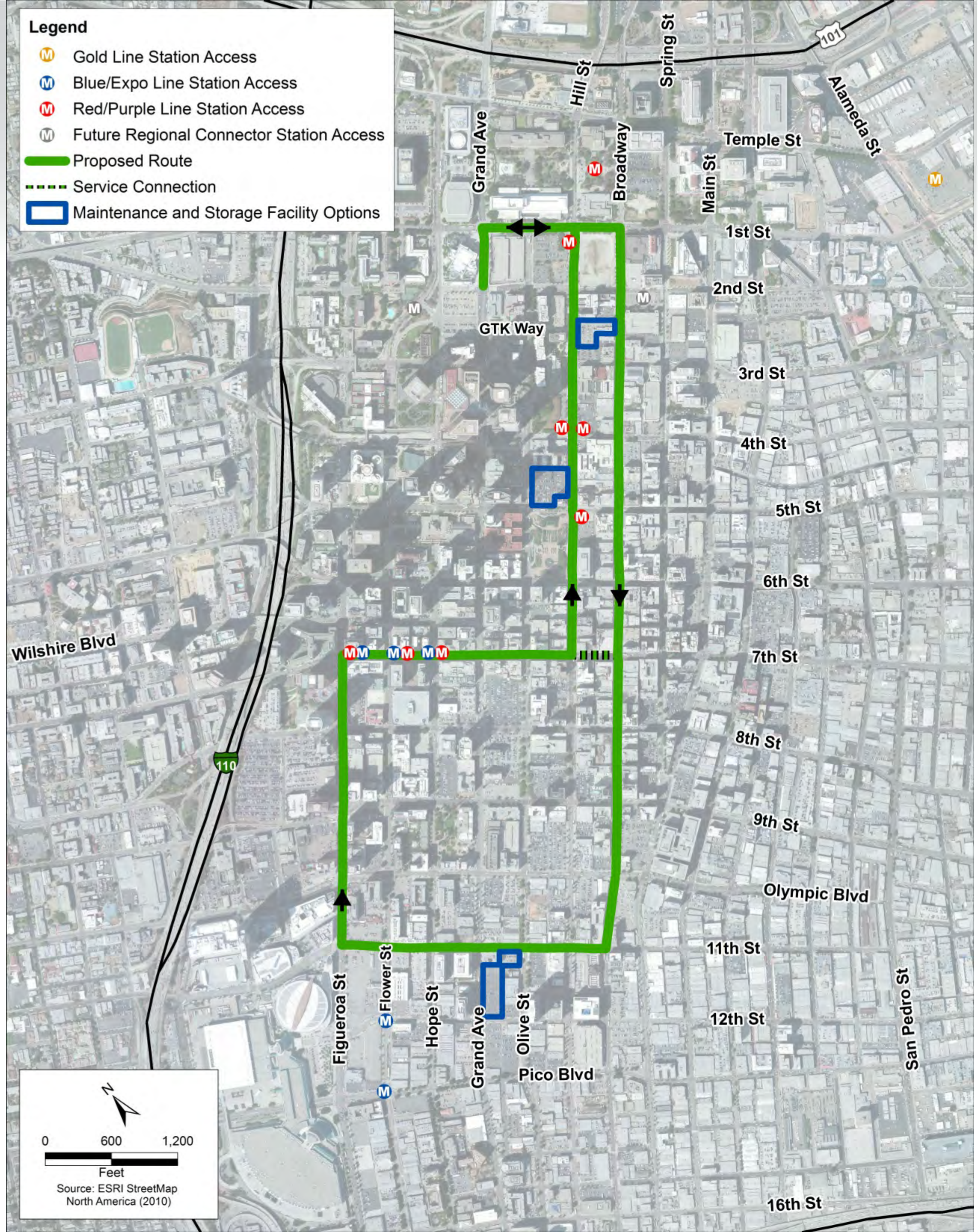
EIR/EA Analysis of 2 Build Alternatives

1. Locally Preferred Alternative (LPA)
2. 9th Street Alternative

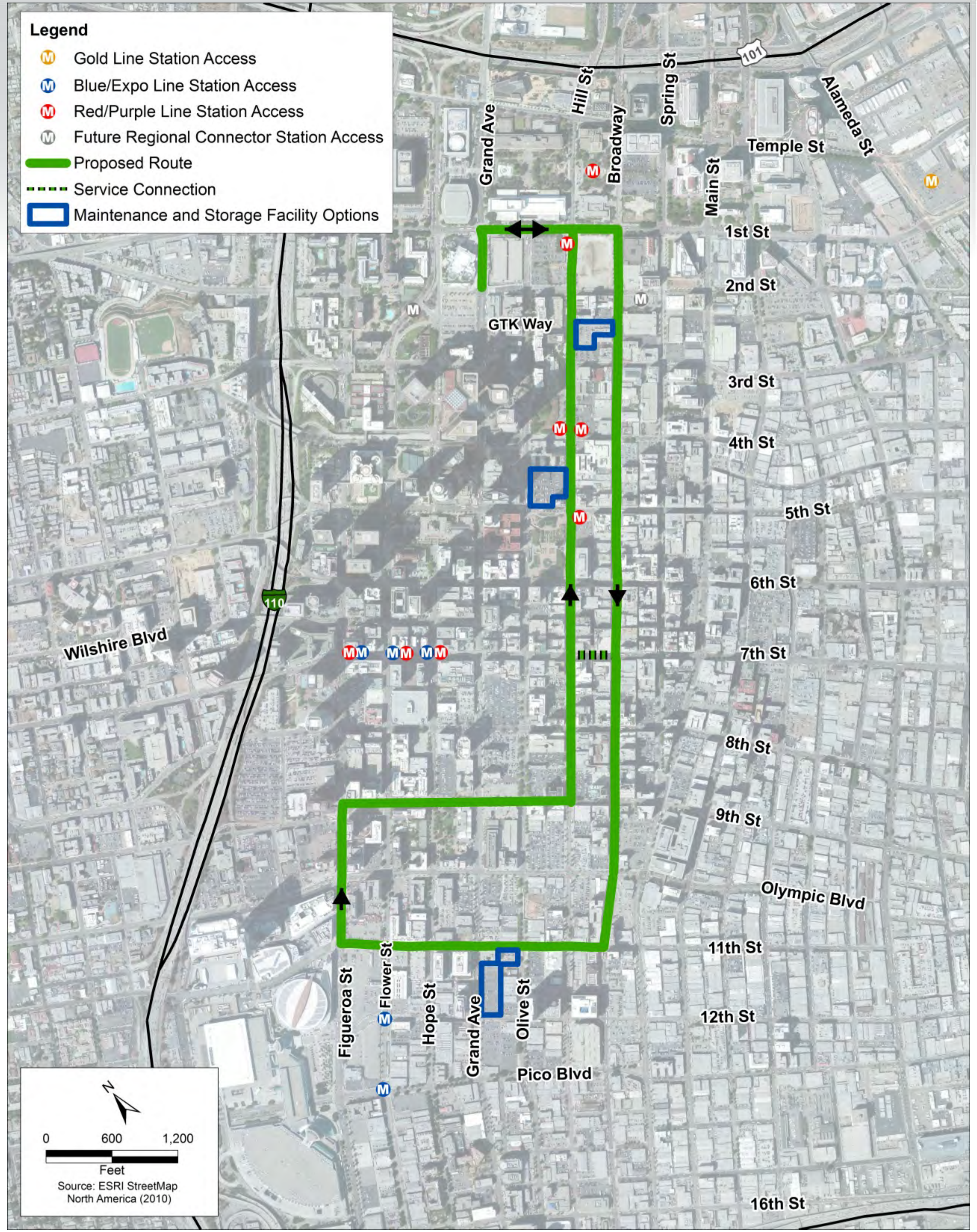
Characteristics of both Build Alternatives to be analyzed in EIR/EA

- 3.8 miles round trip, single-track
- Stops are similar to bus stops, 70 to 120 feet long, generally every block north-south, every other block east-west
- 3 vehicle maintenance and storage facility locations considered;1 location ultimately selected
- 6 to 8 traction power substation locations along route considered; 5 or 6 ultimately selected

Locally Preferred Alternative (LPA)



9th Street Alternative



EIR/EA Process

CEQA Lead Agency
City of LA
DPW Bureau of Engineering

NEPA Co-Lead Agency
Federal Transit Administration

NEPA Co-Lead Agency
City of LA
Department of Transportation

Notice of Preparation (30 days)	Prepare Draft EIR/EA	Circulate Draft EIR/EA (45 days)	Prepare Final EIR/EA	Distribute Final EIR/EA	City Council and FTA Decision
Jan 3-Feb 1, 2013		Summer 2013		Winter 2013	Spring 2014
Public Input		Public Input			

Notice of Preparation (NOP) and Initial Study (IS)

- Preliminary assessment of environmental impacts to be studied in EIR/EA
- Can be viewed at:
  - Little Tokyo Branch Library, 203 S. Los Angeles Street
  - Central Library, 630 W. 5th Street
  - http://eng.lacity.org/techdocs/emg/projects.htm
  - metro.net/streetcar

Potential Impacts to be Studied in EIR/EA

- Aesthetics
- Air Quality
- Cultural and Historic Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise and Vibration
- Transportation/Traffic
- Land Acquisitions, Displacement, and Relocation
- Community and Neighborhoods
- Parks and Recreation Areas
- Safety and Security
- Environmental Justice
- Section 4(f) Resources
- Construction Impacts
- Cumulative Impacts

Public Comment

- In writing today, comment forms and pencils are available
- By mail

  City of Los Angeles, Department of Public Works
  Bureau of Engineering, EMG
  Attention: Jim Doty
  1149 S. Broadway, Suite 600
  Los Angeles, CA 90015-2213
- By email, to jim.doty@lacity.org
- Comments are due February 1, 2013

Verbal Comment

- Please fill out a speaker card and turn it in prior to speaking

- Focus your comments on what should be included in the environmental document

- To provide everyone an opportunity, comments will be timed and limited by the moderator

Next Steps

- Prepare technical studies
- Prepare Draft EIR/EA
- Circulate Draft EIR/EA for public review

Appendix C3. Sign-in Sheets

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Abdollah Ansari	CDM Smith	523 W. 6TH ST. # 400	L.A.	90014	213.457.2181	ansaria@cdmsmith.com
[illegible]	self	1700 Mariposa Lane [illegible] CA [illegible]			818 256-0211	
Herman Gordon		622 WALL ST	LA	90014	(213)259-7224	hermanht@yahoo.com
James Kane	US. GSA	300 N LA, 4100 L.A. CA 90012	LA	90012	213 [illegible]	jim.kane@gsa.gov
Peter Stetler	Alstom					peter.stetler@transport.alstom.com
Allen lestein	US DISTRICT COURT	312 N SPRING	LA	90012	213 598 6331	allen.lestein@cacd.uscourts.gov.
Ann Gray.	Colburn.		LA.		818 956 5313	agndvise@gmail.com.
Eddie Isaacs		375 E, 2nd ST, #603 LA, CA 90012	LA	90012	213 ~~[illegible]~~ 625-4372	
Joe Lutz	Bovel & Kjaer	~~1050 Fulton Ave Sacramento Suite 213~~	Sacramento	CA	~~[illegible]~~ 916-265-7775	Joe.Lutz@BKSV.com
Alan & Deb		257 S. Spring	LA	90012		

1050 Fulton avenue
Suite 213,

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Tom Jung	LAPL	630 W. 5TH ST.	LA	90071	213-228-7474	tjung@lapl.org
Lorenzo Davis	GSA	312 N. Spring St LA CA 90012	LA	90012	213-894-4984	lorenzo.davis@gsa.gov
Amon Browning	GSA	450 Golden Gate Ave SF	SF		415-516-3427	amon.browning@gsa[illegible]
Vervj Janoyan	LADOT	100 S. Main st.	LA	90012	213-972-5050	Verej.Janoyan@lacity.org
Tony Mendoza	Parsons Brinckerhoff	444 S. Flower St.	L.A	900 71	213-28[illegible]-0933	Mendozatr@PBworld.com
Sam Ekrami	PB	" "	LA	90071	213.896.[illegible]	Ekramiss@pbworld.com
Ferdy Chan	BOE	1149 S Broadway #147	LA	90015	(213) 847 0870	ferdy.chan@lacity.org.
Tanner Blackman	CD14	City Hall	LA	90012	213 473 7014	on file
Curtis Tran	BOE	1149 S. BROADWAY SUITE 810 LA, CA 90015	LA	90015	213 485 4505	CURTIS.TRAN@LACITY.ORG
Avygail Sanchez	HNTB	601 W 5th st, #750	LA	90071	213.435.5561	avsanchez@hntb.com

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Chris Mielke	BA Inc.	800 6TH St.	LA	90017	213 622 2100	~~cmielke@baincorp.com~~
						cmielke@baincorp.com

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Gary Hamm	The Solis Group	145 Vista Ave. #104	Pasadena	91107	626-685-6989	ghamm@thesolisgroup.com
Alan Suyehara	resident	257 S. Spring St	LA	90012		alansuye@gmail.com

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Mike Cates	City LA					mike.cates@lacity.org
Nelson Ornelas	L-17 LA	608 S. Mateo St	Los Angeles	90031	323 643-7790	thor2fast@yahoo.c
Allen Wang	LABOE			90015	213 485 4904	Allen.Wang@lacity.org
ARSEN VOSKERCHYAN	LABOE			90015	213 847-4756	ARSEN.VOSKERCHYAN @lacity.org
Bryan Eck	LADCP				213-978-1309	Bryan.Eck@lacity.org
BARBARA LIN	Caltrans, etc.	POB 963 S.PASADENA		91031	626 2328061	BARBARA_LIN@DOT.CA.GOV
DEBORAH SUYEHARA	local Resident	257 S. Spring 90012	LA		~~323~~ 213 6201539	dsugehara@gmail.com

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
DANIEL SAFARIK	UNFROZEN (BLOG)	1800 EL CERRITO LA CA 90068	—	—	424 288 6222	danielsafarik@gmail.com
Kevin Ceballos	CD14	City Hall				
Greg Kay						gregokay@yahoo.com
Ken Hui						
JIM HAMLIN	JACOBS	600 WILSHIRE ST 1000 LA 90017				jim.hamlin@jacobs.com

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
John Fisher		431 Grand Ave	South Pasadena	91030		
Yara Jasso		610 S. Main St.	Los Angeles	90014		
Brady Westwater						
Scott Bytof	DLANCC			90015		scottbytof@ca.rr.com
INDER DUGAL	LADOT	100 S. Main		90012		INDER.DUGAL@LACITY.ORG

Restoration of Historic Streetcar Service in Downtown Los Angeles

January 23, 2013

Name Nombre 氏名	Affiliation Affiliacion 構成	Address Dirección 住所	City Ciudad ジップコード	Zip Código Postal 電話番号	Phone Teléfono Eメールアドレス	Email Correo electronic 氏名
Eugene Salinsky						
Adrienne Taylor						ataylor@systrausa.com
Dennis Rodriguez	Siemens					Dennis.Rodriguez@siemens.com

Appendix D: Scoping Comments

Appendix D1. Written Comments

Federal

GSA

GSA Pacific Rim Region

February 6, 2013

Jim Doty
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015

RE: Comments for the Proposed Restoration of Historic Streetcar Service in Downtown Los Angeles

Dear Mr. Doty,

GSA is in the process of planning and constructing a United States Courthouse on the block bordered on the north by 1st Street; on the south by 2nd Street; on the west by Hill Street; and on the east by Broadway. In response to the City of Los Angeles Notice of Preparation of DEIR/EA and Initial Study for the Restoration of Historic Streetcar Service in Downtown Los Angeles project, dated January 3, 2013, the General Services Administration (GSA) provides the following comments:

1. GSA requests a Threat and Vulnerability Assessment of the streetcar, in relation to the courthouse, be conducted. The Assessment should be consistent with the Federal Transportation Administration's Public Transportation System Security and Emergency Preparedness Planning Guide. This should be coordinated with the GSA and the United States Marshals Service.

2. According to the City's Notice of Preparation and Initial Study, the streetcar routes/tracks will border the courthouse site on 3 sides. In addition, the schedule of completion for the new courthouse mirrors the completion schedule of the streetcar. The close proximity of the streetcar route/tracks and the overlapping completion schedules for both projects, require careful coordination between GSA and the City. Close coordination of construction, including placement of track and stop(s) will need to be undertaken and should be memorialized in a Memorandum of Understanding. This is partially due to the overlapping construction schedules, but also due to mission critical ingress/egress points at the courthouse.

3. GSA requests an acoustic study of the streetcar operations and its impacts to the proposed courthouse be conducted. There are sensitive receptors within the courthouse that must be carefully considered.

U.S. General Services Administration
450 Golden Gate Avenue
San Francisco, CA 94102-3434
www.gsa.gov

4. While it is understood there are no current plans to extend the streetcar further west, it is likely at some time in the future it could be extended to Union Station and the development of the current phase should consider such expansion. Furthermore, should such expansion occur it would be highly desirable to choose a route that would serve 300 NLA and Roybal since there are a number of potential riders between this complex and the courthouse that could be served.

5. It is understood overhead wires will be used to power the street cars. If feasible, new, wireless technology should be used. If not, wires should have a minimal profile and be incapable of concealing devices. Cluttering up the environment with a network of overhead wires is aesthetically less desirable.

6. GSA requests the preparation and coordination of a Memorandum of Understanding (MOU) between the City and GSA to alleviate concerns regarding design and security issues.

GSA recognizes the importance of this project and appreciates your consideration of our comments. We would like to request a coordination meeting in the near future to discuss specific concerns as well as the aforementioned MOU.

We appreciate the City of Los Angeles effort to work with all stakeholders to make this project a success for the Downtown Los Angeles community. If you have any questions, please contact Amon Browning, Deputy Director, Portfolio Management Division, at 415-436-8718.

Sincerely,

Matthew Jear

Matthew Jear
Acting Director, Portfolio Management Division
Public Buildings Service
Pacific Rim Region 9
U.S. General Services Administration

Preserving America's Heritage

January 17, 2013

Ms. Elizabeth Zelasko Patel
Federal Transit Administration
Office of Planning and Environment
1200 New Jersey Avenue, SE; E45-340
Washington, DC 20590

REF: Proposed Restoration of Historic Streetcar Service in Downtown Los Angeles
Los Angeles County, California

Dear Ms. Patel:

On January 3, 2013, the Advisory Council on Historic Preservation (ACHP) received a copy from the City of Los Angeles of the Notice of Preparation of a Draft Environmental Impact Report/Environmental Assessment for the referenced undertaking. Our comments pursuant to the National Environmental Policy Act of 1969 (NEPA) were requested. We have no comments regarding the NEPA review at this time.

While the documentation provided indicates that the proposed undertaking may adversely affect historic properties, we have no record of receiving notification of adverse effects from FTA regarding this undertaking as is required under our regulations, "Protection of Historic Properties" (36 CFR Part 800). Please continue to consult with the California State Historic Preservation Office (SHPO) and other consulting parties to complete the requirements of the Section 106 process. Should FTA make an adverse effect finding regarding this undertaking, the agency should provide the required notification and documentation to ACHP in accordance with 36 CFR § 800.6 and § 800.11(e).

If you have any questions or would like to discuss this matter, please contact me by telephone at (202) 606-8527, or by e-mail at lbrodnitz@achp.gov.

Sincerely,

John T. Eddins

for Charlene Dwin Vaughn, AICP
Assistant Director
Federal Permitting, Licensing and Assistance Section
Office of Federal Agency Program

State

Jim Doty <jim.doty@lacity.org>

Streetcar EIR Scoping Meeting

1 message

Munoz, Rosa <rosa.munoz@cpuc.ca.gov> Wed, Jan 9, 2013 at 2:23 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "Pereyra, Jose" <jose.pereyra@cpuc.ca.gov>, "Garabetian, Antranig G." <antranig.garabetian@cpuc.ca.gov>

Hi,

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires the Commission approval for construction or alteration of crossings and grants the Commission exclusive power on design, alteration, and/or closure of crossings in California. The Commission's Rail Crossings Engineering Section (RCES) has received a copy of the *Environmental Impact Report (EIR) notice* for the proposed Historic Streetcar scoping meeting.

I am inquiring about the nature of the EIR scoping meeting of January 23rd. Is it of a general nature? Or are specific engineering designs going to be discussed? RCES has already participated in some engineering design meetings with the City of Los Angeles.

Thank you,

Rosa Muñoz, PE

Senior Utilities Engineer

California Public Utilities Commission

Consumer Protection & Safety Division

Rail Crossings Engineering Section

320 West 4th Street, Suite 500

Los Angeles, CA 90013-1105

213.576.7078

Rosa.Munoz@cpuc.ca.gov

PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013
(213) 576-7083

January 25, 2013

Jim Doty
City of Los Angeles DPW BOE
1149 S. Broadway, Suite 600
Los Angeles, California 90015

Dear Mr. Doty:

SUBJECT: SCH# 2013011001; Restoration of Historic Streetcar Service in Downtown Los Angeles Project

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) and rail transit projects in California. The California Public Utilities Code requires Commission approval for construction or alteration of crossings and grants the Commission exclusive power on design, alteration, and/or closure of crossings in California. In addition, all rail fixed guideway systems are subject to the Commission's Safety Oversight Program requirements. Safety certification approval is required for rail transit projects to be placed in revenue service. The Commission's Rail Crossings Engineering Section (RCES) will review crossing matters and the Rail Transit Safety Section (RTSS) will review rail transit project matters. The Commission has received a copy of the *Notice of Preparation (NOP)* from the State Clearinghouse for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles project. The City of Los Angeles (City) is the lead agency.

According to the NOP, the project would include construction of a streetcar system, running along a 3.8-mile loop within existing traffic lanes on 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. Power to the vehicles would be provided via an overhead contact system. Streetcar stops would typically resemble bus stops along the sidewalk. However, the stop on Grand Avenue north of 2nd Street is planned in the median with crosswalks to either side of the street. Approximately 60 crossings would be created along the 3.8-mile loop.

The streetcar project described in the NOP will be subject to a number of rules and regulations involving the Commission. These may include the California Public Utilities Code, Sections 1201 et al, which requires Commission authority to construct rail lines over existing streets. The design criteria of the proposed project must comply with Commission General Orders (GOs), such as GO 26-D, Clearance on Railroads and Street Railroads as to Side and Overhead Structures, Parallel Tracks and Crossings, GO 72-B, Construction and Maintenance of Crossings – Standard Types of Pavement Construction at Railroad Grade Crossings, GO 75-D, Warning Devices for At-Grade Railroad Crossings, GO 118, Construction, Reconstruction and Maintenance of Walkways and Control, of Vegetation Adjacent to Railroad Tracks, GO 143-B, Design , Construction and Operation of Light Rail Transit Systems, and GO 164-D, Regulations Governing State Safety Oversight of Rail

Fixed Guideway Systems. In addition, as part of its mission to reduce hazards associated with at-grade crossings, the Commission's policy is to reduce the number of at-grade crossings on California's rail systems.

The proposed streetcars would pass through high density commercial and residential areas of the Los Angeles Downtown district on a heavily used roadway network. The potential impacts should be identified, discussed and evaluated for necessary safety improvements and mitigations at each proposed crossing and between crossings along street-running portions of the line. This includes considering traffic circulation and queuing, level of service, interconnection of nearby signalized intersections, emergency service response, pedestrian destinations and circulation patterns with respect to the railroad tracks, and compliance with the Americans with Disabilities Act. In particular, high population density areas near rail tracks typically lead to a high amount of pedestrians and vehicles around the tracks and may result in pedestrian and vehicle conflicts with streetcars. Proper analysis and design should minimize such interactions and mitigate the risks associated with them.

Construction of a new public crossing requires authorization from the Commission, through the formal application process in accordance with the Commission's Rules of Practice and Procedure. Prior to submission of a formal application, the City should arrange a diagnostic meeting with RCES to discuss relevant safety issues and requirements for the Commission's authorization. RCES is available for consultation on crossing safety matters. The following link provides more information on the Commission's formal crossing application process: http://www.cpuc.ca.gov/PUC/safety/Rail/Crossings/formalapps.htm.

If you have any questions in this matter, please contact me at (213) 576-7076, ykc@cpuc.ca.gov, or Jose Pereyra at (213) 576-7083, jfp@cpuc.ca.gov.

Sincerely,

Ken Chiang

Ken Chiang, P.E.
Utilities Engineer
Rail Crossings Engineering Section
Safety and Enforcement Division

C: State Clearinghouse

NOP of DEIR for the Restoration of Historic Streetcar Service in Downtown Los Angeles

1 message

Laura Pennebaker <laura.pennebaker@dot.ca.gov> Wed, Jan 9, 2013 at 11:31 AM
To: jim.doty@lacity.org

Good afternoon Jim,

The California Transportation Commission received the Notice of Preparation of a Draft Environmental Impact Report for the above-mentioned project.
Is future action by the Commission (i.e a vote of funds, vote to approve a Route Adoption, and/or a vote to approve a New Public Road connection) anticipated for this project?

Sincerely,
Laura

Laura A. Pennebaker
California Transportation Commission
916.653.7121
laura.pennebaker@dot.ca.gov

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

January 16, 2013

Mr. Jim Doty, Environmental Affairs Officer
City of Los Angeles Department of Public Works BOE
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213

Re: SCH#2013011001 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"Restoration of Historic Streetcar Service in Downtown Los Angeles;"** located in Downtown Los Angeles; Los Angeles County, California

Dear Mr. Doty:

The California Native American Heritage Commission (NAHC) is the State of California 'trustee agency' for the preservation and protection of Native American cultural resources pursuant to California Public Resources Code §21070 and affirmed by the Third Appellate Court in the case of EPIC v. Johnson (1985: 170 Cal App. 3rd 604).

This letter includes state and federal statutes relating to Native American historic properties or resources of religious and cultural significance to American Indian tribes law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

The California Environmental Quality Act (CEQA – CA Public Resources Code 21000-21177, amendment s effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including …objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC advises the Lead Agency to request a Sacred Lands File search of the NAHC if one has not been done for the 'area of potential effect' or APE previously.

The NAHC "Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential and exempt from the Public Records Act pursuant to California Government Code §6254 (r).

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests cooperation from other public agencies in order that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties, including archaeological studies. The NAHC recommends *avoidance* as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and California Public Resources Code Section 21083.2 (Archaeological Resources) that requires documentation, data recovery of cultural resources, construction to avoid sites and the possible use of covenant easements to protect sites.

Furthermore, the NAHC if the proposed project is under the jurisdiction of the statutes and regulations of the National Environmental Policy Act (e.g. NEPA; 42 U.S.C. 4321-43351). Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 *et seq*), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 *et seq.* and NAGPRA (25 U.S.C. 3001-3013) as appropriate. The 1992 *Secretary of the Interiors Standards for the Treatment of Historic Properties* were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation. The aforementioned Secretary of the Interior's *Standards* include recommendations for all 'lead agencies' to consider the historic context of proposed projects and to "research" the cultural landscape that might include the 'area of potential effect.'

Confidentiality of "historic properties of religious and cultural significance" should also be considered as protected by California Government Code §6254(r) and may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C., 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity.

Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for inadvertent discovery of human remains mandate the processes to be followed in the event of a discovery of human remains in a project location other than a 'dedicated cemetery'.

To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects.

Finally, when Native American cultural sites and/or Native American burial sites are prevalent within the project site, the NAHC recommends 'avoidance' of the site as referenced by CEQA Guidelines Section 15370(a).

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Cc: State Clearinghouse

Attachment: Native American Contact List

Native American Contacts
Los Angeles County
January 16, 2013

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Gabrielino Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3094 Mace Avenue, Apt. B Gabrielino
Costa Mesa, , CA 92626
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address Gabrielino Tongva
,
tattnlaw@gmail.com
310-570-6567

Gabrielino-Tongva Tribe
Bernie Acuna, Chairperson
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
(619) 294-6660-work
(310) 428-5690 - cell
(310) 587-0170 - FAX
bacuna1@gabrieinotribe.org

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
palmsprings9@yahoo.com
626-676-1184- cell
(310) 587-0170 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2013011001; cEQA Notice of Preparation (NOP); draft Environmental Imipact Report (DEIR) for the Restoration of the Historic Streetcar Services in Downtown Los Angeles; Los Angeles County, California.

Native American Contacts
Los Angeles County
January 16, 2013

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
(626) 926-4131
gabrielenoindians@yahoo.
com

Gabrielino-Tongva Tribe
Conrad Acuna,
1875 Century Pk East #1500 Gabrielino
Los Angeles , CA 90067
310-587-2203

310-587-2203

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2013011001; cEQA Notice of Preparation (NOP); draft Environmental Imipact Report (DEIR) for the Restoration of the Historic Streetcar Services in Downtown Los Angeles; Los Angeles County, California.

Local

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

January 23, 2013

Jim Doty, Engineer
Department of Public Works
City of Los Angeles
1149 S. Broadway, Suite 600
Los Angeles, CA 90015

Dear Mr. Doty:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT, RESTORATION OF HISTORIC STREETCAR SERVICE, WOULD RUN WITHIN EXISTING TRAFFIC LANES, CONSISTS OF A FLEET OF ELECTIC-POWERED VEHICLES UTILIZING A TRACK AND ROADWAY CONFIGURATION FOR MIX-FLOW OF STREETCAR AND AUTOMOBILES, DOWNTOWN LOS ANGELES (FFER #201300003)

The Notice of Preparation has been reviewed by the Planning Division, Land Development Unit, Forestry Division and Health Hazardous Materials Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION:

1. The subject property is entirely within the City of Los Angeles, which is not a part of the emergency response area of the Los Angeles County Fire Department (also known as the Consolidated Fire Protection District of Los Angeles County). Therefore, this project does not appear to have any impact on the emergency responsibilities of this Department.

LAND DEVELOPMENT UNIT:

1. This project is located entirely in the City of Los Angeles. Therefore, the City of Los Angeles Fire Department has jurisdiction concerning this project and will be setting conditions. This project is located in close proximity to the jurisdictional area of the Los Angeles County Fire Department. However, this project is unlikely to have an impact that necessitates a comment concerning general requirements from the Land Development Unit of the Los Angeles County Fire Department.

2. The County of Los Angeles Fire Department, Land Development Unit appreciates the opportunity to comment on this project.

3. The statutory responsibilities of the County of Los Angeles Fire Department, Land Development Unit, are the review of and comment on, all projects within the unincorporated areas of the County of Los Angeles. Our emphasis is on the availability of sufficient water supplies for firefighting operations and local/regional access issues. However, we review all projects for issues that may have a significant impact on the County of Los Angeles Fire Department. We are responsible for the review of all projects within Contract Cities (cities that contract with the County of Los Angeles Fire Department for fire protection services). We are responsible for all County facilities, located within non-contract cities.

   The County of Los Angeles Fire Department, Land Development Unit may also comment on conditions that may be imposed on a project by the Fire Prevention Division, which may create a potentially significant impact to the environment.

4. Should any questions arise regarding subdivision, water systems, or access, please contact the County of Los Angeles Fire Department, Land Development Unit Inspector, Nancy Rodeheffer, at (323) 890-4243 or nrodeheffer@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

1. The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Draft Environmental Impact Report.

HEALTH HAZARDOUS MATERIALS DIVISION:

1. The Health Hazardous Materials Division has no objection.

If you have any additional questions, please contact this office at (323) 890-4330.

Very truly yours,

Frank Vidales

FRANK VIDALES, ACTING CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

FV:ij

FORM GEN. 160 (Rev. 6-80)

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

File: SC.CE.

DATE: January 15, 2013

TO: Jim Doty, Environmental Affairs Officer
Environmental Management Group
Bureau of Engineering

FROM: Ali Poosti, Division Manager
Wastewater Engineering Services Division
Bureau of Sanitation

SUBJECT: **Restoration of Historic Streetcar Service – Notice of Preparation Draft EIR**

This is in response to your January 3, 2013 letter requesting wastewater service information for the proposed project to construct a streetcar system. The Bureau of Sanitation, Wastewater Engineering Services Division (WESD) has reviewed the request and found the project to be related to the construction and implementation of a streetcar service only.

Based on the project description, we have determined that the project is unrelated to sewer capacity availability and therefore do not have sufficient detail to offer an analysis at this time. However, as you develop your project alignment please ensure that you put in place mitigation measures whenever your project comes near, in contact or interfere with a sewer infrastructure to guarantee the continued safe operation of such structures. Should the project description change, please continue to send us information so that we may determine if a sewer assessment is required in the future.

If you have any questions, please call Kwasi Berko of my staff at (323) 342-1562.

Metropolitan Transportation Authority

Metro

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

February 11, 2013

Mr. Jim Doty, Acting Group Manager
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213

Subject: Notice of Preparation of a Draft Environmental Impact Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

Dear Mr. Doty:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles. This letter conveys recommendations from the Los Angeles County Metropolitan Transportation Authority (LACMTA) concerning issues that are germane to our agency's transit services and statutory responsibilities in relation to the proposed project.

With respect to the proposed project's potential impacts on Metro and municipal transit services, the following concerns should be addressed in the Draft Environmental Impact Report (EIR):

1) Maximizing Inter-modal Connectivity: The project sponsor should consult LACMTA staff regarding how the project can enhance connectivity with other forms of transit, especially the connections with Union Station;
2) Metro Regional Connector: Construction of the proposed project may coincide with construction of the Metro Regional Connector underground light rail project along 2nd Street. To avoid any potential conflicts during construction and subsequent project operation, the project sponsor should coordinate planning, design, and construction efforts with the Metro Regional Connector Project Team and Design Builder during various planning stages and prior to the start of and during construction;
3) Project Construction Impacts: Several transit corridors with Metro bus service could be impacted by construction of the streetcar and its associated maintenance facility. For short term construction activities that may impact Metro bus lines, Metro Bus Operations Control Special Events Coordinator should be contacted at 213-922-4632. Long term construction activities should be coordinated with Metro Service Planning & Scheduling at 213-922-1228. Municipal bus service operators including LADOT may also be impacted and therefore should be included in construction outreach efforts;
4) Operational Impacts: Streetcar service sharing right-of-way with Metro and municipal buses may result in reduced bus operations capacity. Potential disruptions to bus operations should be analyzed in the EIR and appropriate mitigation measures identified in consultation with Metro Service Planning & Scheduling and with other municipal bus operators. Moreover, the agency responsible for operating the streetcar service must also incur the costs associated with implementing the appropriate mitigation measures;
5) Service Disruptions: Potential streetcar service disruptions on street segments shared by Metro and municipal buses may result in obstructed bus operations. A temporary

bus operations plan to mitigate obstructed bus operations should be developed in consultation with Metro Service Planning & Scheduling and with other municipal bus operators. Moreover, the agency responsible for operating the streetcar service must also incur the costs associated with implementing the temporary bus operations plan;

6) Joint Use of Streetcar Platforms: The project sponsor should consult with Metro Service Planning & Scheduling regarding joint use of streetcar platforms by adjacent Metro bus service;
7) Potential Feeder Service: The project sponsor should consult with Metro Service Planning & Scheduling regarding potential feeder bus lines offering transit connections between streetcar stops and various destinations in and around Downtown Los Angeles;
8) Traction Power Substation (TPSS): Prior to selection of the various TPSS locations along the proposed alignment, the project sponsor should consult with LACMTA as soon as possible especially should it involve a location on or near LACMTA facilities. The project sponsor should also coordinate with LACMTA so as to avoid any potential conflicts during construction or operation of the TPSS;
9) Environmental Policies: The LACMTA Board has recently passed several policies to reduce the environmental impact of its projects. These policies have been incorporated in all projects adjacent to or within the footprint of the streetcar project. LACMTA encourages the streetcar project to look into the implementation of similar policies like LACMTA's Environmental Policy, Green Construction Policy and Construction Demolition Debris Recycling and Reuse Policy to reduce air quality and water quality impacts during construction. LACMTA is also encouraging the project sponsor to look into the Metro Renewable Energy Policy to potentially reduce project construction energy use; and operations energy demand and operations costs.

LACMTA looks forward to reviewing the Draft EIR. If you have any questions regarding this response, please contact Scott Hartwell at 213-922-2836 or by email at hartwells@metro.net. Please send the Draft EIR to the following address:

LACMTA CEQA Review Coordination
One Gateway Plaza MS 99-23-2
Los Angeles, CA 90012-2952
Attn: Scott Hartwell

Sincerely,

Martha Welborne

Martha Welborne, FAIA
Executive Director, Countywide Planning

From:	Jim Doty
To:	Ara Kasparian; Franco, Paulette; James Lefton; Chivaratanond, Susan
Subject:	Fwd: Reminder - Streetcar Comments Needed 2/1
Date:	Tuesday, January 29, 2013 7:46:23 AM

---------- Forwarded message ----------
From: **Ripaldi, Carl** <RipaldiC@metro.net>
Date: Tue, Jan 29, 2013 at 7:36 AM
Subject: RE: Reminder - Streetcar Comments Needed 2/1
To: Ginny-Marie Brideau <GBrideau@therobertgroup.com>, "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "Chivaratanond, Susan" <ChivaratanondS@metro.net>, "Liban, Emmanuel" <LibanE@metro.net>, "Roy, Girish" <ROYG@metro.net>, "ray.sosa@aecom.com" <ray.sosa@aecom.com>

Dear Jim, Ginny and Susan:

I have reviewed the Initial Study for the Restoration of Historic Streetcar Service in Downtown Los Angeles and have the following comments and suggestions for inclusion in the Environmental Studies as we proceed on this exciting project:

1. Within the organization chart for the project presented in you Powerpoint Presentation it would be helpful to identify who in Metro is dealing with the Environmental Clearance in association with the City of LA as well as who the Environmental Consultant is for the project. This contact information is essential.

2. The Initial Study indicated that there are three potential sites for the Storage and Maintenance Yard for the project. You need to explain how much trolley storage is necessary for this project and describe what maintenance operations will occur in the yard. What are the noise and hazardous materials storage issues associated with this yard? Are the sites identified compatible with their surroundings? Are these sites adjacent to commercial and residential complexes?

3. I would suggest that for the figures included in the documents where you chose highlighting for the alignments that a choice is made that will show up on a black and white copy of the study. Not everyone has access to a color printer. That way anyone who chooses to run off a hard copy of the document will be able to see the alignment clearly.

4. Regarding the TPSS requirements for the Project, five or six will be required. Have these been assessed for space availability and possible adjacency problems? For example, are some of these sites next to residential or business complexes? It may be necessary to provide aesthetic enhancements and landscaping to the TPSS plans to make them acceptable to adjacent businesses and residential complexes. This has been done for a number of TPSS sites serving Metro Light Rail lines.

5. The Environmental Studies need to address the presence and alignment of Metro's Regional Connector Project, as well as the projected dates for constrution. Where along the proposed alignment will there be Transfer opportunities for passengers form both the Trolley and Regional Connector lines? Also, what are the expected dates of construction for the Trolley Project versus the Regional Connector Project? Will there be conflicts with utility construction and cut and cover construction of stations for the Regional Connector with the

surface construction activities for the Trolley Project?

Please be sure to take these comments into consideration as you proceed with the Environmental Clearance of this exciting Project.

Sincerely yours,

Carl Peter Ripaldi

Principal Environmental Specialist

213 922-7304

From: Ginny-Marie Brideau [mailto:GBrideau@TheRobertGroup.com]
Sent: Monday, January 28, 2013 11:29 AM
To: Ripaldi, Carl
Subject: RE: Reminder - Streetcar Comments Needed 2/1

Susan Chivaratanond

Ginny Brideau, The Robert Group

gbrideau@therobertgroup.com

(o) 323.669.9100 (f) 323.669.9800 (m) 213.248.0698

Twitter: @TheRobertGroup

From: Ripaldi, Carl [mailto:RipaldiC@metro.net]
Sent: Monday, January 28, 2013 11:29 AM
To: Ginny-Marie Brideau
Subject: RE: Reminder - Streetcar Comments Needed 2/1

Dear Ginny:

I will review the Initial Study.

Do you know who in Metro is handling this project?

The org chart indicates that Metro is handling the environmental clearance through a consultant!

Regards,

Carl

From: Ginny Brideau [mailto:gbrideau=therobertgroup.com@mail76.us2.rsgsv.net] **On Behalf Of** Ginny Brideau
Sent: Monday, January 28, 2013 9:01 AM
To: Ripaldi, Carl
Subject: Reminder - Streetcar Comments Needed 2/1

This is a reminder email regarding the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.

A copy of the Notice of Preparation is available for download by visiting:
http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf

A copy of the Initial Study:
http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA_Initial_Study.pdf

A copy of the presentation given:
http://www.metro.net/projects_studies/historic-streetcar/images/streetcar_eirscoping_meetingfinal_20130123.pdf

Please note: responses to the scoping can be emailed to jim.doty@lacity.org, or

sent via postal mail to:
City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213

Please be sure to get your comments in by February 1, 2013 and no later than February 11, 2013.

--
Jim Doty, Manager
Environmental Management Group
Public Works Engineering
1149 S Broadway Ste 601
Los Angeles, CA 90015
213-485-5759

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag.ca.gov

February 4, 2013

Mr. Jim Doty
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 South Broadway, Suite 600
Los Angeles, CA 90015
Jim.doty@lacity.org

RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Historic Streetcar Service in Downtown Los Angeles Project [I20130003]

Dear Mr. Doty:

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the Historic Streetcar Service in Downtown Los Angeles Project to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review (IGR) of programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372. Additionally, SCAG reviews the Environmental Impact Reports of projects of regional significance for consistency with regional plans pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.

SCAG is also the designated Regional Transportation Planning Agency under state law, and is responsible for preparation of the Regional Transportation Plan (RTP) including its Sustainable Communities Strategy (SCS) component pursuant to SB 375. As the clearinghouse for regionally significant projects per Executive Order 12372, SCAG reviews the consistency of local plans, projects, and programs with regional plans.[1] Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of the regional goals and policies in the RTP/SCS.

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Historic Streetcar Service in Downtown Los Angeles Project. The proposed project includes a streetcar system that would run through existing traffic lanes in downtown Los Angeles. As set forth in the attached, SCAG recommends that the EIR include a review and consideration of the goals in the adopted RTP/SCS and that the analyses reflect the most recently adopted growth forecasts.

When available, please send environmental documentation to SCAG's *main office in Los Angeles* providing, at a minimum, the *full comment period for review.*

If you have any questions regarding the attached comments, please contact Pamela Lee at (213) 236-1895 or leep@scag.ca.gov. Thank you.

Sincerely,

Jonathan Nadler

Jonathan Nadler
Manager, Compliance and Performance Assessment

[1] SB 375 amends CEQA to add Chapter 4.2 Implementation of the Sustainable Communities Strategy, which allows for certain CEQA streamlining for projects consistent with the RTP/SCS. Lead agencies (including local jurisdictions) maintain the discretion and will be solely responsible for determining "consistency" of any future project with the SCS. Any "consistency" finding by SCAG pursuant to the IGR process should not be construed as a finding of consistency under SB 375 for purposes of CEQA streamlining.

COMMENTS ON THE NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES PROJECT [SCAG NO. I20120308]

CONSISTENCY WITH RTP/SCS

SCAG reviews environmental documents for regionally significant projects for their consistency with the adopted RTP/SCS.

RTP/SCS Goals

The 2012-20135 RTP/SCS links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations (see http://rtpscs.scag.ca.gov). The goals included in the 2012 RTP/SCS may be pertinent to the proposed project. These goals are meant to provide guidance for considering the proposed project within the context of regional goals and policies. Among the relevant goals of the 2012-2035 RTP/SCS are the following:

SCAG 2012-2035 RTP/SCS GOALS	
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region*
RTP/SCS G3:	*Ensure travel safety and reliability for all people and goods in the region*
RTP/SCS G4:	*Preserve and ensure a sustainable regional transportation system*
RTP/SCS G5:	*Maximize the productivity of our transportation system*
RTP/SCS G6:	*Protect the environment and health for our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking)*
RTP/SCS G7:	*Actively encourage and create incentives for energy efficiency, where possible*
RTP/SCS G8:	*Encourage land use and growth patterns that facilitate transit and non-motorized transportation*
RTP/SCS G9:	*Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies*

For ease of review, we encourage the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency or non-applicability of the policy and supportive analysis in a table format. Suggested format is as follows:

SCAG 2012-2035 RTP/SCS Goals		
Goal		**Analysis**
RTP/SCS G1:	*Align the plan investments and policies with improving regional economic development and competitiveness.*	*Consistent: Statement as to why* *Not-Consistent: Statement as to why* *or* *Not Applicable: Statement as to why* *DEIR page number reference*
RTP/SCS G2:	*Maximize mobility and accessibility for all people and goods in the region.*	*Consistent: Statement as to why* *Not-Consistent: Statement as to why* *or* *Not Applicable: Statement as to why* *DEIR page number reference*
RTP/SCS G3:	*Ensure travel safety and reliability for all people and goods in the region.*	*Consistent: Statement as to why* *Not-Consistent: Statement as to why* *or* *Not Applicable: Statement as to why* *DEIR page number reference*
etc.	etc.	etc.

Regional Growth Forecasts

The Notice of Preparation of an Environmental Impact Report for the Historic Streetcar Service in Downtown Los Angeles Project should reflect the most recently adopted SCAG forecasts (see http://scag.ca.gov/forecast/index.htm), which are the 2012-2035 RTP/SCS population, household and employment forecasts. The forecasts for the region and applicable jurisdictions are below.

	Adopted SCAG Region Wide Forecasts		Adopted City of Los Angeles Forecasts	
Forecast	**Year 2020**	**Year 2035**	**Year 2020**	**Year 2035**
Population	19,663,000	22,091,000	3,991,700	4,320,600
Households	6,458,000	7,325,000	1,455,700	1,626,600
Employment	8,414,000	9,441,000	1,817,700	1,906,800

MITIGATION

SCAG staff recommends that you review the SCAG 2012-2035 RTP/SCS Final Program EIR List of Mitigation Measures Appendix for additional guidance, as appropriate. The SCAG List of Mitigation Measures may be found here: http://scag.ca.gov/igr/pdf/SCAG_IGRMMRP_2012.pdf

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

January 9, 2013

Jim Doty
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015

Notice of Preparation of a CEQA Document for the
Restoration of Historic Streetcar Service in Downtown Los Angeles

The South Coast Air Quality Management District (SCAQMD) appreciates the opportunity to comment on the above-mentioned document. The SCAQMD's comments are recommendations regarding the analysis of potential air quality impacts from the proposed project that should be included in the draft CEQA document. Please send the SCAQMD a copy of the Draft EIR upon its completion. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to the SCAQMD. Please forward a copy of the Draft EIR directly to SCAQMD at the address in our letterhead. **In addition, please send with the draft EIR all appendices or technical documents related to the air quality and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files. These include original emission calculation spreadsheets and modeling files (not Adobe PDF files). Without all files and supporting air quality documentation, the SCAQMD will be unable to complete its review of the air quality analysis in a timely manner. Any delays in providing all supporting air quality documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis
The SCAQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. The SCAQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from the SCAQMD's Subscription Services Department by calling (909) 396-3720. The lead agency may wish to consider using land use emissions estimating software such as the recently released CalEEMod. This model is available on the SCAQMD Website at: http://www.aqmd.gov/ceqa/models.html.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis.

The SCAQMD has developed a methodology for calculating PM2.5 emissions from construction and operational activities and processes. In connection with developing PM2.5 calculation methodologies, the SCAQMD has also developed both regional and localized significance thresholds. The SCAQMD requests that the lead agency quantify PM2.5 emissions and compare the results to the recommended PM2.5 significance thresholds. Guidance for calculating PM2.5 emissions and PM2.5 significance thresholds can be found at the following internet address: http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html.

In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at http://www.aqmd.gov/ceqa/handbook/LST/LST.html.

In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages at the following internet address: http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html. An analysis of all toxic air contaminant impacts due to the decommissioning or use of equipment potentially generating such air pollutants should also be included.

Mitigation Measures

In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts. To assist the Lead Agency with identifying possible mitigation measures for the project, please refer to Chapter 11 of the SCAQMD CEQA Air Quality Handbook for sample air quality mitigation measures. Additional mitigation measures can be found on the SCAQMD's CEQA web pages at the following internet address: www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html Additionally, SCAQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook contain numerous measures for controlling construction-related emissions that should be considered for use as CEQA mitigation if not otherwise required. Other measures to reduce air quality impacts from land use projects can be found in the SCAQMD's Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. This document can be found at the following internet address: http://www.aqmd.gov/prdas/aqguide/aqguide.html. In addition, guidance on siting incompatible land uses can be found in the California Air Resources Board's Air Quality and Land Use Handbook: A Community Perspective, which can be found at the following internet address: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Pursuant to state CEQA Guidelines §15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed.

Data Sources

SCAQMD rules and relevant air quality reports and data are available by calling the SCAQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available via the SCAQMD's World Wide Web Homepage (http://www.aqmd.gov).

The SCAQMD staff is available to work with the Lead Agency to ensure that project-related emissions are accurately identified, categorized, and evaluated. If you have any questions regarding this letter, please call Ian MacMillan, Program Supervisor, CEQA Section, at (909) 396-3244.

Sincerely,

Ian V. MacMillan

Ian MacMillan
Program Supervisor, CEQA Inter-Governmental Review
Planning, Rule Development & Area Sources

IM
LAC130103-07
Control Number

Organization

EVO

Gerry Suenram, Gen. Manager
1155 S. Grand Ave.
Los Angeles, CA 90015

gsuenram@actionlife.com
Nov. 9, 2012
213 741 2700

Mr. Jim Doty
Environmental Affairs Officer
City of Los Angeles

RE: No on Grand Ave. Rail Yard Project

Dear Mr. Doty,

Following this cover letter are the responses and comments to a survey taken this week of our 316 members regarding the possible construction of a rail yard on Grand Ave. at 11th-12th Streets. Ninety-three percent of respondents voted in the negative on this proposed siting. Please take a moment to read the comments that follow this vote, as many of our members are shocked that the city would even conjecture such a placement. Here is a sampling of the seventy-five comments:

> "I strongly disapprove of this location for the rail yard. I just can't imagine how noisy it'd be for me living right in front of this lot. Please don't!"

> "Noise traffic unsightly....this would not be an asset to the neighborhood. I thought the city wanted to rebuild and improve the community. I would not have purchased my home in the Evo building had I known there was this type of facility going in."

> "The South Park area is just being revitalized and is vulnerable to slipping back into a haven for transients. It is not in the area's best interest to have the rail yard in the neighborhood."

As you must be aware, many of the homeowners in our development, which includes Luma HOA and Elleven HOA, or some seven hundred condominiums, are still in a negative position relative to their mortgage and the value of their units. This loss of value placed great stress on our Homeowners Associations which struggled to maintain themselves through the financial crises and recession. To hear now that our city officials are considering a move that will, without question, further degrade our property values is a betrayal of our support for the streetcar.

We hope and trust that the Grand Ave. site will not be chosen as placement for this rail yard.

Cordially,
Gerry Suenram, Gen. Manager

Cc: Evo HOA, Luma HOA, Elleven HOA Members
Councilmember Jose Huizar, 14th District
Matt Davidson, Action Property Management

Evo LA Streetcar Rail Yard Survey

SurveyMonkey

1. Evo Members & Residents! As you may be aware, the city is considering building a rail yard for the new streetcar project across the street from us. The rail cars would be stationed and maintained in the area that is now a parking lot on Grand Ave. between 11th and 12th Streets. Please let Jim Doty, Environmental Affairs Officer at City of Los Angeles, and Councilmember Huizar know your opinion on this choice of a location by voting here. Here is a link to a short presentation about the streetcar: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf. Comments may be emailed directly to: jim.doty@lacity.org

	Response Percent	Response Count
Yes, I approve of this location for the rail yard.	7.3%	11
No, I disapprove of this location for the rail yard.	**92.7%**	**139**
	answered question	**150**
	skipped question	**1**

2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar

	Response Count
	75
answered question	**75**
skipped question	**76**

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
1	Terrible location for what should be future residential development.	Feb 9, 2013 5:07 AM
2	Los Angeles finally has a chance to become a world class City. Don't impede the progress by destroying what progress has already been made.	Feb 8, 2013 9:49 PM
3	I strongly disapprove of this location for the rail yard. I just can't imagine how noisy it'd be for me leaving right in front of this lot, please don't	Feb 8, 2013 8:57 PM
4	I strongly oppose this location site for the rail yard. I have invested in and live in a luxury condominium across the street in EVO. Rail yards are associated with industrial areas and South Park has been developed to encourage and foster an upscale residential community with supermarkets and parks. The EVO properties are perfect examples of the type of development needed in this area to fulfill the promise of South Park. If the rail yard is built across the street, I and other property owners at EVO will relocate invest elsewhere outside of downtown LA.	Feb 8, 2013 2:59 PM
5	Building the rail yard directly across the street from EVO, a luxury condominium building, would devalue the EVO properties resulting in an economic loss to the South park community.	Feb 8, 2013 2:53 PM
6	I think it devalue my property and bring more noise. Should be away from high rises.	Feb 8, 2013 1:58 PM
7	I'm opposed to placement of the rail yard across the street from our home. The proposed rail yard is incompatible with efforts to revivify the residential character of downtown, which was a major factor in our decision to invest in the EVO condo development. It's hard to see how housing and maintaining cable cars will enhance our property values - it is likely to do just the opposite. Please consider an industrial setting instead and continue to enhance "livability" for those of us who live downtown.	Feb 8, 2013 1:28 PM
8	Noise traffic unsightly....this would not be an asset to the neighborhood. I thought the city wanted to rebuild and improve the community, I would not have purchased my home in the Evo building had I known there was this type of facility going in. Kevyn Perry Evo	Feb 8, 2013 7:26 AM
9	South Park has enjoyed considerable growth and improvement in its commercial and residential establishments in recent years. A rail yard between 11th & 12th would stem this growth by limiting parking and discouraging further development adjacent to the project. No business wants to be next to such a rail yard as it does not attract further customers. Residents do not want to be next to the yard because it would create an unastetic gap in development where vagrants would likely loiter. Residents and Staples Center attendees both rely on the parking available between 11th & 12th. The yard should be put in a more industrial area further east where it will not negatively affect the area. The whole point of the rail car project is to make downtown more accessible and to facilitate gentrification. A rail yard in this location would inhibit the fruition of such goals.	Feb 8, 2013 3:41 AM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
10	It would be a major eyesore for the South Park neighborhood.	Feb 7, 2013 9:33 PM
11	I would like to have a resident at the not crowded street.	Feb 7, 2013 8:29 PM
12	The south park area is a position to be the premiere entertainment area of DTLA with LA and the upcoming stadium. A service yard would look completely out of place and detract from future tourist. Please find a new location for the service yard.	Feb 7, 2013 7:45 PM
13	The City should do everything in its power to ensure high-end condos remain just that!! It makes no sense to have a rail yard/cleaning station accross from EVO!!	Feb 7, 2013 7:15 PM
14	Dear Sirs: It is incomprehensible that a rail yard used for maintenance would be placed across the street from some of the most valuable residential real estate in DTLA. Please oppose this measure. Best regards, Kirsten	Feb 7, 2013 6:48 PM
15	The South Park area is just being revitalized and is vulnerable to slipping back into a haven for transients. It is not in the area's best interest to have the rail yard in the neighborhood.	Feb 7, 2013 6:31 PM
16	Thank you	Feb 7, 2013 4:22 PM
17	Dear Officer Doby adn Coucilmember Huizar: As a DTLA resident who believes that proper zoning can be a key part of "bringing Downtown back" I strongly disapprove of a storage for rail cars in the area that is now a parking lot between 11th and 12th streets. Reason: It is across the street from a new resiidential area. There are other locations that are (a) ONLY 1 -3 BLOCKS FROM THIS SITE; and (b) MORE SUITABLE, i.e., places without a new 303 unit residential area. This is NOT "Nimby-ism"; This is SMART URBAN PLANNING. Thank you for investigating a better storage place that will not have the effect of ruining the new development that is starting to make South Park such a great place to live, work, and play. All of us here in South Park are looking forward to watching the concrete steps that you both are going to take to select a better storage area.	Feb 7, 2013 4:18 PM
18	I am concerned about noise and and air pollution if the rail yard is built across from the apartment complex. I don't want to look out my window and view an ugly mess of steel. We disapprove of this project, please take this elsewhere.	Feb 7, 2013 3:46 PM
19	The proposed location for the rail yard is inappropriate to the area and incompatible with the surrounding existing high density residential, retail and office occupancy's.	Feb 7, 2013 3:26 PM
20	The city has gone to great lengths to create the "Beverly Hills" of downtown. Why would you compromise that effort by building a rail yard across from one of the finest new residences in downtown Los Angeles?	Feb 7, 2013 2:47 PM
21	It causes noise and disturbance to the area.	Feb 7, 2013 2:25 PM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
22	It would be a trouble idea to build a rail yard. I though finally city is wise enough to own a wonderful residential building which add so much class to that eara.	Feb 7, 2013 2:01 PM
23	Not the appropriate area for this, and if it happened this would adversely effect the value of the properties on the west side of Grand Avenue between 11th & 12th Streets. Pick an area where there has not yet the type of investment made that there has in Evo and Elleven.	Feb 7, 2013 1:32 PM
24	I don't think this is a fair question. My answer would be I would not opposed to this location for the rail yard IF it can be integrated with the surrounding neighborhood that consists of residential and office buildings-- meaning commercial retail street frontage and activation of all surrounding sidewalks, restrictions on noise and pollution, increased safety, and mixed use development.	Feb 7, 2013 1:29 PM
25	I love the idea of the street car in downtown, but as a property owner in the South Park area, I disapprove of the location of the rail yard at 11th & Grand. The value of the land is too high to dedicate it to that use. Has the idea of building the rail yard beneath a new apartment building on that site been considered? It coud be a good PPP opportunity that would allow for further development and increased density in South Park, while still allowing for street car project.	Feb 7, 2013 1:04 PM
26	Our neighborhood, South Park, is one of the highest-end and fastest growing residential areas in all of Downtown LA. By building a rail yard in the middle of the area, you stand to not only create an eyesore in a restored neighborhood, but jeopardize property values for many of us residents. Please consider alternate locations for this rail yard that are away from residential areas.	Feb 7, 2013 12:58 PM
27	They should never run the rail yard on neither 11th or grand Ave. These two one-way streets usually get jammed whenever there is an event in Staples Center causing a lot of traffic problems already for the neighbors. And this project would make it even WORSE for people living in the area. I DISSAPROVE IT. Thanks.	Feb 7, 2013 12:42 PM
28	Evo is one of the newest and most exepensive residential developments in downtown Los Angeles. Rather than continue the gentrification of downtown, and speficially, Grand Avenue, the city wants to put a streetcar maintenance facility at 12th and Grand. This makes no sense.	Feb 7, 2013 12:38 PM
29	ABSOLUTELY UNACCEPTABLE.	Feb 7, 2013 12:29 PM
30	I love that the streetcar project was approved and that streetcars are coming to DTLA! I would not love to look out my window at a rail yard though. Please consider placing the rail yard in the other proposed available locations. Thank you.	Feb 7, 2013 12:28 PM
31	This will be a blight on one of downtown's best residential areas!	Feb 7, 2013 12:23 PM
32	I am opposed to the streetcar period! We don't need a Disney-esque attraction that only a few will ride. We need to fix	Feb 6, 2013 9:36 AM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
	our streets and sidewalks!!!! This is nothing but a vanity project for Huizar	
33	I will not be able to sleep,	Feb 4, 2013 5:46 AM
34	As a Downtown LA resident, I am extremely opposed to the proposed location of the rail yard for the new streetcar project. I live at the EVO building and the parking lot that is being proposed for the rail yard is conveniently located to my building. Guests always use this lot. As parking is a hassle in any major urban city, the location of the EVO to available parking was one of the reasons why I chose to buy in Downtown LA. I'm sure residents at our neighbor building, Elleven, has guests who utilize the parking lot as well. Another factor in my decision to buy at the EVO was the neighborhood all together...how quiet it is compared to other residential buildings in the Downtown area. While I am not opposed to the streetcar project, I ask that you consider how this would affect current residents in South Park and reconsider the proposed location of the rail yard.	Feb 2, 2013 8:59 PM
35	Property values are of the utmost importance to our area. I feel strongly this would diminish specifically EVO's property value. I would strongly urge against this proposal in a major way.	Feb 2, 2013 11:30 AM
36	Having a rail-car maintenance yard located across the street from a three building housing development which could be argued is the most valuable property and buildings in Southpark, is ridiculous, and shows a complete disregard of the spirit of renewal of Downtown and why I purchsed a home where I did. If the City's intention is to directly depreciate the value of 1500 residents' property values, then please proceed. However, as a property owner who will look directly at the maintenance yard, and someone who does not desire an overnight decrease in my home's value, I absolutely and vehemently object to this location for the maintenance yard.	Feb 2, 2013 6:54 AM
37	I strongly disapprove the location of this railyard. Not only will be detrimentally impact the residential area but will severely reduce parking space in this area	Feb 1, 2013 9:41 PM
38	Isn't there a better location ?? what are other options ? That lot is really used a lot currently ! And if we aren't getting Streetcars on Grand it seems unfair !! Larry Layne 1155 S. Grand	Feb 1, 2013 9:38 PM
39	This is a terrible idea. It is bringing down the value of nearby properties in South Park, damaging the aesthetics of the neighborhood, and should be moved further away from residential areas.	Feb 1, 2013 6:58 PM
40	The storage facility should not be across from a 300 unit residential building. Needs to be in a more industrial area, thanks.	Feb 1, 2013 6:14 PM
41	I would consider it if we had more details such as noise, traffic, etc.	Feb 1, 2013 4:16 PM
42	This is no place for a rail yard. Mr. Huizar, your judgement on many issues is off-base and out of touch with what South	Feb 1, 2013 4:08 PM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
	Park really needs: better shopping and another market such as Whole Foods, Bristol Farms or Gelsons. Why don't you site your rail yard in a more industrial section of town such as the Washington/Long Beach Blvd. corridor?	
43	A railyard across the street from the greenest apartment building in LA? Strongly disapprove.	Feb 1, 2013 3:50 PM
44	The proposed location will devalue the Southpark area.	Feb 1, 2013 1:32 PM
45	The 11th & Grand ave location is a bad idea. A rail yard is better suited In a more industrialized or commercial zone instead of in the middle of a thriving residential neighborhood. This location would also be counter productive to the city's planned Figueroa corridor project which is supposed to beautify 11th street, encourage retail development and increase foot traffic for this and the surrounding area. This is a prime location that should be used for retail, housing or a small park but not for a rail yard. A rail yard would do the exact opposite and inhibit progress and development in South Park.	Feb 1, 2013 1:28 PM
46	Why would anyone think that placing a rail yard in one of the fastest growing areas of DTLA, is a good idea? What are they thinking? Heaven forbid, consider another area with less density.	Feb 1, 2013 1:10 PM
47	As an owner in the EVO building, I object to the construction of the rail yard across the street from the building. I whole-heartedly support the street car project as a way to revitalize sections of downtown, and I applaud the City for embarking on the project. However, while the streetcar project will enhance and improve the sections of downtown where it runs, a rail yard/maintenance and storage facility across the street from EVO will industrialize a segment of downtown that is already on the path to revitalization -- stunting this progress dramatically, if not permanently. EVO residents and other residents in the South Park community have endured years of construction, and minimal services in the area while downtown is developed. Now that South Park is a thriving community, to reverse that progress with an industrial facility directly across the street from our homes would be detrimental - not only to our property values, but to the ongoing growth of the community. The section of Flower street between 11th and 12th is frequented by residents and locals at all hours of the day. For example families walking with their children to Starbucks or to and from LA Live,, residents walking to and from work or walking their dogs in the neighborhood. The street is not the place for an industrial maintenance and storage facility/railyard which will undoubtedly bring noise and potential hazards to the residents.	Feb 1, 2013 1:02 PM
48	Too noisy; also, cause conjestion. The traffic is already bad at that location.	Feb 1, 2013 1:01 PM
49	Too noisy, too much traffic&too inconvenient (i.e. losing lot) for property owners/residents of immediately surrounding properties, especially evo, who are the ones actually paying property taxes for such projects. It's only fair that the city always take into outmost consideration how any such project negatively impacts the quality of living of the actual individuals who are being forced to fund such projects via property taxes, and who actually live near the proposed lot. I mean, why not use a more isolated / unutilized plot of lot?? I have seen plenty of alternatives out there.	Feb 1, 2013 12:37 PM
50	I approve of the rail yard in our neighborhood.. Because what I see from what the city is doing they will make it look really	Feb 1, 2013 12:26 PM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar

	nice , compatible with the neighborhood , and I am sure they will consider the noise becasue we a residential area. I am sure they will make the rail yard look nicer than our building. The flowers are not maintained in the front of our building (as many parts outside and inside out building are not maintained) and many times it smells like pea. So with that how can you ask the residences to disapprove of this location for the rail yard, I have written Jim Doty the same thing, and will again. I think EVO HOA needs to look at how are building is being maintained before asking us not to approve this location for the rail yard.. The city has a proven record of making things look nice and well maintained throughout the city,, and EVO Board Members and Managment cannot maintain and do not keep up our building on the outside and the inside.	
51	The noise level would make me want to move out of this area.	Feb 1, 2013 12:20 PM
52	The location of this streetcar will be detrimental to the property value and quality of living in the South Park area. South Park is vital to the growth and recent "boom" of downtown, and many of the residents of EVO, LUMA and ELLEVEN feel the proposed location of the streetcar would not be attractive to future and current residents of these buildings.	Feb 1, 2013 12:19 PM
53	There is a much better project being proposaed for that exact same spot. It is a high end retail center & parking structure that would fill in the entire block.	Feb 1, 2013 12:11 PM
54	This area is short on parking. The city has already increased parking meter rates on this street and reduced the periods that parking is free. Eliminating the pay parking lot and replacing it with a rail yard is a poor idea. This is a residential area. Put the rail yard under the freeway a few blocks away	Feb 1, 2013 11:58 AM
55	My initial reaction is ---a rail yard? Really? Isn't South Park a residential area? There are areas better suited for this use and also unoccupied farther east and south of EVO.	Feb 1, 2013 11:54 AM
56	I hope that the prime real estate at 12th/Grand will serve the South Park community in a more visionary way rather than using it as a rail yard. There are certainly other places not so close to LA Live and its businesses that could meet the need of the street car. Thank you for your sound consideration of the future of this new heart and soul of LA.	Feb 1, 2013 11:47 AM
57	We use that parking lot for our family and friends. It would not be much of a residential neighborhood without it.	Feb 1, 2013 11:39 AM
58	There are multiple other better places to do this, not in front of two very large residential buildings . Will drive real estate down as it will not be desirable and the purpose of streetcar is to drive them up and to beautify the city. Quite the opposite effect . There are plenty of better lots, along grand, olive, hill and around broadway that are so much better suited for this. Pick any!	Feb 1, 2013 11:29 AM
59	Parking, less noise, and less disturbances are valuable commodities for residences in Downtown LA. I can't imagine how a rail yard would benefit my residence at all.	Feb 1, 2013 10:57 AM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
60	Yard needs to go to an industrial area not in the backyard of residential high rises.	Feb 1, 2013 10:49 AM
61	Ideally the rail yard would be located in an area away from residentail development. The location on Grand Ave is an area that has a lot of potential for future development and can be become a very walkable neighborhood. There is currently a project planned for the corner of 12th and Grand. If a rail yard is added that could really impact the growth of this neighborhood.	Feb 1, 2013 10:44 AM
62	This would not be a good use of the parking lot. It is right in the middle of residences and planned residences and would do nothing for the neighborhood. If feasible, they should be under the freeway near where the buses are parked.	Feb 1, 2013 10:34 AM
63	This creates an immediate eye sore for evo residents and is negative for property values. South Park is reserved to be the nicer, quieter, and more neighborhood-friendly party of downtown, not some industral rail yard station. This sort of thing should not be built in front of a luxury condomonium with units being sold for over $1mn.	Feb 1, 2013 10:33 AM
64	This is an important parking area for residents. Also the noise possibilities are inappropriate across the street from a residential building.	Feb 1, 2013 10:31 AM
65	I would not have voted for the streetcar project if I thought there was a good probability that the rail yard would be built on Grand Ave between 11th and 12th streets, across the street from my home. Having a rail yard across my home would lower the quality of life and my property value, which would negatively impact the property taxes collected by the city. The rail yard should be built in a more commercial location, not the residential location of South Park. Thank you.	Feb 1, 2013 10:28 AM
66	Given LA city's financial situation this whole project is crazy	Feb 1, 2013 10:13 AM
67	I strongly disagree with the location for the rail yard - A maintenance facility so close to my residence will create noise disturbances and lower property values - it will have a large impact - A simple map doesn't give enough detail to understand what work and noise levels will be taking place at the rail yard - why is there only one option being presented ? Please present alternative ideas and locations for the rail yard - as well we will need to see a very detailed study and presentation on the design and sound impact from the current choice.	Feb 1, 2013 10:05 AM
68	This would NOT be a good location for a rail yard as it borders high density residences and high rise office building (AT&T). A much better choice would be near Union Station or further east nearer Los Angeles street. Should this site be selected, will advocate vigorously for the impeachment and/or defeat of Councilmember Huizar who up until now I have supported.	Feb 1, 2013 10:01 AM
69	I disapprove most strongly with a plan to place a rail yard on Grand Ave. between 11th and 12th Streets. This area is a residential area with thousands of people living close by, and this is increasing fast (e.g., with the new apartment complex construction on the SE corner of Grand and 12th -- in the 3-acre lot recently acquired by Sonny Astani where construction	Feb 1, 2013 10:00 AM

Q2. Please comment. These will be fowarded to Jim Doty and Councilmember Huizar		
	is about to start). No way should a rail yard be placed here. Safety. Noise. We should and will initiate a lawsuit and use every legal and political means possible to stop this. Peter Carnevale	
70	This will not only look bad but reduce property values	Feb 1, 2013 9:57 AM
71	This is an upscale residential area. It does seem to make sense to lower the values by having storage and maintenance for the streetcar done here. Thank you.	Feb 1, 2013 9:55 AM
72	Locating a service yard across the street from a luxury condo will affect the property value greatly. As a homeowner residing at EVO - I strongly oppose the location of the service yard.	Feb 1, 2013 9:54 AM
73	This is a residential not commercial area. Thank you.	Feb 1, 2013 9:53 AM
74	This would be a serious blow to property values in a neighborhood with lots of homeowners already upside down on their mortagages. What can the city be thinking!	Feb 1, 2013 9:52 AM
75	This location would be very bad for the neighborhood.	Feb 1, 2013 9:48 AM

Los Angeles Streetcar Maintenance Yard Locations

Andres.Curtolo@sf.frb.org <Andres.Curtolo@sf.frb.org> Mon, Feb 11, 2013 at 5:04 PM
To: jim.doty@lacity.org

Dear Mr. Doty,

I am a member of the Elleven HOA Board of Directors, currently serving as the President, but have also served in other roles over the past 4 years. I am writing to you regarding the Los Angeles Streetcar project. I am personally a very big proponent of the endeavor and am glad to see the city continue to focus on the community with projects such as these. For individuals like myself who are proud to live in Los Angeles, we also like to note that our representatives are supportive of our concerns when they arise. It is for this reason I am contacting you.

Although this letter is coming from me personally, I would like for you to know that my fellow board members and I have discussed this at length with homeowners, and we are very unhappy with the city's proposal to place maintenance yards on Grand Avenue between 11th and 12th streets and the corner of 11th and Olive. I would also note that I have discussed this with Luma's HOA president (corner of Hope & 11th) and he too has expressed dissatisfaction. South Park is considered an up and coming section of the broader community, particularly given the city's preeminent attraction, L.A. Live. Our community continues to flourish primarily because home-buyers view South Park as a perfect place to call home. I believe there is great risk in this proposal as it will undoubtedly result in safety concerns for families with small children and pets, creating a greater noise and pollution problem, and ultimately devalue our properties.

I would also like to share with you that I attended a couple of the events hosted by city officials promoting the streetcar. Again, I was very supportive. However, this support came with the understanding that the maintenance yards would be nowhere near our building. In numerous conversations with various officials I brought up the maintenance yards. Their responses always pointed to the other two locations being proposed, and never suggested the ones on Grand and Olive, even after specifically questioning them regarding these lots. I find this very disappointing, and frankly, a bit disingenuous, bordering on dishonest.

I respectfully request that you share our community's concern with city officials and do everything you can to find an alternate location that would alleviate us of our concern.

Thank you for your time and I welcome your comments.

Sincerely,

Andres Curtolo

Andres Curtolo
Sr. Manager, Human Resources
Leave Management and Employee Relations
Federal Reserve Bank of San Francisco
950 South Grand Avenue
Los Angeles, CA 90015

Tel.: 213.683.2437
Fax.: 415.977-4120
Email: Andres.Curtolo@sf.frb.org

Fw: Reminder - Streetcar Comments Needed 2/1

Andre D. Giles, J.D. <andregiles@fusionmultiplex.com> Fri, Feb 1, 2013 at 1:23 PM
Reply-To: "Andre D. Giles, J.D." <andregiles@fusionmultiplex.com>
To: Jim Doty <jim.doty@lacity.org>
Cc: Ginny Brideau <gbrideau@therobertgroup.com>, Virgil Hollins <vhollins@fusionmultiplex.com>, Admond Fong <afong@fusionmultiplex.com>

Mr. Doty,

Good morning. We're working with Mr. Joseph Hellen (Property Owner) in the hopes of reactivating the **Roxie, Cameo & Arcade Theatres** (500 block of South Broadway) for entertainment in the very near future, and so we're greatly interested in the ultimate success of the Streetcar program and appreciate this opportunity for comment. **We just have a few questions regarding this initial EIR/study and presentation...**

Given that the Streetcar, while on South Broadway, will travel in the existing, "southbound" lanes of traffic, we're interested in the future placement of the Streetcar stop on the 500 block of South Broadway. Thus, would the stop be "centered", mid-block, or will it be placed at the end of the block as some of the bus stops are? For our design and planning purposes, we're trying to establish how or where our patrons will cross the street once exiting the Streetcar.

Additionally, this question may be premature, but will there be advertising opportunities for businesses and even, "incentives" for "local" businesses to advertise on the Streetcar? Notwithstanding the existing local ban, will the Streetcar feature digital signage for advertisers?

Lastly, what are or where could we find data on (if any) "safety issues" surrounding the operation of the Streetcar? Does such a system tend to cause more traffic accidents? Are there many individual, physical injuries caused directly by the Streetcar in other cities? We intend to cater to the Downtown, "elderly and aging" community, thus, any and all detail regarding the accident experience for such a system would be greatly appreciated.

Thank you again,

-Andre D. Giles, JD

Andre D. Giles, J.D. | Partner & Chief Compliance Officer
Fusion Multiplex, LLC
P.O. Box 25473 | Los Angeles, CA 90025
Tel: 310.623.0423 | www.fusionmultiplex.com

From:	Jim Doty
To:	Ara Kasparian; Franco, Paulette; James Lefton; Chivaratanond, Susan
Subject:	Fwd: Street Car EIR scoping
Date:	Tuesday, January 22, 2013 4:22:48 PM

---------- Forwarded message ----------
From: **Ann Gray** <agadvise@gmail.com>
Date: Tue, Jan 22, 2013 at 4:02 PM
Subject: Street Car EIR scoping
To: jim.doty@lacity.org
Cc: Sel Kardan <skardan@colburnschool.edu>, Seth Weintraub <sweintraub@colburnschool.edu>, Sandy Silver <ssilver@colburnschool.edu>, Steve Matt <sfmatt@mattconstruction.com>

Jim

I represent the Colburn School which occupies a parcel on Bunker Hill bounded by Olive, 2nd, Grand and GTK Way. The school is an internationally respected music conservatory and performance venue much like Julliard in the east. In addition, our facility is used for recording meaning that sound and vibration is an issue not just to the human ear but also to highly tuned recording equipment. We have been working diligently for the past year and a half with MTA structuring mitigations to eliminate the noise and ground borne vibration the will occur as a result of the Regional Connector tunnel planned along 2nd.

We are concerned that noise and vibration of the street car could also impact our facility especially when compounded by that generated by the Regional Connector. As part of your EIR we will expect a detailed study with respect to our operation including acoustic engineering analysis proving that future noise and vibration will not affect our operation in any way.

If Colburn School cannot provide an acoustically excellent environment we are out of business.

Thank you.

Ann Gray

--

Ann E. Gray, FRICS, FAIA
GRAY Real Estate Advisors
CA Broker #01897744
512 E. Wilson, Suite 213
Glendale CA 91206
818.424.3136

Jim Doty <jim.doty@lacity.org>

Streetcar Comments

1 message

Christine Hotchkin <chotchkin@unitedstreetcar.com> Mon, Feb 4, 2013 at 12:54 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Mr. Doty,

We have been closely following LA's Streetcar progress and are excited with your progression. In reviewing the Notice of Preparation of a Draft Environmental Impact Report/Environmental Assessment, we noticed that on page two it calls out for the TPSS (traction power substations) and overhead contact system to be high voltage of approximately 600 VDC. Is it your intent to remain at 600 VDC, or will you also be considering 750 VDC? Currently all the modern streetcar systems operating in the US are 750 VDC, so the difference is a significant item of note to United Streetcar, the first US manufacturer of modern streetcars in over 60-years.

Warm Regards,

Christine Hotchkin

UNITED STREETCAR LLC

OREGON IRON WORKS, INC

chotchkin@unitedstreetcar.com

www.unitedstreetcar.com

tel: (503) 653-6300

cell: (503) 830-9685

fax: (503) 653-5870

Comments regarding "Restoration of Historic Streetcar in DTLA"

1 message

General Jeff <issuesandsolutions@yahoo.com> Fri, Feb 1, 2013 at 3:04 PM
Reply-To: General Jeff <issuesandsolutions@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

February 1, 2013

Mr. Doty,

Although I shared my comments during the public comment portion of last week's public meeting at the Caltrans building, I was also asked to forward them to you;

Of the three locations designated as potential sites for the Streetcar maintenance yard, regardless of whichever one is actually selected, there is concern regarding the possible high levels of noise so close to residential buildings. It was intimated to me during said meeting, that at this time it has not yet been determined if the majority of the work in the maintenance yard will occur during the day or at night. Either way it would be a disturbance to the nearby residents.

I truly believe that noise mitigation efforts should be applied in this regard to properly address these concerns.

Thank you,

General Jeff
Skid Row community activist-
ISSUES AND SOLUTIONS (2007-present)

(3-Term) Resident Director- Central City East/ Skid Row
Board of Directors
Downtown Los Angeles Neighborhood Council (2008-Present)
Former VP, Outreach and Communications (2011-2012)

Co-Chair- Skid Row Community Advisory Board for the
Department of Mental Health (2012-2013)

02/11/2013

City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213

Re: Public comment on the scope and content of the LA Streetcar EIR/EA

Dear Mr. Doty,

I am writing this letter on behalf of KRITZINGER+RAO INC, Urban Planners & Architects, to convey our comments on the scope and content of the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA, Notice of Preparation. We are located in Downtown Los Angeles and therefore share a great interest in the proceedings both as residents as well as professionals.

We believe that the title of the project "Restoration of the Historic Streetcar" is a misnomer. The envisioned streetcar is completely modern and restoration of the historic streetcar is intended. The reason I would like to bring this up is to point out that if no historic restoration is intended, the proposal should be looking at other alternatives which might be cheaper, more efficient, quieter, consume less energy, and have lesser impact on traffic and the environment. We would like to submit to you that one such option is the Personal Rapid Transit (PRT) system. In this matter, I believe that the scope of the EIR only explores alternative routes and does not explore alternative transit technologies. We suggest that alternatives for transit technology such as the PRT be included in the scope of the EIR.

I am attaching relevant parts of a preliminary study "PRT: The Streetcar of the future" that we have done to evaluate its application as a *last-mile* transit option for Los Angeles. While the study includes the entire downtown LA, the scope of our comments can also be applied to the Project Study Area as defined in the EIR. Please treat the document as a part of our detailed comments.

KRITZINGER+RAO
414 Boyd Street, Suite B, Los Angeles, California 90013 USA
Tel: 213.613.1922 Fax: 213.613.1926
www.kritzinger-rao.com

Comments
Page 2

Some of the benefits of Personal Rapid Transit technology are:

- It is **50% cheaper** than the Streetcar system that is proposed. In other words, a PRT system will **deliver twice the coverage for the same price**!
- It is **virtually silent (35-45 dBA)** where as Streetcars can be an annoying 77dBA!
- **It consumes 45% less power per km per passenger than a Streetcar** (0.55 MJ/km/passenger for PRT as compared to 0.99 MJ/km/passenger for Streetcar)
- Unlike Streetcars, PRTs are elevated and **cause little disruption to traffic during operations as well as construction**
- PRTs are point-to-point transit system and hence result in **far greater efficiency in moving people** (studies show that given all things equal, PRT can move 5 to 7 times more people per day than Streetcars)
- PRTs have the **unique flexibility** of having **stations integrated into new and old buildings** alike due to their design loading requirements (41 lbs/sf) which are well below the level required for floor live load in building codes.

I trust that our suggestions will be included as part of the EIR scope. We are looking forward to be partners in shaping and transforming *our* Downtown to a vibrant and sustainable future.

Sincerely,

Srinivas M. Rao, AIA, LEED AP
Principal

KRITZINGER+RAO
414 Boyd Street, Suite B, Los Angeles, California 90013 USA
Tel: 213.613.1922 Fax: 213.613.1926
www.kritzinger-rao.com

PRT: The Streetcar of the future

Part of comments on the scope and content of the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA, Notice of Preparation

February 11, 2013

K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

www.kritzinger-rao.com

Contents

Introduction

PRT & Streetcar Comparison

LA Downtown Nodes

Proposed Streetcar for $125 million

PRT Alternative for $125 million

PRT Scalability - Future Phase

Streetcar Road Sections

PRT Road Sections

Downtown Historic Streetcar Routes

Downtown Transit

Downtown Population Growth

K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

www.kritzinger-rao.com

Introduction

"The Ultra personal rapid transit (PRT) is a new and innovative on-demand system for developed or urban environments.
Using small, driverless electric vehicles that run on guideways, the lightweight and flexible nature of the system enables it to be retrofitted into a broad range of environments and provide transportation that is environmentally friendly and operationally efficient.

Conventional forms of public transit require passengers to collect in groups, wait until a large vehicle with a fixed schedule arrives, and travel on a predetermined route stopping for additional passengers on the way. In contrast, ULTra offers personal transport with no waiting, taking passengers non-stop to their chosen destination." - ULTra Global PRT

LA Streetcar: The scale of the opportunity

The currently proposed streetcar is an exciting idea for the transformation of downtown LA. In scoping this project we have an opportunity to make it a catalyzing element of a grander strategy that will make Los Angeles competitive in the global market. Los Angeles requires bold and visionary public policy supported by strategically crafted infrastructure that prepares LA for the future. As currently planned, can the Streetcar be that catalyst?

In the Streetcar, we have an opportunity to reconnect the various nodes of activity that until the 1950s were well connected. This will result in a process of rejuvenation of the "lesser served" areas of downtown. Unfortunately, the currently proposed streetcar will operate in an area that is already well served (Ladot DASH). The route will do little to connect areas of downtown such as the Fashion & Arts Districts which can, and in the latter's case, is already becoming LA's own version of San Francisco's "South of Market" (See Downtown LA Populations Trends). Critical existing and future nodes such as USC, USC Medical Campus, Dodger Stadium, Piggyback yard redevelopment, and LA City Market redevelopment will remain disconnected. <u>The scalability of the streetcar in such low to medium density areas in the future may be limited due to its high cost and funding mechanism</u>. As currently envisioned, the Streetcar will be a missed opportunity for a balanced and equitable transformation of Downtown LA.

Personal Rapid Transit: An alternative technology for the Streetcar

Los Angeles has the opportunity to be one of the first cities to use Personal Rapid Transit Systems (PRT) as a solution to serve the last mile. This will transform Los Angeles from a car capital of the world to the transit capital of the world. PRT application is not only cost effective, cleaner and more efficient but can be installed quickly in a variety of scenarios such as:

a. A comprehensive system to connect all nodes of current and future activity in downtown LA. It can be the Streetcar of the future.
b. As a technique to expand the area of TOD centers
c. Serve LAX and other airports
d. To better serve tourist areas such as Hollywood.

K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

www.kritzinger-rao.com

Images Source: www.ultraglobalprt.com

The elevated or at-grade Stations could integrated with existing parking lots or buildings.

Elevated carriageway is light weight and easy to construct using off-site prefabricated elements.

The 'PRT pods' carry commuters directly to their destinations without intermittent stops.

Some of the benefits of Personal Rapid Transit technology are:

- It can be **50% cheaper** than the Streetcar system that is proposed. In other words, a PRT system will **deliver twice the coverage for the same price**!
- It is **virtually silent (35-45 dBA)** where as Streetcars can be an annoying 77dBA!
- **It consumes 45% less power per km per passenger than a Streetcar** (0.55 MJ/km/passenger for PRT as compared to 0.99 MJ/km/passenger for Streetcar)
- Unlike Streetcars, PRTs are elevated and **cause little disruption to traffic during operations as well as construction**
- PRTs are point-to-point transit system and hence result in **far greater efficiency in moving people** (studies show that given all things equal, PRT can move 5 to 7 times more people per day than Streetcars)
- PRTs have the **unique flexibility** of having **stations integrated into new and old buildings** alike due to their design loading requirements (41 lbs/sf) which are well below the level required for floor live load in building codes.
- PRTs are very scalable: **they can be expanded to low/medium density areas in the future due to their low cost which can open opportunities for redevelopment in those areas**. The current funding mechanism for the streetcar is made possible through a tax measure that will enjoy the benefit of relatively dense nodes such as LA Live and Broadway Street – a benefit that will be hard to replicate in future phases.
- **PRTs can make downtown LA development friendly** again: since PRTs can effectively and comprehensively cater to the last mile, demand for parking (which has been one of the most prohibitive factors for redevelopment) will go down.

K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

www.kritzinger-rao.com

Images Source: www.ultraglobalprt.com

PRT/Streetcar Comparison

	Personal Rapid Transit	Los Angeles Streetcar
Cost	The estimated construction costs (including vehicle, guideway, station, and control system) are $11 to $24 million per mile [1]	The estimated construction costs (including vehicle purchase) are roughly $36 million per mile [2] ($125million for 3.5 miles)
Noise	PRT vehicles are virtually silent during operation, at 32ft 14mph ~35dBA [1] 23mph~ 45dBA [1]	Portland Streetcar on site test by ATS Consulting, at 50ft 20mph ~76.7dBA [3]
Power Consumption	PRT pods are electrically powered, using batteries that are recharged whenever the vehicle is parked at a station. The batteries provide 63 miles maximum range. [1] **Power Consumption** per passenger is 0.55 mj /km [1]	Streetcars are electrically powered by two or three 1MW DC traction substations and a contact wire with parallel feeders to deliver power to the vehicles and control the voltage drop in the lines. [4] **Power Consumption** per passenger is 0.99 mj /km [5]
Pollution	Zero on site emission (lower source energy[8])	Zero on site emission (higher source energy[8])
Installation	**Infrastructure:** Lightweight and quick to set up, individual pieces can be fabricated off-site and transported to be assembled on-site, minimizing assembly time and cost. PRT system has very low load requirement (41 lbs/ft^2) can easily integrate with existing building structure. [1] **Vehicle:** constructed of a steel frame and ABS panel body using off-the-shelf automotive components	**Infrastructure:** Lane closures for rail construction will be necessary, a trench 8 feet wide and one foot deep needs to be removed from the roadway. Typically required one week for every 200 feet of new track construction. **Vehicle:** Manufacture by two Czech companies, Škoda and Inekon, and United Streetcar, LLC each vehicle cost $3.5million [6]
Traffic Impact	PRT system can be constructed elevated from street level with a 2.1m wide track and 2m x 2m column footing span 36m apart. PRT system has minimal visual and traffic impact.	Streetcar shares roadway with cars, trucks, buses, and other motorized vehicles ,has a greater impact on traffic.
Efficiency	PRT system offering personal transport with no waiting time and non-stop route to chosen destination, the PRT system will automatically select the fastest to the chosen destination. **Amritsar PRT system 2014, India** [1] 4.8 miles 200 pods (4 Adults +2 Children) carries up to 100,000 passengers per day each PRT pod carries up to 500 passengers per day *[With 150 PRT pods equivalent to 11 Streetcars passenger capacity 7can be as high as 5,000 passengers per day!]*	Conventional forms of public transit require passengers ro collect in groups, wait until a large vehicle with a fixed schedule arrives and travel on a predetermined route, stopping for additional passengers on the way. **Portland Streetcar** [7] 9.35 miles 11 Streetcars (31seats + 50 standing passengers = 81 maximum capacity) [6] carries 11,000 passenger per day [6]

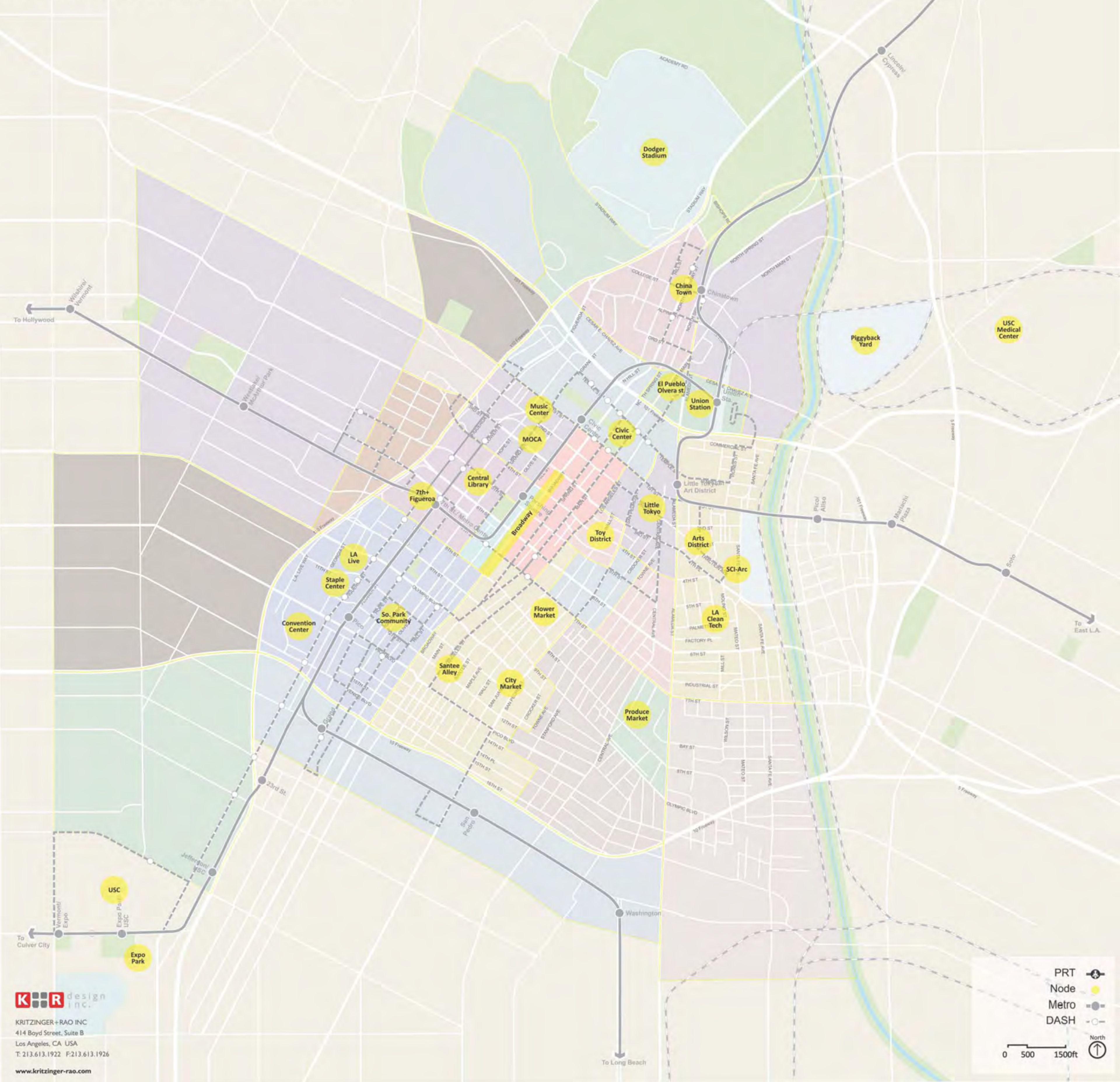
References:
[1] Ultra Global PRT <http://www.ultraglobalprt.com>
[2] LA Streetcar Inc. <http://www.streetcar.la/funding> & LA Metro <http://www.metro.net/projects/historic-streetcar-service/>
[3] ATS Consulting - Noise, Vibration and EMI from Modern Streetcars
[4] United Streetcar, LLC
[5] ŠKODA TRANSPORTATION s.r.o. - Škoda ASTRA 10T tram <http://www.skoda.cz/cs>
[6] Portland Bureau of Transportation <http://www.portlandoregon.gov/transportation>
[7] Portland Streetcar <http://www.portlandstreetcar.org>
[8] According to US EPA, Source Energy represents the total amount of raw fuel that is required to operate the building (or a system in this case). It incorporates all transmission, delivery, and production losses, thereby enabling a complete assessment of energy efficiency of the building (system).

K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

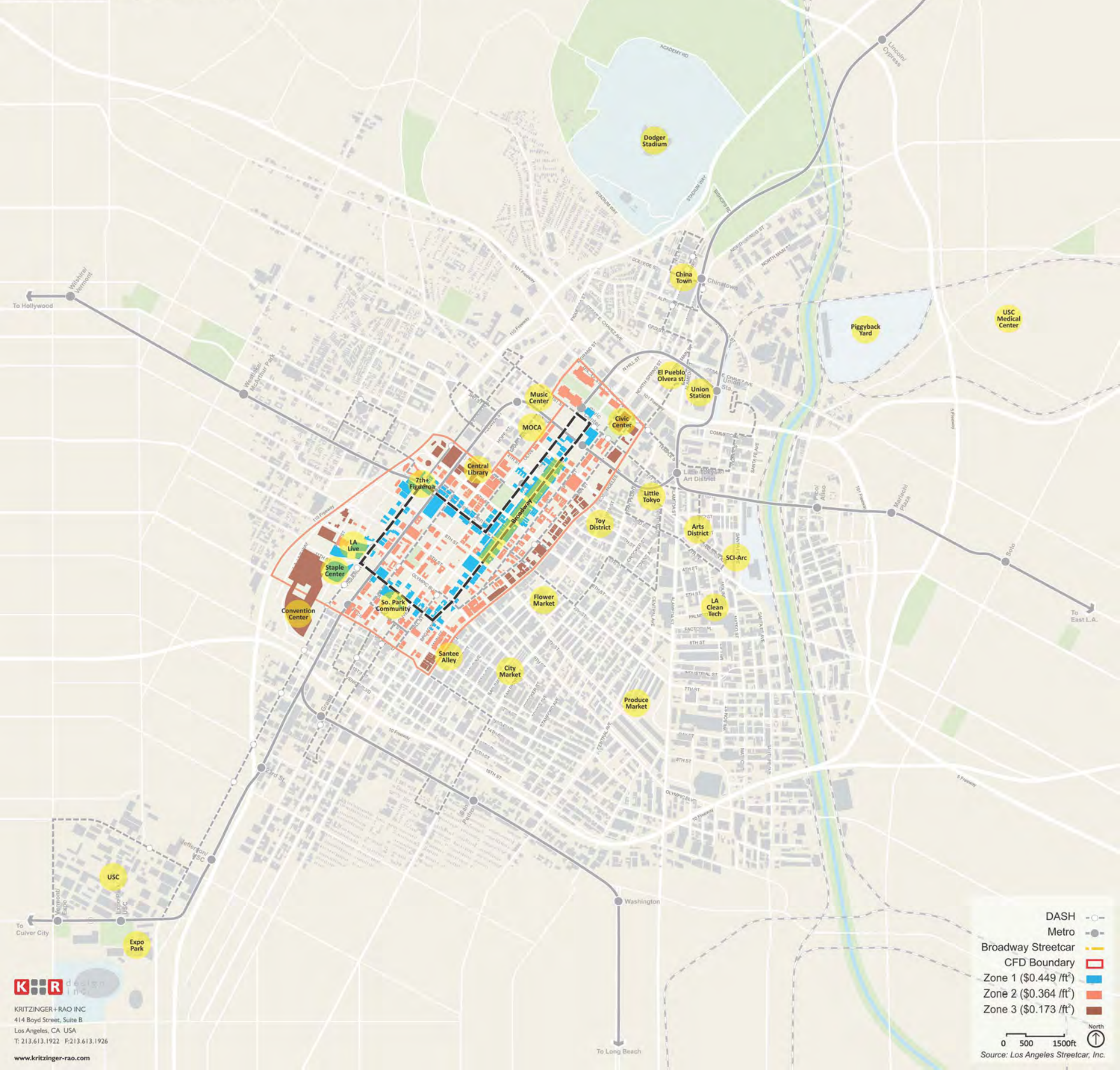
www.kritzinger-rao.com

Downtown Los Angeles Nodes (Existing & Future)



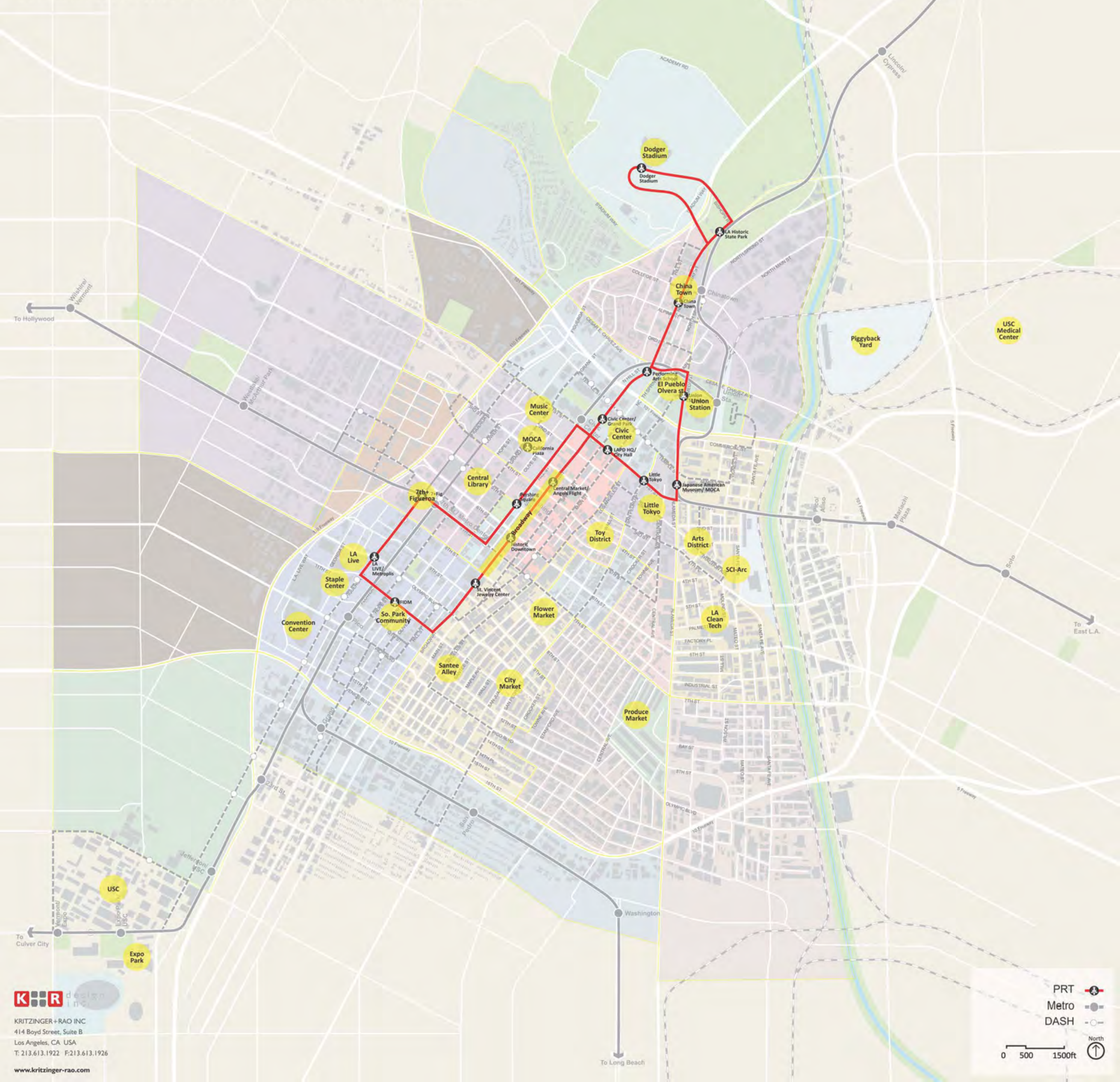
Downtown Los Angeles Streetcar 2015 (4 Miles Route for $125 Million)

Streetcar Community Facilities District (CFD)

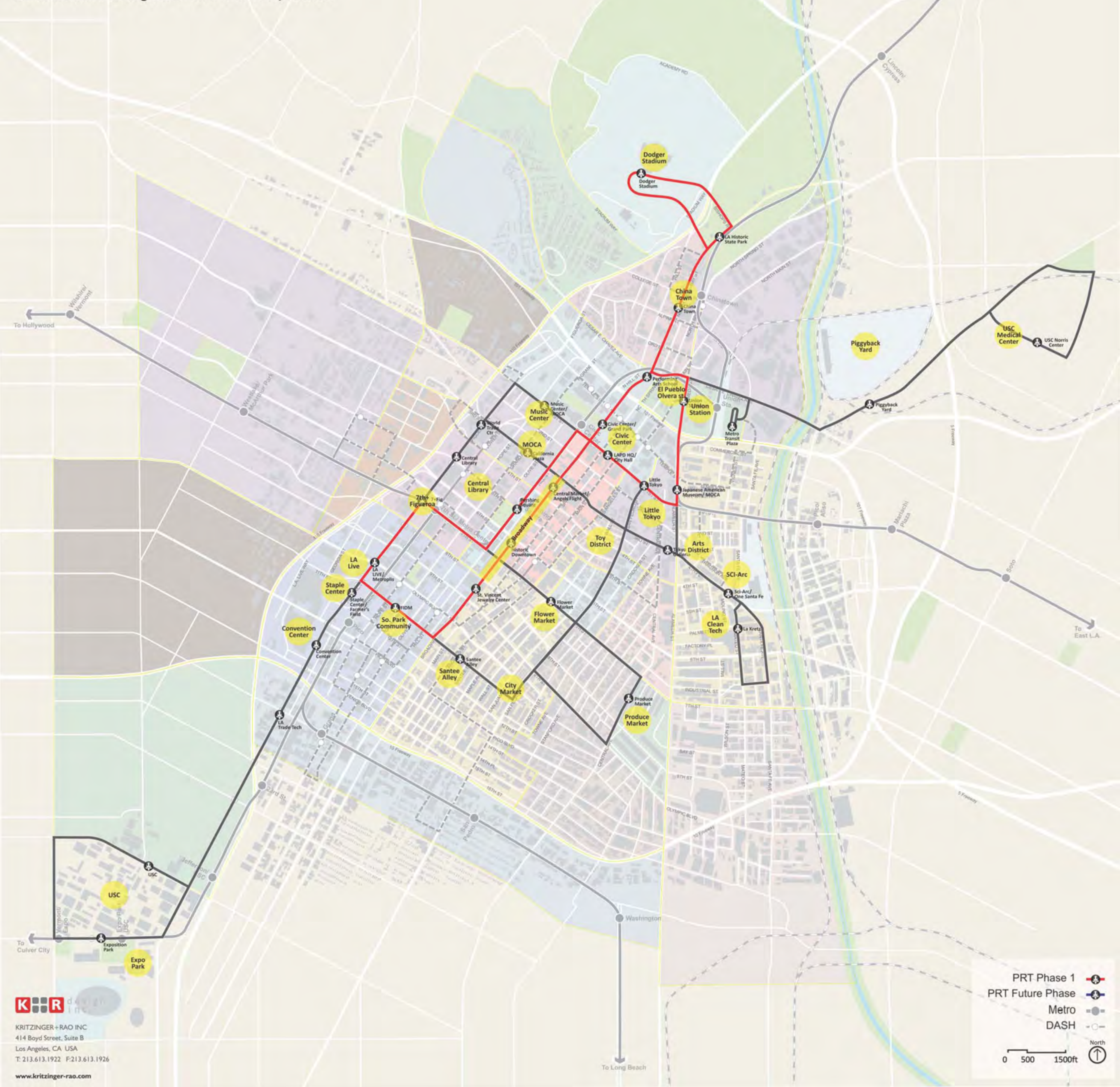


KHR design inc
KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926
www.kritzinger-rao.com

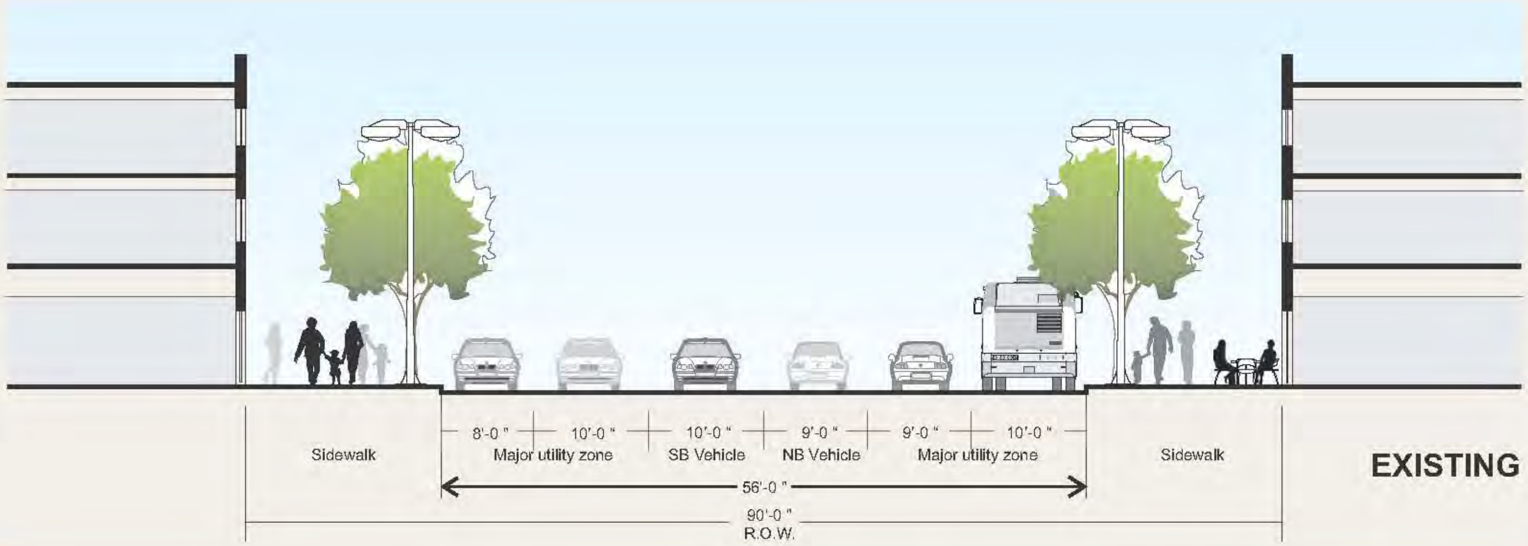
Downtown Los Angeles PRT Routes (7 Miles Routes for $125 Million)



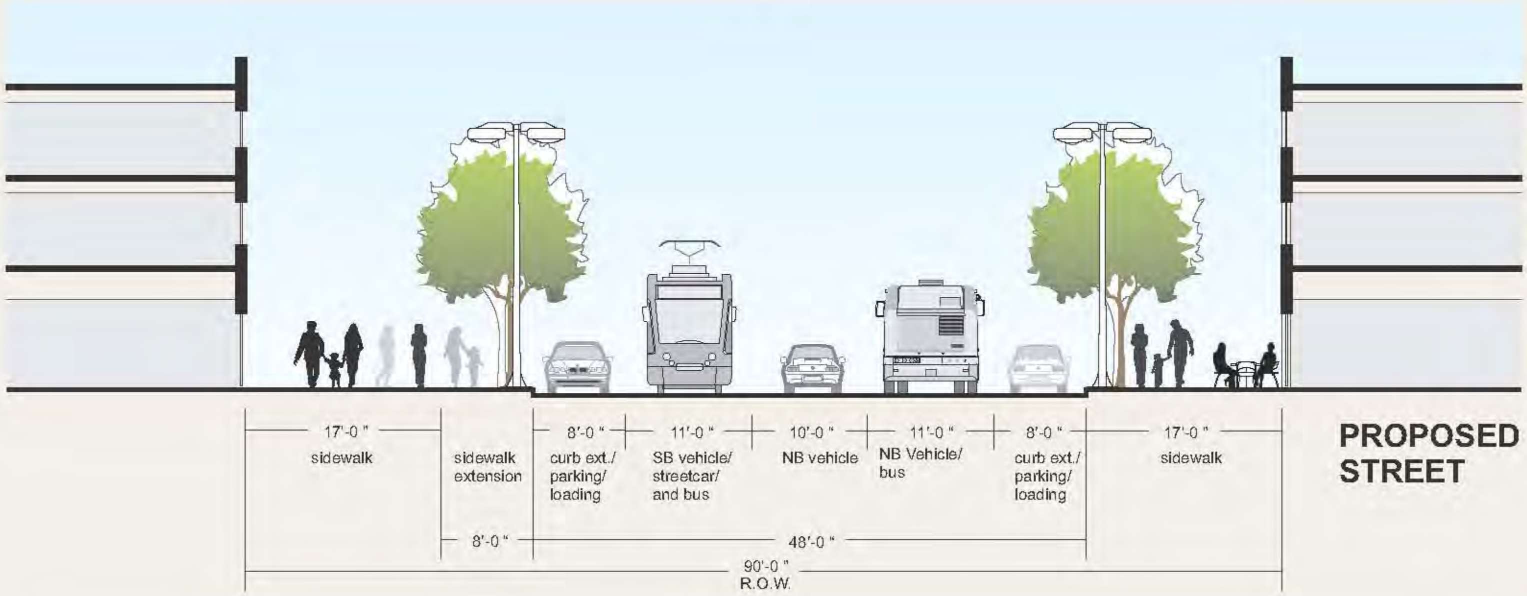
Downtown Los Angeles PRT Future Expansion



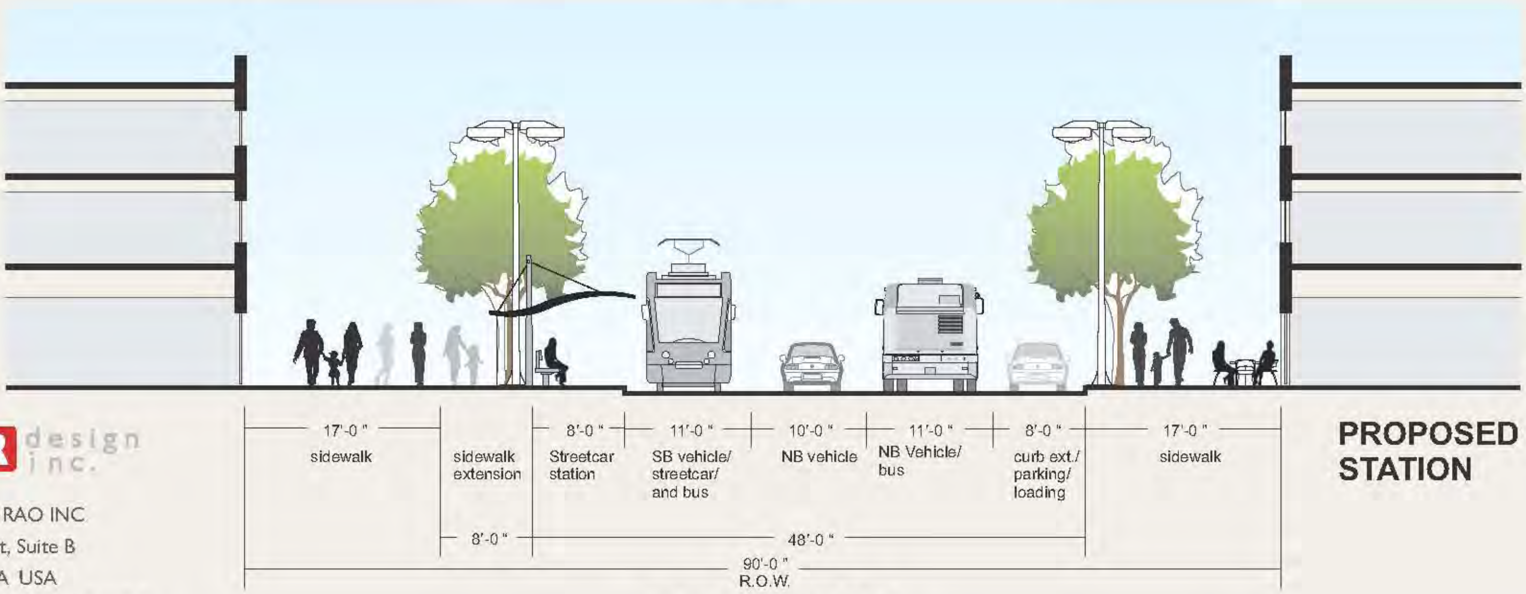
Streetcar Scenario



EXISTING



PROPOSED STREET



PROPOSED STATION

BROADWAY

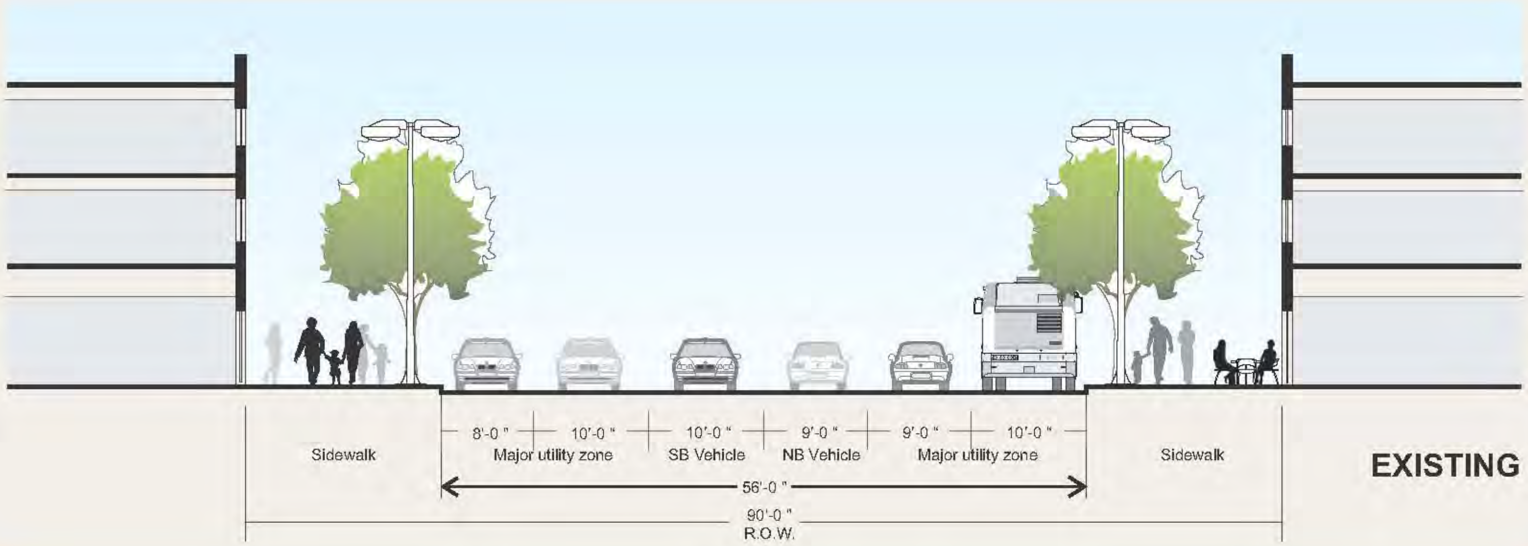
K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

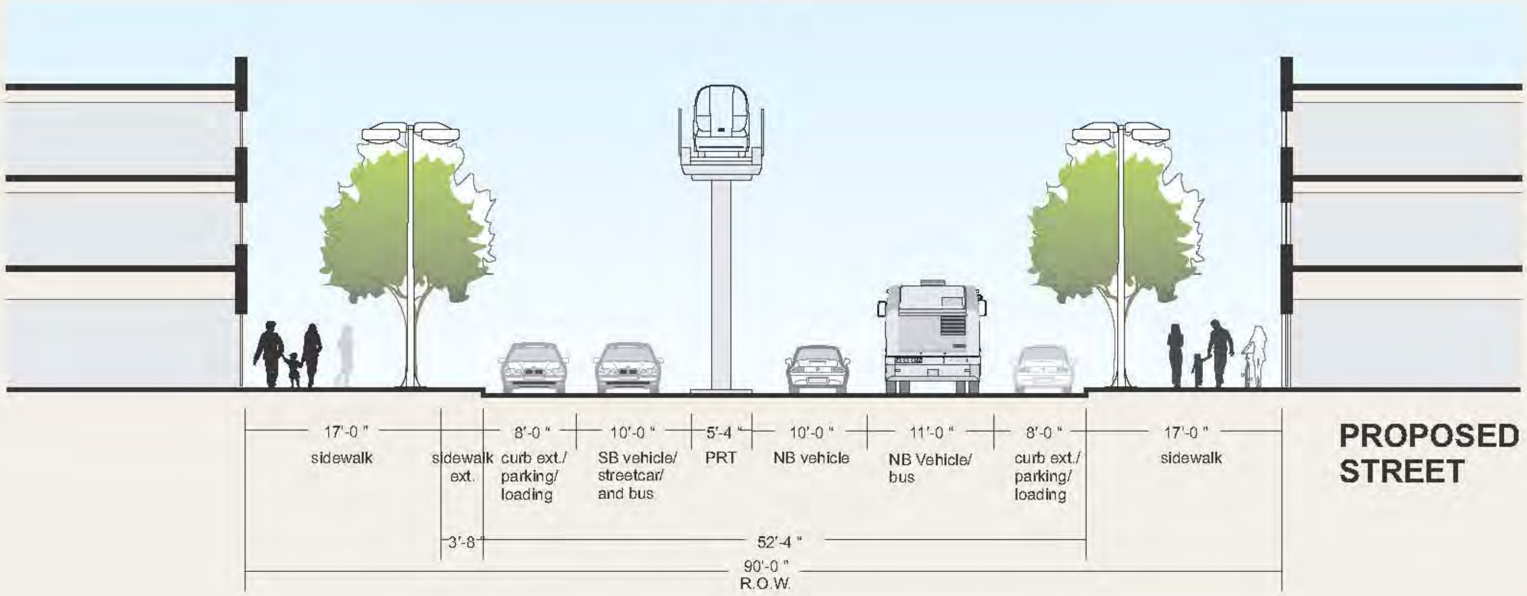
www.kritzinger-rao.com

0 5 15ft

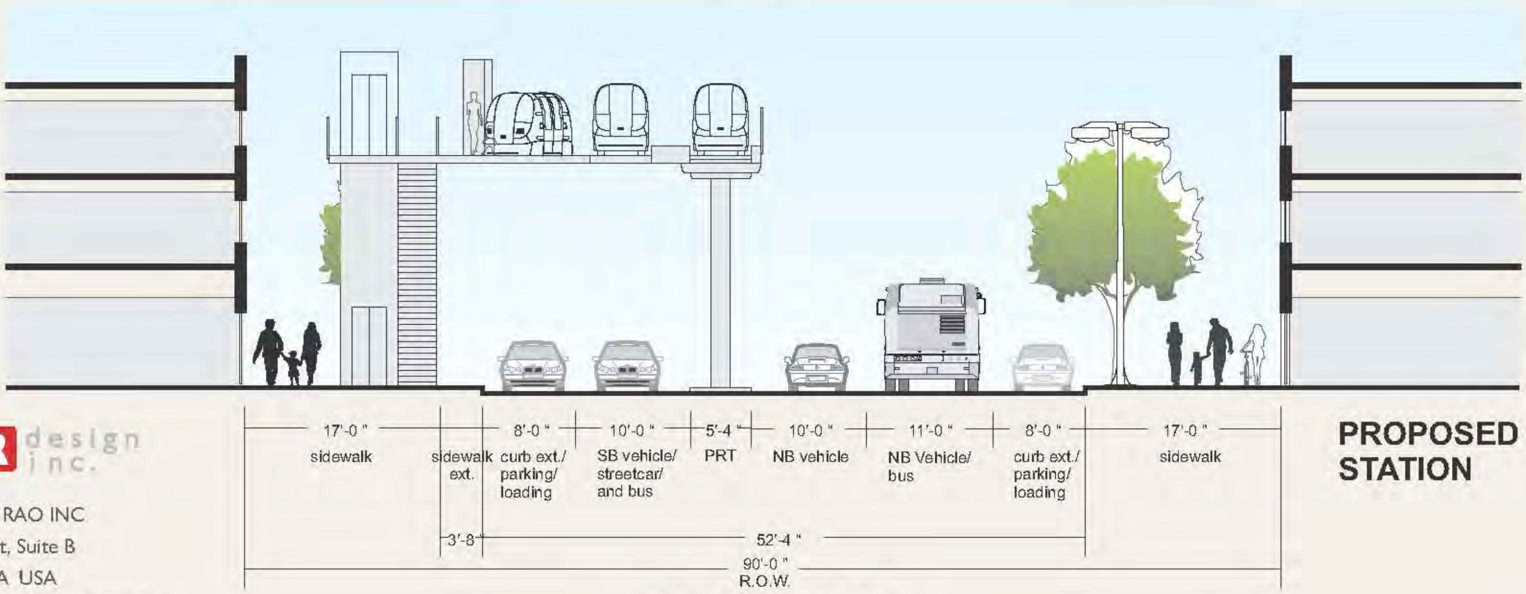
PRT Scenario



EXISTING



PROPOSED STREET



PROPOSED STATION

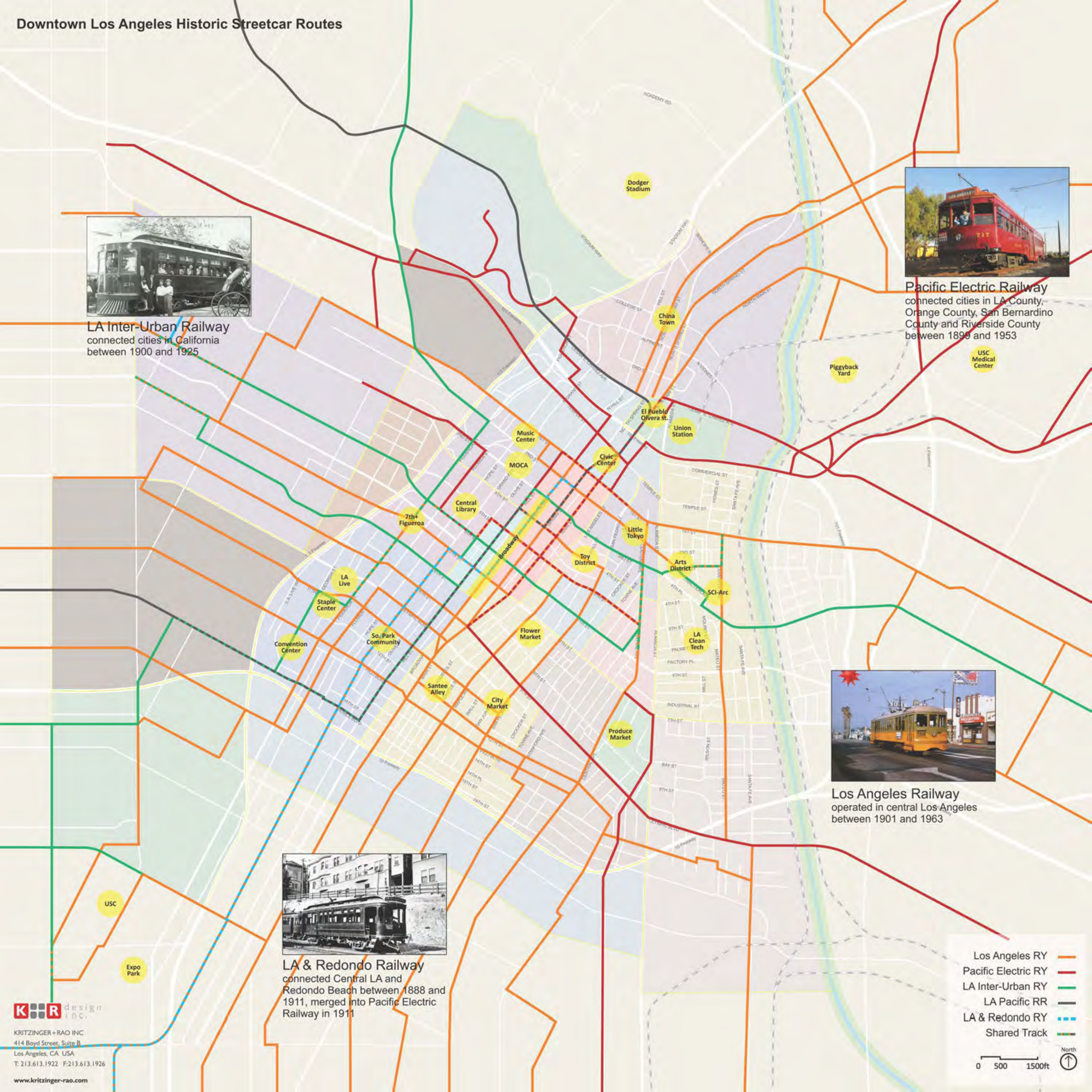
BROADWAY

0 5 15ft

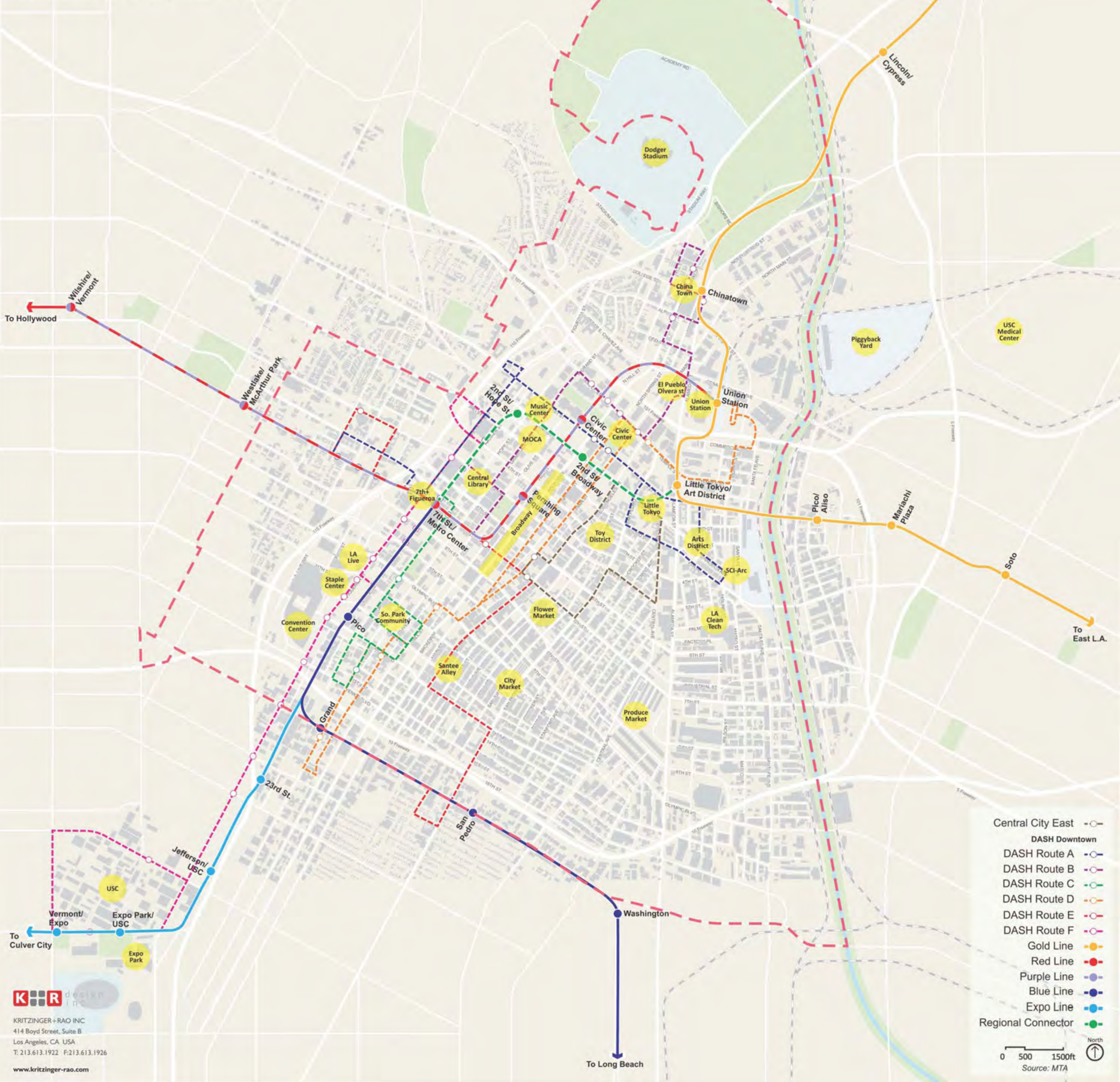
K R design inc.

KRITZINGER+RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926

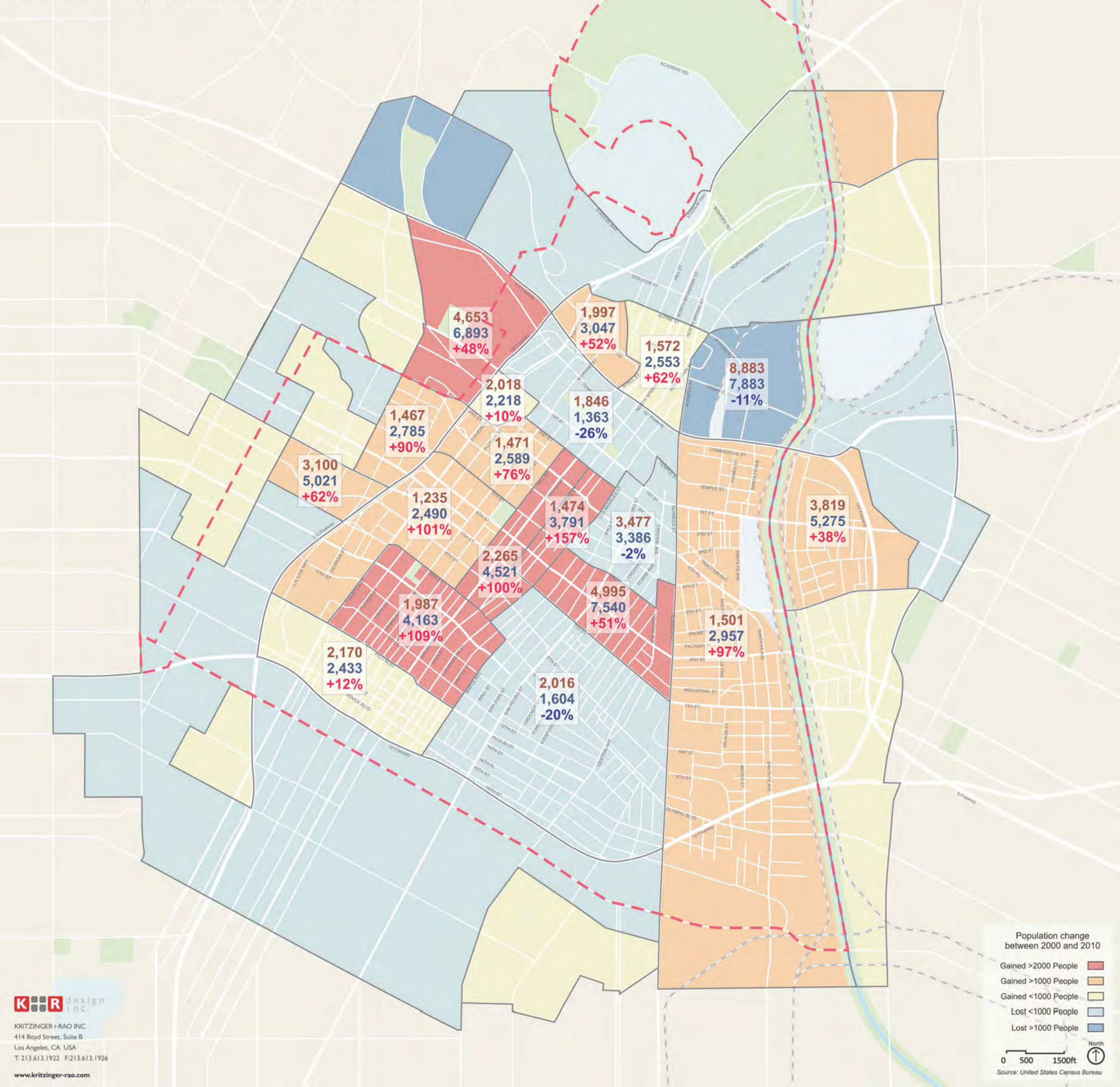
www.kritzinger-rao.com


Downtown Los Angeles Historic Streetcar Routes
LA Inter-Urban Railway
connected cities in California
between 1900 and 1925
Pacific Electric Railway
connected cities in LA County,
Orange County, San Bernardino
County and Riverside County
between 1899 and 1953
Los Angeles Railway
operated in central Los Angeles
between 1901 and 1963
LA & Redondo Railway
connected Central LA and
Redondo Beach between 1888 and
1911, merged into Pacific Electric
Railway in 1911
Dodger Stadium
China Town
Piggyback Yard
USC Medical Center
El Pueblo Olvera st.
Union Station
Music Center
MOCA
Civic Center
Central Library
7th+ Figueroa
Broadway
Little Tokyo
Toy District
Arts District
SCI-Arc
LA Live
Staple Center
Convention Center
So. Park Community
Flower Market
LA Clean Tech
Santee Alley
City Market
Produce Market
USC
Expo Park
Los Angeles RY
Pacific Electric RY
LA Inter-Urban RY
LA Pacific RR
LA & Redondo RY
Shared Track
North
0
500
1500ft
KRITZINGER + RAO INC
414 Boyd Street, Suite B
Los Angeles, CA USA
T: 213.613.1922 F:213.613.1926
www.kritzinger-rao.com

Downtown Los Angeles Transit System



Downtown Los Angeles Residential Population Growth 2000-2010



CEQA - Restoration of Historic Streetcar Service in Downtown Los Angeles

Bryan Libit <blibit@gmail.com> Mon, Feb 11, 2013 at 10:49 AM
To: jim.doty@lacity.org

Mr. Doty-
Attached please find comments and a response to the initial CEQA scoping document on the Downtown Streetcar project from the Pan American Loft Association, a historic 40 unit condo building located at 3rd & Broadway along the proposed streetcar route. We look forward to the future design and planning of the project and your thoughtful consideration of our comments. Thank you.

-Libit

--
Bryan Libit
President, Pan American Loft Association
310-920-4412
blibit@gmail.com

February 4, 2013

City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213

RE: CEQA, Restoration of Historic Streetcar Service in Downtown Los Angeles

Dear Los Angeles Bureau of Engineering and Mr. Doty-

We represent the Pan American Loft Association, a community of 40 owner-occupied residential lofts in the historic Irvine-Byrne building located at 3rd & Broadway in Downtown Los Angeles. Our association and fellow homeowners are excited and anxious with the upcoming streetcar project proposed for Broadway & Hill streets surrounding our building. The purpose of this letter and our feedback is to address questions and concerns for the potential maintenance and storage facility proposed adjacent to our property. Our intention is to promote a successful streetcar project that benefits the community at large and eliminates detrimental impacts to the cultural-historic monument that is our home and we work hard to preserve.

We believe that the Broadway/Hill/2nd street location for the maintenance facility will cause an impact on our immediate downtown neighborhood and careful design consideration or an alternative location must be selected for this facility. The city and the streetcar planners should strongly consider the alternate locations (Hill & 5th, 11 & Grand) or propose design solutions that will not harm the gentrification of our area of downtown. The impact that a "maintenance & storage yard" can cause on the pedestrian, residential and urbanist quality of life on Broadway between 2nd & 3rd will be dramatic if done with a heavy hand. These issues can be resolved by using the maintenance facility as a catalyst for smart development and integrating it into a mixed use project or other venture that improves the civic & cultural life of northern downtown. This facility will have a negative community impact if it is just an open yard with a lifeless concrete building.

The design and location of this facility is crucial as to not detrimentally affect the noise levels, blight, traffic, and property value of our block in downtown. Located in a historic monument, the Pan American Lofts is one of the first residential communities in downtown and we invested a lot of time as well as resources reestablishing the quality of life back to Broadway. We are clearly concerned for our investment and want to work with the city on the streetcar as a force for community development and avoid negative outcomes to ourselves, our historic building and downtown.

We encourage the city as well as the streetcar design team to look at "best in class" examples in cities such as Portland and Seattle for the potential of these maintenance and storage facilities. If the plan, however is to create a budget, mundane, noisy, and street-life killing facility please select an alternate location other than our block on Broadway that is located away from residential, civic and commercial activity.

We believe in and are investors in the future of downtown. Our association supports the Downtown Streetcar and knows that every aspect of this project could be used as a way to make downtown better. From the mobility of our neighborhood to the simplest storage building, every part of the streetcar is an opportunity to make downtown Los Angeles a world class community. Thank you for your consideration, understanding and aspirational vision in addressing our concerns and enhancing the quality of life in our neighborhood.

Pan American Loft Community Association
Board of Directors, Bryan Libit, Andrew Rhoda & Andrew Tamandl
253 S Broadway
Los Angeles, CA 90012

Pan Am Lofts Streetcar.pdf
78K

February 4, 2013

City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213

RE: CEQA, Restoration of Historic Streetcar Service in Downtown Los Angeles

Dear Los Angeles Bureau of Engineering and Mr. Doty-

We represent the Pan American Loft Association, a community of 40 owner-occupied residential lofts in the historic Irvine-Byrne building located at 3rd & Broadway in Downtown Los Angeles. Our association and fellow homeowners are excited and anxious with the upcoming streetcar project proposed for Broadway & Hill streets surrounding our building. The purpose of this letter and our feedback is to address questions and concerns for the potential maintenance and storage facility proposed adjacent to our property. Our intention is to promote a successful streetcar project that benefits the community at large and eliminates detrimental impacts to the cultural-historic monument that is our home and we work hard to preserve.

We believe that the Broadway/Hill/2nd street location for the maintenance facility will cause an impact on our immediate downtown neighborhood and careful design consideration or an alternative location must be selected for this facility. The city and the streetcar planners should strongly consider the alternate locations (Hill & 5th, 11 & Grand) or propose design solutions that will not harm the gentrification of our area of downtown. The impact that a "maintenance & storage yard" can cause on the pedestrian, residential and urbanist quality of life on Broadway between 2nd & 3rd will be dramatic if done with a heavy hand. These issues can be resolved by using the maintenance facility as a catalyst for smart development and integrating it into a mixed use project or other venture that improves the civic & cultural life of northern downtown. This facility will have a negative community impact if it is just an open yard with a lifeless concrete building.

The design and location of this facility is crucial as to not detrimentally affect the noise levels, blight, traffic, and property value of our block in downtown. Located in a historic monument, the Pan American Lofts is one of the first residential communities in downtown and we invested a lot of time as well as resources reestablishing the quality of life back to Broadway. We are clearly concerned for our investment and want to work with the city on the streetcar as a force for community development and avoid negative outcomes to ourselves, our historic building and downtown.

We encourage the city as well as the streetcar design team to look at "best in class" examples in cities such as Portland and Seattle for the potential of these maintenance and storage facilities. If the plan, however is to create a budget, mundane, noisy, and street-life killing facility please select an alternate location other than our block on Broadway that is located away from residential, civic and commercial activity.

We believe in and are investors in the future of downtown. Our association supports the Downtown Streetcar and knows that every aspect of this project could be used as a way to make downtown better. From the mobility of our neighborhood to the simplest storage building, every part of the streetcar is an opportunity to make downtown Los Angeles a world class community. Thank you for your consideration, understanding and aspirational vision in addressing our concerns and enhancing the quality of life in our neighborhood.

Pan American Loft Community Association
Board of Directors, Bryan Libit, Andrew Rhoda & Andrew Tamandl
253 S Broadway
Los Angeles, CA 90012

LOS ANGELES
CONSERVANCY

February 1, 2013

Submitted electronically
Jim Doty
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
Email: jim.doty@lacity.org

Re: Notice of Preparation of a Draft Environmental Impact Report/ Environmental Assessment for the Restoration of Historic Streetcar Service in Downtown Los Angeles

Dear Mr. Doty:

On behalf of the Los Angeles Conservancy, thank you for the opportunity to comment on the Notice of Preparation for the restoration of streetcar service in downtown Los Angeles. The Conservancy is excited to see a return of streetcars to the historic core of Los Angeles. The extensive streetcar system of the late nineteenth and early twentieth century was a vital component in the growth of Los Angeles and influenced the city's development pattern.

Many streets along the routes of both the locally preferred and 9th Street alternatives historically accommodated streetcars from various lines, and appear to be appropriate for a return of service. Nonetheless, we urge that the design, construction, and operation of the streetcar avoid or minimize adverse impacts to historic resources along the selected route. This includes location of traction power substations (TPSS), overhead systems, and maintenance and storage facilities. If significant impacts on historic resources are anticipated, we ask that preservation alternatives are evaluated in the Draft EIR/EA.

In the past, streetcar facilities were integrated into buildings that became part of downtown's urban fabric, such as the Pacific Electric Building and the Subway Terminal Building. The potential locations identified for the new streetcar maintenance and storage facilities are currently vacant sites, which should retain the option for future infill construction to reconnect the streetscape. If new construction is anticipated, we recommend guidelines to ensure appropriate scale and massing with the surrounding context, particularly when adjacent to historic resources or districts. In addition, opportunities may exist to reuse or incorporate remaining elements of the historic streetcar system, such as existing eyehooks for overhead wires on buildings along the route.

About the Los Angeles Conservancy
The Los Angeles Conservancy is the largest local historic preservation organization in the United States, with nearly 6,500 members throughout the Los Angeles area. Established in

1978, the Conservancy works to preserve and revitalize the significant architectural heritage of Los Angeles through advocacy and education. Since 1999, when the Conservancy launched our Broadway Initiative, we have been providing technical assistance, legislative advocacy, and educational programs such as walking tours and our Last Remaining Seats film series, to help lead the revitalization of Broadway and the surrounding historic downtown.

Please feel free to contact me at (213) 430-4203 or afine@laconservancy.org should you have any questions.

Sincerely,

Adrian Scott Fine

Adrian Scott Fine
Director of Advocacy

cc: Jessica Wethington McLean, Bringing Back Broadway, Council District 14
Blair Besten, Historic Downtown Los Angeles BID

Street Car Project

Pete Ong <pete@campiononline.com> **Wed, Feb 6, 2013 at 11:08 AM**
Reply-To: pete@campiononline.com
To: jim.doty@lacity.org
Cc: Jessica Lall <jessica@southpark.la>

Mr. Doty,

I am writing to clarify the location of the 30,500 square foot rail yard. On the Bureau of Engineering report W.O. E1907459 it states that the site for this rail yard is on the southeast corner of 1st and Grand. However, on the Notice of Preparation of a Draft Environmental Impact Report dated January 3, 2013, it states that this rail yard will be at the southeast corner of 11th and Grand.
My concern is that the Grand Lofts is on the southeast corner of 11th and Grand and would really love to have the location clarified.

Your preferential attention on this matter will be highly appreciated.

Best,

Pete Ong, Jr.
For and in behalf of the residents of the Grand Lofts.

---

pete.vcf
1K

Jim Doty <jim.doty@lacity.org>

Registered mail for Streetcar notices

1 message

Bart Reed <bartreed1951@gmail.com> Wed, Jan 9, 2013 at 12:31 PM
To: "Franco, Paulette" <Paulette.Franco@icfi.com>
Cc: "Jim.doty@lacity.org" <Jim.doty@lacity.org>, Ara Kasparian <akasparian1@socal.rr.com>

To all concerned:

Bart Reed and The Transit Coalition DO NOT want to be sent any registered mail for any and all notices associated with the LA Streetcar project.

Bart Reed and The Transit Coalition want to be sent mail only via standard postage and we want to be kept on the mailing list.

Bart!

The Transit Coalition
Bart Reed, Executive Director
bart.reed@thetransitcoalition.us * www.transitcoalition.org
Voice: (818) 362-7997 * Fax: (818) 364-2508 * Cell: (818) 419-1671
P.O. Box 567, San Fernando, CA 91341-0567

On Wed, Jan 9, 2013 at 12:14 PM, Franco, Paulette <Paulette.Franco@icfi.com> wrote:

> Dear Mr. Reed,
>
> As we discussed on the phone, you and your organization (The Transit Coalition) would like to not be sent registered mail for notices associated with the Streetcar project. Please email Jim Doty (jim.doty@lacity.org) at the City of Los Angeles with a request to be kept on the mailing list and to be sent mail only with standard postage.
>
> Thank you,
>
> Paulette Franco
>
> **PAULETTE FRANCO** | Senior CEQA/NEPA Project Manager | office. 213.627.5376 x265 | paulette.franco@icfi.com | icfi.com
>
> **ICF INTERNATIONAL** | 811 W. 7th Street, Suite 800, Los Angeles, CA 90017 | mobile. 213.864.1363
>
> Connect with us on social media.

Jim Doty <jim.doty@lacity.org>

FW: Reminder - Streetcar Comments Needed 2/11

1 message

Ginny-Marie Brideau <GBrideau@therobertgroup.com> Mon, Feb 4, 2013 at 10:16 AM
To: Jim Doty <jim.doty@lacity.org>

Ginny Brideau, The Robert Group

gbrideau@therobertgroup.com

(o) 323.669.9100 (f) 323.669.9800 (m) 213.248.0698

Twitter: @TheRobertGroup

From: Roy Reynolds [mailto:roy.reynolds@prtstrategies.com]
Sent: Monday, February 04, 2013 10:17 AM
To: Ginny-Marie Brideau
Subject: Re: Reminder - Streetcar Comments Needed 2/11

Ms. Brideau,

I suggest your group THOROUGHLY review and appreciate this link and the attached. **Streetcars are a ridiculously slow and expensive transit option for a modern American city.**

I also suggest your review of all the items on this link for a better alternative that my firm proposed for downtown Los Angeles: http://www.prtstrategies.com/connector.html. My firm has also proposed Personal Rapid Transit for the Pacific Electric Right-of-Way that runs from south LA to central Orange County here.

===
Roy Reynolds
Principal

PRT Strategies
Fountain Valley, CA

Voice/Msgs: 714.531.7076
Skype, Twitter: rallenr

http://prtstrategies.com

Thomas Properties Group INC

City National Plaza
515 South Flower Street
Sixth Floor
Los Angeles, CA 90071

www.tpgre.com

213.613.1900
Fax 213.633.4760

February 11, 2013

VIA E-MAIL AND U.S. MAIL
Mr. Jim Doty
City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213
Email: jim.doty@lacity.org

Re: Restoration of Historic Streetcar Service in Downtown Los Angeles
Notice of Preparation of a Draft Environmental Impact Report

Dear Mr. Doty:

Thomas Properties Group ("TPG") is the real property owner and property manager of the properties located at 515-555 South Flower Street, "City National Plaza and Towers" and 400 South Flower Street, known as the "J-2 Garage", collectively, the "TPG Properties". These properties are located within the boundaries of the Community Facilities District that was approved by resident voters in December 2012. Pursuant to CEQA/NEPA, the comments contained in this letter are submitted for consideration.

The City of Los Angeles has proposed two alternatives for the Historic Streetcar Service as follows:

- Locally Preferred Alternative
- 9th Street Alternative

TPG has previously gone on record to oppose the restoration of the Streetcar Service and the Community Facilities District for a number of reasons, including, the lack of a vote on the Communities Facilities District for property owners and the fact that TPG already provides shuttle service to many of the same locations the Streetcar would serve. The concerns of property owners and tenants have not been adequately addressed throughout the process. Therefore, TPG strongly objects to both alternatives for the restoration of the Streetcar Service.

TPG submits the following comments to be addressed in the Draft EIR:

Aesthetics:

- What is the appearance of the traction power substations (TPSS)? The Draft EIR must include illustrative graphics of these if they will be located above grade.
- The TPSS have the potential to create visual blight in the "approximately five" locations. The locations of the TPSS must be identified with some level of certainty.
- At 20 feet long, 15 feet wide and 10 feet tall, the TPSS have the potential to be an eyesore if located above grade. How can they be aesthetically treated to reduce visual blight?
- What view impacts might the TPSS have?
- What shade/shadow impacts would occur?
- Are there any light and/or glare impacts from the new streetcars and platforms?
- Do the overhead contact systems create visual blight? Would an in-street system be more aesthetically pleasing?
- How is the overhead contact system supported?
- What is the appearance of each platform?
- Where along the route are the platforms located?

Biological Resources:

- The Initial Study incorrectly identifies no impact or less than significant impacts as a result of the proposed project.
- The impact on the street trees adjacent to the route of the streetcar must be studied. The streetcar itself as well as the overhead contact system could impact trees adjacent to the route.
- Is there any impact on trees that might have to be removed for the TPSS or the maintenance and storage facility?

Geology and Soils

- The potential for deep excavation for traction power substations and maintenance facilities is mentioned in Cultural Resources but not in Geology and Soils. The Draft EIR must address the deep excavation in the discussion of Geology and Soils.
- What is the potential for ground loss adjacent to these deep excavations?
- Where are the deep excavations required along the route?

Hazards and Hazardous Materials

- The Initial Study states that there are five known cleanup sites within the vicinity of the proposed project. These sites should be disclosed and analyzed in the Draft EIR.

Hydrology and Water Quality

- The Initial Study states that there would be no impact or less than significant impacts related to Hydrology and Water Quality. To the extent that street grades are modified, there are potential impacts to run off that need to be addressed in the Draft EIR.

Land Use and Planning

- Consistency with the Downtown Los Angeles Street Standards must be analyzed.
- Does this project require any takings of private property? If so, the sites must be identified in the Draft EIR.

Noise

- The Initial Study identifies a potentially significant impact resulting from night time construction. These impacts must be studied and disclosed.
- What are the operational impacts of the streetcar service? For example, frequency of alarms, horns, loud speaker announcements?
- Are there vibration impacts as a result of construction or operations?

Public Services

- The Initial Study states that impacts on Public Services would cause no impact or less than significant impacts.
- The Initial Study does not address potential impacts to emergency response times based on reduction of traffic lanes along the route and the potential for streetcars to block intersections and access to properties adjacent to the project. The Draft EIR must include this analysis.

Transportation/Traffic

- Will private shuttles still be able to provide drop-off and pick-up services along the route?
- What are the impacts on circulation and traffic on the following streets: Figueroa, Flower, 5th, 6th, Wilshire, 7th, Broadway, 9th, 11th, Hill, 1st, and Grand?
- What are the impacts of removing traffic lanes along the entirety of the route?
- City National Plaza has a drop-off pull-out on Figueroa Street - will access to this pull-out be maintained?
- Will access to the bus/shuttle stop at the corner of 5th Street and Figueroa be maintained?
- What mitigation will be required to ensure coordination of streetcar with vehicular and pedestrian traffic?
- What measures will be put in place to ensure pedestrian safety?

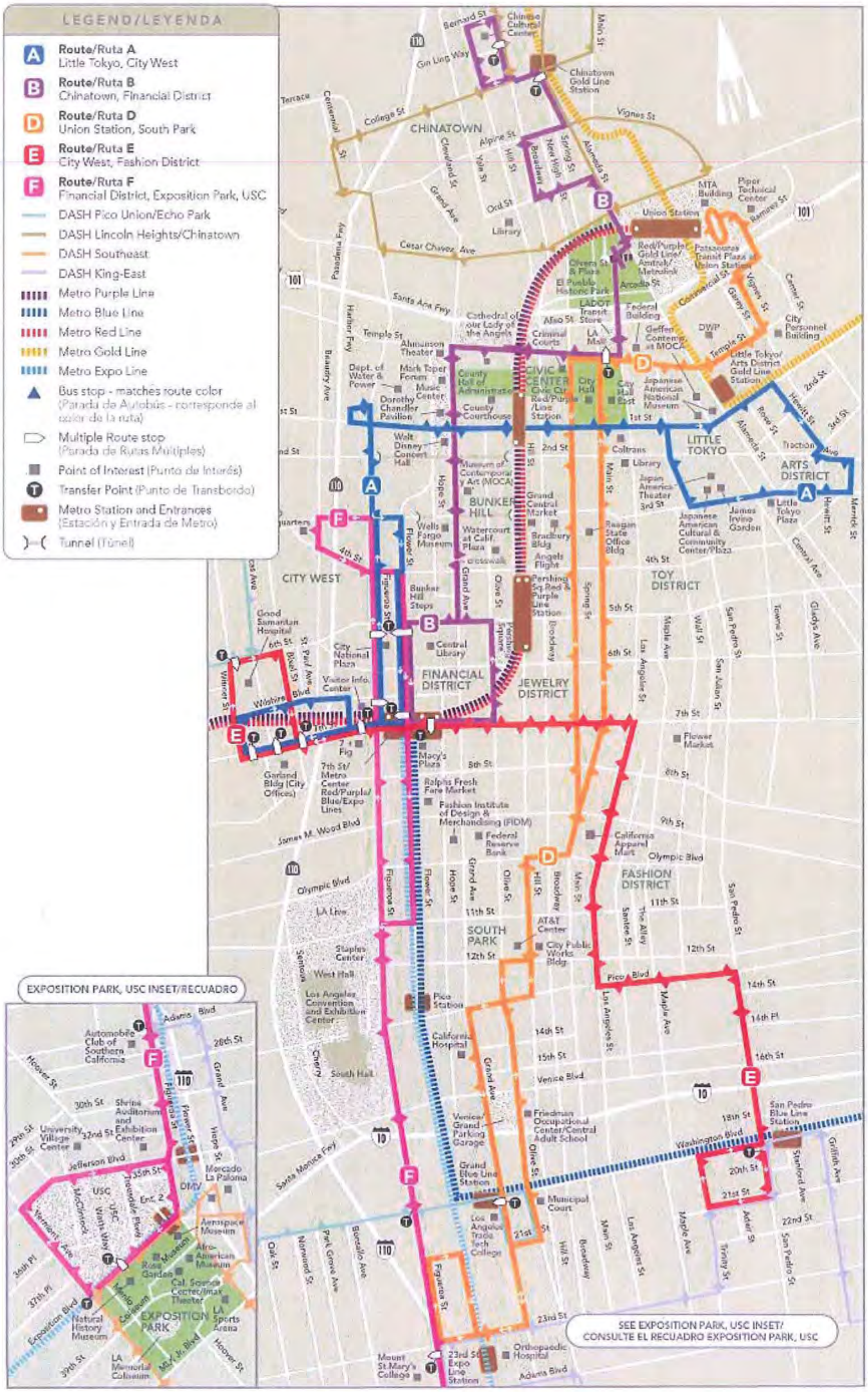
Finally, in addition to the above, TPG further objects to the Streetcar Service as a transit connection that is duplicative of existing DASH Routes D and E making it unnecessary (see Exhibit A). The significant impacts that will result are not outweighed by the benefits of the project. The benefits of this project are limited and do not provide an enhancement to the majority of downtown property owners and tenants of the properties with the highest density.

Sincerely,

Thomas Ricci
Executive Vice President

cc: José Huizar, Councilmember, 14th District
Ginny-Marie Brideau, The Robert Group

Exhibit A
Los Angeles County Metropolitan Transportation Authority
DASH Routes



Purpose and Need

1/24/13

Mr Jim Doty
City of Los Angeles, Dept of Public Works, BOE
1140 S. Broadway Ste 600
Los Angeles CA 90015-2213

Dear Mr Doty

The stated goal of the downtown LA Historic Streetcar Service Restoration Project is to "enhance Mobility and transit circulation to further revitalize downtown". The actual result though will be quite the opposite. This project will reduce mobility while having no effect on transit circulation or revitalization.

Adding streetcars to the allready congested streets of downtown will only make traffic worse. Streetcars are functionally the same as the buses that replaced them except that streetcars can not manouver around obstructions such as double parked cars and trucks, accidents, road work or police or fire dept activity. Also, streetcars can not pull over to the curb to let passengers on or off, but instead must stop in traffic lanes, thereby blocking traffic. Finally, Streetcars will be just that many more vehicles on the allready crowded street.

Streetcars will not enhance transit circulation. Downtown is already served by dozens of Metro and Municiple bus lines, many of which follow the same routes through down town as this proposed streetcar. In addition, the DASH shuttle system serves the same function as the streetcar, with a choice of routes covering most of down-town. Furthermore, down town is served by the Red an Purple Line subways running under the congested streets at five minute headways, providing much faster and more convenient service than a streetcar ever could. Finally, by the time this streetcar is running, we will be well under construction on the Regional Connecter, an underground ~~extention~~ of the Blue and Expo Light rail Lines, creating a second subway corridor through downtown.

The Construction of a Streetcar will not further revitalize downtown. Other cities (such as Portland OR) that built streetcars, did so on corridors that were lightly trafficed using minor streets to connect downtowns to adjacent functionaly obsolete industrial and shoreline areas with no other transit service. This helped facilitate the revitalization of these areas with the conversion of vacant buildings to lofts and commercial uses and the construction of new condo towers on former parking lots and one story buildings. The construction of the metro Blue Red and Purple Lines into and through downtown in the late 1980s had the same effect here in LA. Large numbers of old pre WWII office and Industrial buildings along the subway corridor were converted to lofts and more than a dozen new buildings built near the metro Stations. Furthermore, now that the economy is growing again the downtown residential boom is resuming, with two residental Highrises currently under construction and at least two more expected to break ground this year. Similar construction activity is also occuring near metro stations in Hollywood and Mid Wilshire.

Finally, the Streetcar will not enhance tourism. Some of the earliest systems attracted tourists because of the uniqueness of the Streetcars and because these citys had few other attractions. Los Angeles on the other hand is tourist mecca. Everybody already wants to visit LA to see Disneyland, Universal Studios, Hollywood, Venice beach, Santa Monica, etc. Meanwhile, streetcars have become a dime a dozen, so many cities now have them, that nobody has to come to downtown LA Just to see and ride a streetcar, and certainly not one that is stuck in a traffic Jam.

In Conclusion, this is a project that will make traffic worse while providing no benifits to the downtown area. I haven't gone into Such other negative effects of this project such as visual blight from the Centenary system or incresed energy consumption to operate the streetcars.

Sincerely,

Charles A Adelman
6146 Eleanor Ave #107
Los Angeles CA 90038

Streetcar Project

1 message

Kenneth Alpern <sealnbear@icloud.com> Fri, Feb 1, 2013 at 10:56 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

The key factor for this project to succeed is to extend the benefits of the Downtown Light Rail Connector and Red/Purple Lines to the rest of Downtown.

Ken

Sent from my iPhone

Jim Doty <jim.doty@lacity.org>

street car

1 message

Yvonne Michelle Autry <michellelivefire@yahoo.com> Tue, Jan 29, 2013 at 12:57 PM
To: jim.doty@lacity.org

As a ten year resident and stake holder, living and working in the Downtown area, I do support and I do look forward to the RETURN of the Street Cars to the Downtown areal Thank you for an opportunity to RESONDI

Sincerely,
Yvonne Michelle Autry
213-805-1674

LA GEECS

Jim Doty <jim.doty@lacity.org>

In favor of Street Car

1 message

BARRETT, PATRICIA A <pb4615@att.com> Fri, Feb 1, 2013 at 9:07 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Hello Jim
I am in favor of what you are doing with the street car.
I feel it will bring a lot of value to the community.
I also feel that having the street care rest stop and repair at 11th Street and Grand is a great idea.
If you need further information please ask.
Looking forward to the completion of the street car.

Best Regards,
Pat A. Barrett
Sr. Account Manager
Government/Education Client Group
AT&T ~ Rethink Possible...
Cell: 213-422-4539
Office ~ 213.743.6944
Email: pb4615@att.com

.

Jim Doty <jim.doty@lacity.org>

RE: Street Car - response

1 message

Beatrice Brooks <beatricebrook@yahoo.com> Thu, Jan 31, 2013 at 3:49 PM
Reply-To: Beatrice Brooks <beatricebrook@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

The proposal for street car, is a pretty good deal. Some, propably wonder about noise, and if street where traveling is very adequate. I do not think it should be a problem.

beatricebrook@yahoo.com

Streetcar

1 message

peter@mrla.ca <peter@mrla.ca> **Wed, Jan 30, 2013 at 5:19 PM**
To: jim.doty@lacity.org

My name is Peter Drivas and I reside at 253 South Broadway. Therefore I am one of the most impacted residents as the loft I own is on Broadway and 3rd Street.

Many people ask why I don't buy a bike or scooter to get around the neighborhood.

Its simple. How can I enjoy the walks around the neighborhood if I am mobile. I have to navigate around traffic and miss all the splendor that downtown offers. The beautiful architecture, the shops, reataurants and the people.

Having the trolly allwos one to view the splendor of downtowen and all that itr offes. An added bouns is energy efficianey whcih is iprtna tot al of us.

Go trolley!!!
The most logical place for a terminal would be Olive and 11th Street as the 5th and Hill space is needed parking or potentially a residential or commercial buidling. As for the area by Hills / Broadway and 2nd, I feel this parcel is to valuable as a future condominum tower or comercial space or combination.

I am originally from New York City and I see downtown as the futrue Tribecca equivalent of Manahattan. I envsion Broadway as the hippest street in downtown and liken it to Colorado Avenue in Pasadena.

Thank you for allowing me to give you my input.

Peter Drivas / Cell: 949: 285-9919

Downtown Streetcar

1 message

Tom Gilles <pdxtommyg@sbcglobal.net> Fri, Feb 1, 2013 at 2:22 PM
Reply-To: Tom Gilles <pdxtommyg@sbcglobal.net>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: Thomas Gilles <pdxtommyg@gmail.com>

My wife and I live in Los Angeles - Beachwood Canyon. We also have an apartment in Portland in the Nob Hill area.
Portland has excellent public transportation. Our apartment is within 1 block of the Portland Streetcar line. We can catch the tram and be in the heart of Downtown Portland in about 15 minutes. This line also bisects MAX, the light rail line to PDX. We don't need to drive while in Portland and can grocery shop, dine and have an adult beverage and get home safely.
Los Angeles had the best system in the world. Want to regain the best status? Try the Los Angeles Circular Streetcar
in downtown! ! !

Tom and Karon Gilles

test

1 message

Xavier Grobet <xavmex@gmail.com> Wed, Jan 30, 2013 at 9:21 AM
To: jim.doty@lacity.org

Why not have Dash create a rout on the future street car alignment to test the waters on how many people would benefit from this route.

Jim Doty <jim.doty@lacity.org>

Restoration of Streetcar Service

1 message

Morley Helfand <morleyhelfand@yahoo.com> Wed, Jan 9, 2013 at 11:39 AM
Reply-To: Morley Helfand <morleyhelfand@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Mr Doty:

Though I am not a resident of Los Angeles (I live in Arcadia) I am all for the restoration of Streetcar service in Los Angeles. Having been born in L.A. and lived in Hollywood I rode the Pacific Electric and LATL lines almost every day and know how important such transportation is and how much the merchants can benefit from this mode of transportation.

Please advise if you need my assistance.......I will be unable to attend the meeting.

Morley J. Helfand
morleyhelfand@yahoo.com

137-B Genoa Street,Arcadia, CA 91006

Jim Doty <jim.doty@lacity.org>

I Support the Downtown Streetcar Plan

1 message

DAVID JOHNSON <ace063562@msn.com> Fri, Feb 1, 2013 at 9:09 AM
To: jim.doty@lacity.org

Hello,

I would look to add my voice to those who would like to see the restoration of a downtown street car.

I support the initial downtown streetcar proposal 100%

Thank you,

David R. Johnson

562-305-1962

Streetcar comments

Gregory Kay <gregoryskay@gmail.com> Mon, Jan 28, 2013 at 2:41 PM
To: jim.doty@lacity.org

This project is unnecessarily duplicative of existing service on the red and purple subway lines, the under-construction regional connector light rail line and many bus lines that pass through Downtown.

The streetcar project will also subject Downtown to several negative effects in the following areas:

1. Transportation/Traffic - This project will add additional over-sized vehicles to narrow Downtown streets and further worsen already-existing poor traffic conditions.

2. Air quality - The additional traffic created by this project will worsen Downtown air quality because of additional exhaust caused by increased idling of cars in traffic on Downtown streets.

3. Aesthetics/Visual Quality - This project will be built in an area with many historic buildings and the infrastructure required for the streetcar (including the service yard, the power substations and the overhead wiring) will interfere with the views of the historic buildings and will decrease enjoyment of these historic resources.

4. Noise - This project will add additional noise in the project area late in to each night (according to the proposed service schedule). The construction of the project will also add additional noise to the area.

5. Safety - Downtown is already an area with significant pedestrian traffic. Streetcars making turns at intersections will create dangerous conditions for pedestrians.

6. Construction Impacts - The construction will significantly contribute negative impacts of noise, traffic and worsened air quality.

7. Historic resources - The street route will interfere with the future restoration of many historic buildings in Downtown by preventing of the use of space in front of buildings for construction staging that would be necessary for a restoration project.

8. Environmental Justice - This project will further contribute to the gentrification of Downtown and drive out many current low income residents.

Jim Doty <jim.doty@lacity.org>

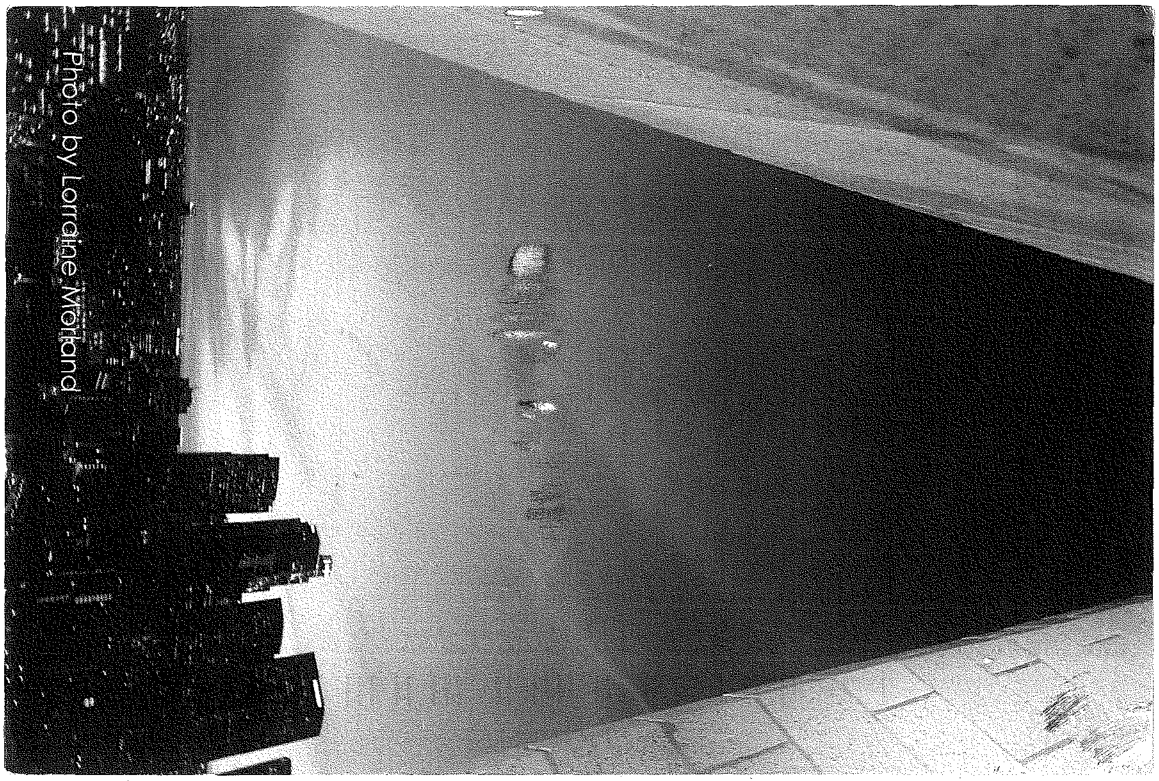
streetcar: Restoration of Historic Streetcar Services in Downtown Los Angeles

1 message

Barbara Lin <walnut.barbara@gmail.com> Mon, Feb 4, 2013 at 2:52 PM
To: jim.doty@lacity.org

Streetcar would be wonderful transportation in Downtown.

Barbara Lin 626 232 8061



Keep up The great
opportunity to bring
our Downtown together
with dignity!!
My love, Lorraine Morland
Homelessnomore@gmail.com

LOS ANGELES CA 900
2013 PM 14 L

USA 32
ALOHA 2012

City of Los Angeles
Department of Public Works
Attn: Jim Doty
1149 S. Broadway
Suite 600
Los Angeles, CA 90016

Jim Doty <jim.doty@lacity.org>

Streetcar Proposal

1 message

Hassan Nicholas <hassan.nicholas@gmail.com> Mon, Feb 11, 2013 at 9:50 AM
To: jim.doty@lacity.org

Dear Jim,

I am a Downtown LA resident living in the Historic Old Bank District. I would like to declare my support for the restoration of historic streetcar service in Downtown Los Angeles. Downtown LA is undergoing several positive transformations. The addition of an intuitive transportation system seems fitting with regards to other projects planned for this area. A streetcar will not just make getting around downtown more efficient, but will also add character to the neighborhood. As a small business owner opening up a cafe along the proposed route of the streetcar I fully support and endorse this project.

Warm regards,

Hassan Nicholas
Manifesto Tea + Espresso House (*future home in the Last Bookstore)*

--
Hassan R. Del Campo Nicholás
323.812.8825 cell | 323.846.1434 office

Jim Doty <jim.doty@lacity.org>

Downtown Streetcar

1 message

Clinton Oie <Clinton.Oie@marlboroughschool.org> Mon, Jan 28, 2013 at 9:08 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

This looks great to us and we are looking forward to it. Our family lives at Main and 6th Streets, so even though the city is currently very walkable, it will be great to be able to hop on the Streetcar to get to LA Live, and come home from Ralphs, etc. I like the 7th Street proposal, because that is where so much of the downtown action is (restaurants and stores), but understand, if for traffic reasons, 9th Street is used.

Sincerely,

Clinton Oie

610 South Main Street, #544 (family of four).

Response to scoping

Stuart Patterson <stu@colorola.com>
To: jim.doty@lacity.org

Fri, Feb 1, 2013 at 11:53 AM

To Jim Doty, Department of Public Works

Dear Mr Doty:

As a resident and business owner in downtown Los Angeles for nearly a decade, I applaud the efforts to bring any sort of increased public transportation to the area. And though I find the claim that this project constitutes a 'restoration of the historic streetcar service' a bit dubious, I'm confident that the proposed route will provide, at the very least, a novel conveyance for potential visitors— particularly from the hotels and convention crowd near LA Live, the future Ace Hotel, and vicinity.

My chief concern is walkability. Downtown LA is located in one of the most temperate environments on earth, yet we model our urban plan as if the pedestrian were of little account. Indeed, so many of the potential benefits of the streetcar refer to the success of the one in Portland, one of the wettest cities in the nation with an annual rainfall average of nearly 40 inches. Yet Portland is also a highly walkable city. Los Angeles is not, and downtown, where people actually do walk, is not providing sufficiently for the increased foot traffic.

Furthermore, Broadway is unique. Nearly every building is an architectural treasure. I'm concerned that the focus on mechanized transportation ignores the potential the street has a pedestrian attraction. For nearly 10 years I lived on the 'Rambla de Catalunya' in Barcelona. This thoroughfare is a magnate for locals and tourists, providing a remarkable attraction that benefits local businesses and provides needed public space for an urban center quite nearly as covered in concrete as downtown LA. The famous tree-lined promenade (not to be confused with 'Las Ramblas', it's more prominent sibling) also permits auto traffic in two directions, and though narrow, the corridor actually functions surprisingly well in regards to volume and traffic. The 'High Line' in New York also succeeds because of walkability. The emphasis on the pedestrian that made that remarkable, transformative thoroughfare happen seems to be regretfully absent from the urban planning of downtown Los Angeles.

Jeff Speck, a respected urban planner and author of the informative recent book, 'Walkable City', observes that a streetcar is not always the 'mobility-enhancing, street-enlivening walkability bomb that their promoters would have us believe.' Speck rightly asserts that streetcars are only effective when the routes correspond to other transit networks and, most importantly, that they take people somewhere they can walk. Again, I'm no NIMBY, and I'm a supporter of any type of public transit. But there are major problems in downtown LA for the people who walk here: poorly maintained sidewalks, a lack of walking space for dog owners, auto-privileged thoroughfares, unsightly landscaping (tree planters that even Grozny would discard), poorly designed building frontage, etc. These are problems that no streetcar will solve. Only a concerted effort to consider the pedestrian will improve the livability of this exceptional neighborhood, and the success of the street car. My hope is that this streetcar will indeed promote development along Broadway and generate public revenue that can be invested in the community. But without a concerted effort to consider the walkability of downtown LA, the streetcar, I'm afraid, will merely travel through it.

Thank you for your time and hard work.

Sincerely,
Stuart Patterson

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

COMMENT FORM FORMULARIO PARA COMENTARIOS コメント用紙

Name/Nombre/氏名: ROBERT SHAPIRO, O.D.	
Organization/ Organización/団体名: DRS. BALFOUR & SHAPIRO, OPTOMETRISTS	
Address/Dirección/住所・所在地: 555 S. BROADWAY LOS ANGELES, CA 90013	
Telephone/Teléfono/電話: 213 627 5911	Fax: 213 622 8048
Email/電子メール: RSHAP 2020 @AOL.COM	

Comments/Comentarios/コメント:

As a merchant who has a business on Broadway I am very concerned about how the traffic will be affected during the construction phase of the project and how it will be affected after the project is completed. How will pedestrians access businesses during the construction phase? How many lanes of traffic will be affected? How long will construction take? Once completed, will the lane be utilized for automobiles along with the streetcar?

My business is on the west side of the street and my understanding is that the track will be on the west side as the route is southbound on Broadway. The sidewalk in front of my business and indeed most of the block between 5th and 6th is "hollow" below the surface. How will the vibration of the streetcars affect the sidewalk, and indeed, how will it affect the buildings lining the street?

I don't know if this is the purview of the EIR, but I don't understand the necessity of the streetcar as the Dash buses could easily duplicate the routes under consideration. Los Angeles previously had streetcars and they were removed many years ago. It seems to me that this project is a waste of precious resources with minimal, if any, advantage over current buses.

Robert Shapiro, OD, FAAO
555 S. Broadway
Los Angeles, CA 90013
rshap2020@aol.com

Return comment form to: Favor de regresar formulario a: コメント用紙の送付先:
Jim Doty, City of Los Angeles, Department of Public Works, Bureau of Engineering
1149 S Broadway Ste 600, Los Angeles, CA 90015-2213 or jim.doty@lacity.org

From:	Jim Doty
To:	Ara Kasparian; Franco, Paulette; James Lefton; Chivaratanond, Susan
Subject:	Fwd: Streetcar Public Comment
Date:	Thursday, January 31, 2013 1:50:37 PM

---------- Forwarded message ----------
From: **L. Smith** <lorenz1986@hotmail.com>
Date: Thu, Jan 31, 2013 at 1:26 PM
Subject: Streetcar Public Comment
To: jim.doty@lacity.org

Hi Jim,

The Downtown Streetcar Project sounds great and will I believe, have a very positive impact on Downtown for many years to come. Hopefully, with all of the transit that is being built and planned for the region, it will become second nature for many of us to simply "jump on the train". I hope that all of the funds needed for the project is acquired without much handwringing.

Further, I have to believe that developers of hotels (we need more for our convention center) are looking closely at this project and will help them to make-up their minds in favor of building downtown! Not to mention more apartments and condo too.

Thank you and your staff for all your hard work and let's get this Streetcar built sooner rather than later!

Larry Smith
Downtown Resident

P. S.

Are you currently hiring at this time? I would be interested in sending you my resume should you have any openings.

Many thanks.

--
Jim Doty, Manager
Environmental Management Group
Public Works Engineering
1149 S Broadway Ste 601
Los Angeles, CA 90015
213-485-5759

Alternatives

Jim Doty <jim.doty@lacity.org>

Streetcar

1 message

Jacki Breger <jackibreger@mac.com> Mon, Feb 4, 2013 at 9:37 AM
To: jim.doty@lacity.org

I strongly support the proposed route of the streetcar. Although I would personally prefer the 9th Street alternative (I live at the Orpheum), it is a better public policy choice to use the 7th Street route for its proximity to the metro station.

Can't wait for this to happen!

—

Jacki Breger
jackibreger@mac.com

DTLA Streetcar scoping comments

Roberto Barrilero <idonttrustyouwithmyrealaddress@gmail.com>
To: jim.doty@lacity.org

Mon, Feb 11, 2013 at 11:25 AM

Hello,

Here are a few comments on the streetcar plan as it stands:

1) Broadway and Grand seem like the obvious north-south routes for the streetcar to me. But I realize that the elevated street on Grand was probably not built to withstand the weight of a streetcar, and the hill between 4th and 5th might be at too high of an incline for streetcar use. And the routing of Flower, and the dead-ends on Hope and Olive aren't conducive to north-south streetcar traffic. But it feels like a waste to have the streetcar run up Hill as well as Broadway. It would have a much more useful and less-redundant route if it ran north-south on streets that were further away from one another. Are there any other north-south traversals that are possible? Is it technically not feasible to install a streetcar on Grand, or it is it just a matter of too much cost?

2) It seems that Little Tokyo would be an obvious expansion step in the future. Perhaps Chinatown and Union Station could be added to a route as well. Also, another alternative route could be built that could run up Figueroa and along 1st street, connecting with the eastern-most and southern-most portions of the track along the current planned route, to better serve the west side of downtown. Will this project be built with the possibility of future expansions in mind or is the current route the entire present-and-future scope of the streetcar project?

Thank you very much,
Patrick Cooper

From:	Jim Doty
To:	Ara Kasparian; Franco, Paulette; James Lefton; Chivaratanond, Susan
Subject:	Fwd: Reminder - Streetcar Comments Needed 2/1
Date:	Wednesday, January 30, 2013 12:45:46 PM

---------- Forwarded message ----------
From: **Shawn Delrahim** <shawndelrahim@yahoo.com>
Date: Tue, Jan 29, 2013 at 9:21 PM
Subject: Re: Reminder - Streetcar Comments Needed 2/1
To: jim.doty@lacity.org
Cc: Ginny Brideau <gbrideau@therobertgroup.com>

Hello City of Los Angeles,

I am a resident owner in the South Park district of Downtown Los Angeles (DTLA). Please consider this as my comment for the Restoration of the Historic Streetcar.

The Streetcar in DTLA is the best addition approved by the community since the park on Spring St. My comments pertain specifically towards the two proposed options of having the Streetcar run through 7th St. or 9th St. Both options should be implemented and considered part of the development of the Streetcar tracks. Having it run through 7th St or 9th St only will increase the traffic more than the plan would intend to alleviate, taking into consideration either alternate. 7th St alternate would be more beneficial since it runs along the metro station, thus, implying that the 9th St alternate would be logical, from a traffic standpoint, though the amount of traffic from the 9th St freeway exit would increase. Since there would be a fleet of Streetcars on the road, implementing different schedules (i.e., having only a select number of Streetcars pass through the 7th St route during peek hours of 7-9am & 5-7pm) at busy vs non-busy times could alleviate traffic on both alternate routes.

Thanks,

Shawn

From: Ginny Brideau <gbrideau@therobertgroup.com>
To: shawndelrahim@yahoo.com
Sent: Monday, January 28, 2013 9:01 AM
Subject: Reminder - Streetcar Comments Needed 2/1

This is a reminder email regarding the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.

A copy of the Notice of Preparation is available for download by visiting: http://metro.us4.list-manage1.com/track/click?

Jim Doty <jim.doty@lacity.org>

Re: Reminder - Streetcar Comments Needed 2/11

1 message

James Fujita <jim61773@yahoo.com> Mon, Feb 11, 2013 at 2:54 PM
Reply-To: James Fujita <jim61773@yahoo.com>
To: Ginny Brideau <gbrideau@therobertgroup.com>, "jim.doty@lacity.org" <jim.doty@lacity.org>

Hello-

I fully support the downtown streetcar idea.
Although I do not live in the downtown area, as a frequent visitor to downtown, I would be a rider during major events such as Anime Expo or the Travel Show.
As such, the Locally Preferred Alternative would be much more useful to me than if the streetcar followed the 9th Street alternative.
The LPA would also link the streetcar with Metro Rail at 7th/ Metro Center, which makes sense to me.
Sooner or later, the streetcar should be made bi-directional on Broadway or even along its entire route.
Although this would not be an issue for people attending a major convention center event, I could see how the current one-way route could be discouraging for some potential riders. Somebody who started at Broadway and Olympic would have to make a large loop to get back to the starting point. Eventually I hope that the streetcar would be successful enough to extend to multiple routes, with streetcars going to Chinatown or other areas near downtown.
I look forward to getting beyond the discussion and seeing some tracks laid.

- James Fujita

From: Ginny Brideau <gbrideau@therobertgroup.com>
To: Jim61773@yahoo.com
Sent: Monday, February 11, 2013 9:00 AM
Subject: Reminder - Streetcar Comments Needed 2/11

This is a reminder email regarding the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.

A copy of the Notice of Preparation is available for download by visiting: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf

A copy of the Initial Study: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA_Initial_Study.pdf

Street Car System

Peter HuangFu <phuangfu@gmail.com> Sun, Feb 3, 2013 at 3:22 PM
To: jim.doty@lacity.org

Hello Jim,

I'm currently a homeowner in the building known as Elleven on corner of 11th and Grand Ave. While excited to hear that I will be paying more property tax to support a street car system that I potentially may not be using. I'm also really concern with the potential plan that will route street car through 11th street.

I am strongly opposed/concern with the current route proposed through 11th street.

1. 11th street is only a narrow 2 lane street. Olympic, 9th, and 8th street are all wider to handle the <u>additional traffic</u> this project may create

2. The <u>noise level</u> and <u>impact to property value</u> to the homes owners on 11th street. This is personal to me as my windows is facing 11th street. Its already used heavily for emergency vehicle from the firestation during all hours of the day.

3. The proposed maintenance and storage facility currently on Grand and Eleven. This will take significantly already <u>short parking lot availability</u> near homes where guests are visiting. And also yes <u>REDUCE of property value</u> for existing home owners in this area. (would YOU want to live near a train maintenance yard?)

In short, i'm opposed to the current route of street car through 11st street and proposed maintenance and storage facility as a resident and someone who is familiar with this area.

While we are at it, i will also ask/voice my concern with the current plan

4. Will the one way loop really reduce travel time and is a route that is being used by majority of people? it seems like DASH is sufficient enough to travel between all the points of interst

5. Is streetcar really just a novel idea or a useful transportation tool? does is really move more people with less energy and reduce traffic in the area?

6. Will streetcar create more crime and be used as potential tool for terrorist attack?

I'm hoping these questions will be seriously look into and answered.

Until then, I'm skeptical of the current plan and is really not looking forward for this plan to be implemented. I have been supporter of DTLA redevelopment for years and purchased my unit in DTLA as a direct result (put my money where my mouth is). I wish the city makes a wise choice for its residence and visitors to create an environment that is positive for continue revitalization of Downtown.

Sincerely,

Peter HuangFu
Unit 907
1111 S Grand Ave

DNTN LA Street Car Route

1 message

yukio kawaratani <yklk@att.net> Mon, Jan 28, 2013 at 10:28 PM
To: jim.doty@lacity.org

Jim

I was a city planner for the LA/CRA for 31 years from 1962 to 1993. I worked on all the highrise buildings on Bunker Hill and most of those in the CBD Project, including the convention center and U.S Bank Buildings, and Broadway and Spring Streets. So I am familiar with Downtown Los Angeles.

I think the Locally Preferred Alternative route is pretty good in terms of serving the proposed ridership. But I am concerned that it will be a problem on 7th Street because of traffic, many pedestrians, the proposed bikeway,and the length of the street cars. The blocks are also short and the 7th and Figueroa intersection will be a major challenge, especially with all the pedestrians and cars.

I guess that is why you have a 9th Street Alternative, but it is terrible, as it doesn't serve the Financial Core area at all. The financial core is along Figueroa Street to Grand Avenue, and 4th Street down to 8th street. The 9th street route will only serve the South Park Area and primarily housing. Visitors don't want to go to housing.

6th Street is one-way east and MUST be your Alternative to 7th Street, not 9th Street. In fact, it should have been the Locally Preferred Alternative. It will provide excellent service to the Financial Core Area, including the Bunker Hill area along 5th Street. You will be missing a big opportunity if you pass on 6th Street. I brought it up before, but it was ignored. This area is the largest office population in Downtown. It will conveniently serve the Bonaventure and Biltmore Hotels and the Central Library. You have the responsibility to at least look at it in the Draft EIR.

Yukio Kawaratani (626) 572-8010

Jim Doty <jim.doty@lacity.org>

Comments on Streetcar

1 message

yukio kawaratani <yklk@att.net> Mon, Feb 11, 2013 at 10:54 AM
To: jim.doty@lacity.org

Jim

I commented earlier that the 9th Street Alternative is terrible because it bypasses the Financial Core. The much better Alternative would be 6th Street.

Yukio Kawaratani

LA GEECS

Jim Doty <jim.doty@lacity.org>

Scoping comment for LA Streetcar

1 message

James Lin <jameslinmd@gmail.com> Mon, Feb 11, 2013 at 9:38 AM
To: jim.doty@lacity.org

Dear Jim -

As a downtown stakeholder and property owner, these are my comments:

1. I strongly favor the locally preferred alternative. It gives much more width to the areas served. The 9th street plan will serve less "area".
2. I do not like the maintenance and storage facilities at 11th St. I believe the 5th St. Maintenance facility makes the most sense based on location. The 2nd/3rd St maintenance facility may also make sense, but I still favor the 5th St. location.

Thanks for your time.

Sincerely,

James Lin Jr.

--

James Lin, Jr., M.D.
Diplomate, American Board of Radiology

President & CEO
Focus Medical Imaging, Incorporated
Cell Phone: (310) 600 - 3430
Fax: (626) 300 - 6882

Jim Doty <jim.doty@lacity.org>

Re: Streetcar Comments Needed 2/11

1 message

Mike Miller <lastreetcar@mgmiller.net> Mon, Feb 11, 2013 at 2:14 PM
To: jim.doty@lacity.org

Hi,

I see one issue with the route. The top is a mess and unclear what it is trying to accomplish.

I'd rather it come down Hope/Flower for a bit and include the Financial district and Library. The 2nd Street connector could then be canceled, saving billions. The Red line already goes to 7th Street from near Little Tokyo.

I understand that the "thin part" of the streetcar route is to allow quick returns to the other side, but the Red Line already provides this.

The "7th St Alternative" is the correct choice, to connect with the Metro.

Thanks,
-Mike

—— Original Message ——
Subject: Reminder - Streetcar Comments Needed 2/11

Please note: responses to the scoping can be emailed to jimth .doty@lacity.org
<mailto:jim.doty@lacity.org>, or sent via postal mail to:
/City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213/

Please be sure to get your comments in by February 11, 2013.
You provided your contact information to receive updates for the Restoration of Historic Streetcar Services project, conducted by Metro.

Unsubscribe
<http://metro.us4.list-manage.com/unsubscribe?u=2755e5141548aa4632562dd3b&id=669671dc28&e=bffe21eddd&c=e8ba36a8bc>
lastreetcar@mgmiller.net from this list.

Jim Doty <jim.doty@lacity.org>

Restoration of Historical Streetcar Services EIR/HA

1 message

Rob Nesbitt <robwmr@gmail.com> Mon, Jan 28, 2013 at 3:05 PM
To: jim.doty@lacity.org

Mr. Doty,

Thank you for the opportunity to respond to subject reports. I have been a Downtown resident since 1984 and have a keen interest in seeing this project brought to fruition. I am impressed with the project so far and feel it is well thought out. The few comments I have are:

1. I'm glad to see a spur running to 1st and Grand Ave. I hope that stays in the final plan.
2. I strongly feel that the 7th Street (LPA) is by far the best route because of the ability to interface with Metro at Figueroa and 7th Streets.
3. The location of the Maintenance and Storage area seems to be a problem since all three sites, and any site along the route, will prevent that area from being developed with residential/commercial applications. I feel that the northern most location bordered by Hill, Broadway, 2nd and 3rd Streets is the best of the three.
4. I have seen no reference as to the design of the streetcar itself other than the current pictures. I hope the selected cars will be of a more interesting design; perhaps unique to L.A. to add some interest.

--
Rob Nesbitt
645 W. 9th Street, #505
Los Angeles, CA 90015
213.617.8225

proposed streetcar route

1 message

PalmTown111@aol.com <PalmTown111@aol.com> Mon, Jan 28, 2013 at 12:30 PM
To: jim.doty@lacity.org

Dear Mr. Doty
I find it very problematic that the connection between the financial-hotel core and the Staples-Convention Center area is so awkward. It seems too bad that the necessity to maximize constituency damages the logic of the route. Obviously the preferred route would to use 7th Street for two-way trolley traffic and send southbound trolleys via Flower. In lieu of this, the 9th Street crossing makes better sense--both north- and southbound routes remain in closer proximity this way, easier for visitors to comprehend and, hence, use. The northern "tail" to Moca seems an unnecessary complication; no such extension has been proposed for the southern end to connect with the Convention Center at Pico.

I hope the trolleys will look similar to the one shown in the proposal photo. Not only do low-slung trolleys make boarding easier and safer, they are very modern appearing, proclaiming Los Angeles a forward-looking metropolis. Forget cutesy, go sleek.

Also the route should be as traffic-free as possible. I doubt whether the plan includes much exclusive right-of-way, but the more that can be obtained, the better. Progressive cities are realizing that closing off street lanes for bicycles, pedestrians and transit--once considered unthinkable because the movement of cars took precedence over everything else--is an increasingly attractive and popular option. This point should never to be forgotten: the purpose is to improve and enhance the movement of PEOPLE, not vehicles.

Thank you, Mr. Doty, for the opportunity to comment. And please hurry with your project--I'm 73 and would love to see it before croak time. Cheers, Jim Norton

Jim Doty <jim.doty@lacity.org>

RE: Reminder - Streetcar Comments Needed 2/11

1 message

edrosenthal@newdowntownbrokerage.com <edrosenthal@newdowntownbrokerage.com>
To: jim.doty@lacity.org

Mon, Feb 11, 2013 at 5:05 PM

Jim,

I support the Locally Preferred Alternative to the Streetcar

Ed Rosenthal
New Downtown Brokerage
453 South Spring Street
Los Angeles, California 90013
D 213.232.1617 F 213.232.3335 C 213.509.9413
edrosenthal@newdowntownbrokerage.com
www.newdowntownbrokerage.com

-------- Original Message --------
Subject: Reminder - Streetcar Comments Needed 2/11
From: Ginny Brideau <gbrideau@therobertgroup.com>
Date: Mon, February 11, 2013 10:00 am
To: <edrosenthal@newdowntownbrokerage.com>

This is a reminder email regarding the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.

A copy of the Notice of Preparation is available for download by visiting: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf

A copy of the Initial Study: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA_Initial_Study.pdf

A copy of the presentation given: http://www.metro.net/projects_studies/historic-streetcar/images/streetcar_eirscoping_meetingfinal_20130123.pdf

Please note: responses to the scoping can be emailed to

Jim Doty <jim.doty@lacity.org>

streetcar comments

1 message

deborah suyehara <dsuyehara@gmail.com> Thu, Jan 24, 2013 at 7:49 PM
To: jim.doty@lacity.org

Thank you for the informative streetcar scoping meeting. As a downtown homeowner, and an aging babyboomer, I am excited about the proposed streetcar coming to our downtown community.

The two proposed routes are of particular interest to me. I encourage the LPA route, Locally Preferred Alternative. I think this route serves more of the needs of the community as well as local businesses. Please include my preference among the public comments regarding this exciting downtown transportation alternative project.

Respectfully,
Deborah Suyehara

--
Deborah Suyehara, homeowner
257 S. Spring, Unit 4N
Los Angeles, CA 90012

L.A. Streetcar

1 message

alansuye <alansuye@gmail.com> Mon, Feb 4, 2013 at 8:15 PM
To: jim.doty@lacity.org

Hello Mr. Doty,

I just wanted to give my vote to the 7th street option.
The 9th street option would be great for going to Ralphs market, but I believe, with time, other markets will come downtown making the 9th street option a moot point.

Thanks for listening.

Alan Suyehara, DTLA resident

Jim Doty <jim.doty@lacity.org>

Streetcar Comments

1 message

ERIC TOOLEY <erictooley1@me.com> Thu, Jan 24, 2013 at 11:12 AM
To: jim.doty@lacity.org

Hi Jim,

I support the Los Angeles Streetcar 100% and can't wait to ride it - if all goes well. I prefer the LPA alternative as it has the most conections to the Metro Red and Blue lines. Please buld it like yesterday.

Eric Tooley
4637 Maltman Ave.
LA CA 90026

Jim Doty <jim.doty@lacity.org>

Streetcar

1 message

Dan Wentzel <ridethepinkline@yahoo.com> Mon, Feb 11, 2013 at 3:03 PM
Reply-To: Dan Wentzel <ridethepinkline@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Dear Mr. Doty,

I am excited about the return of streetcars to downtown.

I have one comment. I believe 7th Street needs to be double tracked in each direction between Hope and Broadway as indicated on the attached map.

This would allow for three routes of this one-way streetcar

1) Full alignment loop
2) Top half-loop between Bunker Hill and 7th Street via Broadway/Hill
3) Bottom half-loop between 7th, 11th, Broadway and Figueroa

With this one tiny addition on 7th Street, if there is an accident or emergency that obstructs the streetcar tracks, the other half of the system can continue to win without shutting down the whole system.

I have written about this suggestion in the my public transit blog, ridethepinkline.blogspot.com

Thank you for your consideration of this matter.

Best regards,

Dan

DowntownStreetcarupgrade.jpg
83K

Streetcar & Million Dollar, Los Angeles, State and United Artists Theatres

Hillsman Wright <hillsman@lahtf.org> Sun, Jan 20, 2013 at 10:43 AM
To: jim.doty@lacity.org

I am a strong supporter of the streetcar. It will be transformational for Broadway. However, I am concerned about the impacts the current Southbound curb alignment will have on the Million Dollar, Los Angeles, State and United Artists Theatres. Along with the streetcar, revitalization of the Broadway theatres is a linchpin for re-activating and attracting new investment to the street. Live entertainment is the best and most economically viable method of making these theatres – and Broadway – entertainment and tourism destinations. On a typical night in the not too distant future, all four theatres may host live events with starting times around 8pm. These events will generate a considerable amount of automobile traffic dropping off patrons at the front doors of these theatres. The same will occur as the shows end. The volume of this traffic will increase dramatically during inclement weather. How will the line-ups of automobiles be managed given the need for clear passage by the streetcar along the shared right of way? It is reasonable to assume that many theatre patrons will use the streetcar for transport to and from the theatres. However, sold out performances at these four theatres will attract up to 7500 patrons, which far exceeds the proposed capacity of the streetcar. When theatregoers from the Orpheum, Tower, Morosco(Globe) are added, there is the potential for an additional 5500 people to be added to the mix. In the past, when the Broadway theatres were consistently drawing more than 13,000 patrons at a time, the two-way center alignment for the streetcars handled the large crowds and also the automobile traffic generated by the theatres. Given the preliminary planning and funds projected to be available for the Broadway streetcar, there may be no other alternative than the less expensive curbside alignment. There may be other methods of mitigating traffic and the needs of the theatres while accommodating the streetcar. Consideration and planning for the likely conditions described above are better addressed now than as an afterthought after the streetcar is operating.

Hillsman Wright

PO BOX 79172

Los Angeles, CA 90079-0172

310 403-0865

Jim Doty <jim.doty@lacity.org>

LA Streetcar environmental impact

1 message

donald.zucker@us.pwc.com <donald.zucker@us.pwc.com> Mon, Feb 4, 2013 at 9:55 AM
To: jim.doty@lacity.org

Dear Mr Doty,

I am opposed to the plan to have the streetcar route going west on 11th. Between Grand and Hope on 11th is the automobile entrance and exit for Luma and Elleven, two large residential buildings. It is already difficult enough to exit the building given the existing traffic on 11th St., The introduction of the streetcar will cause increased accidents given the limited visibility at the exit. In addition the noise and vibration impact is a major concern. It is not only the noise and impact of the streetcar itself, but the noise of the passengers in the evening after visiting bars that will significantly increase the noise level in the neighborhood when many of the residents are trying to sleep.

In addition, I am opposed to the possible location of the maintenance yard near 11th and Grand. I am a condo owner in one of the nearby condominiums. There are 4 large residential condominiums containing well over 500 units, and such maintenance facility will be an eyesore impacting the visual quality of the neighborhood, increase noise and vibrations, involve the use of hazardous materials near what has become one of downtown's premier residential locations and thus reduce the residential owners property values, which will also result in a loss of revenue to the city.

Please inform me who has been hired to conduct the environmental impact study, and how interested residents can contact them directly so that our concerns can be directly expressed to those responsible for conducting the environmental impact study.

Regards,
Donald M. Zucker
1100 S Hope St, #616
Los Angeles, CA 90015

Potential Impacts

From:	Jim Doty
To:	Ara Kasparian; Franco, Paulette; Chivaratanond, Susan; James Lefton
Subject:	Fwd: Streetcar EIR scoping comment
Date:	Monday, January 14, 2013 8:07:31 AM

---------- Forwarded message ----------
From: **Mark Bisaha** <markbisaha@mac.com>
Date: Fri, Jan 11, 2013 at 9:07 PM
Subject: Streetcar EIR scoping comment
To: jim.doty@lacity.org

Mr Doty: As I'm sure you're aware, there's a great deal of effort underway to bring back the Broadway theaters. Owners, advocacy groups and city council staff are all involved. No one yet knows how things will turn out, or the purposes that each theater will take on (movies, performing arts, restaurant/entertainment, etc), so it's important not to preclude any options.

In that context, the streetcar scoping project should include looking at impacts to possible theater operations. For example, if a theater wants to host a red-carpet function, it would likely involve lots of curbside ingress/egress of VIPs and/or a valet stand. How will streetcar infrastructure and operation work around those needs? Could the streetcar operate while allowing a collection of limousines to drop off a number of dignitaries/celebrities? As another example, some of the houses don't have alley access, so shows have to load from the street. Can streetcar operation coexist with the needs of a production (or a band, or a performer, or...) to load/unload from the street?

The streetcar can help revivify the theaters, just as the theaters can generate ridership for the streetcar. The key is to maintain operational flexibility for both. How to do that is a worthy subject for the EIR.

Kind regards,

Mark Bisaha

--
Jim Doty, Manager
Environmental Management Group
Public Works Engineering
1149 S Broadway Ste 601
Los Angeles, CA 90015
213-485-5759

416 S. Spring St.
Apt. 1010
Los Angeles, CA 90013

January 29, 2013

City of Los Angeles Department of Public Works, BOE
Attn: Jim Doty
1149 S Broadway, Suite 600
Los Angeles, CA 90015-2213

RE: Scoping Comment on the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA

Dear Mr. Doty:

I was unable to attend the public scoping meetings, but, as a downtown resident in "Zone 2" of the project area, I would like to make two comments about the Historic Streetcar EIR/EA:

First, I urge the City and Metro to consider impacts to existing bus routes on the streets that the streetcar would serve, and—more importantly—to consider ways in which bus transit service could be improved as a result of the project. As you know, Broadway and Hill are heavily used bus corridors and are important for travel to/from downtown. My hope is that, rather than displacing buses, the streetcar project would feature "symbiotic" improvements that would also benefit Metro and other bus transit services. Such improvements could include traffic signal preemption/priority for transit, exclusive lanes, streetcar/bus bulbouts, improved streetcar/bus stops, and wayfinding signage at streetcar stops showing connections to other transit services.

Second, I urge the City and Metro to study the visual impacts associated with the project and to strongly consider at least one of several streetcar technologies that would eliminate the need for overhead wires, such as Alstom's APS, Anasaldo's TramWave, or Siemens' PRIMOVE systems, which use various methods of safely embedding the power supply in the ground. My understanding is that these technologies have been used in the sensitive centers of many European cities, and that they have the added benefit of lower utility and maintenance costs.

Thank you for considering my comments, and I look forward to seeing the EIR/EA.

Sincerely,

John Gahbauer

Downtown Los Angeles Streetcar NOP Comments

Stewart Chesler <trailsearcher5@gmail.com> Wed, Feb 6, 2013 at 8:12 PM
To: jim.doty@lacity.org

Dear City of Los Angeles,

When preparing the environmental clearance documents for the Downtown LA Streetcar project, please examine the potential impact it will have to bus operations. I'm concerned that the project as currently configured will significantly add to the congestion which will slow down bus service and vehicle movement in general. I'm particularly concerned about Hill Street since it is one of the most heavily used streets for buses and is schedule to to get even more bus lines due to the shrinking the number of southbound travel lanes on Broadway to one. Considering the City ongoing financial situation, I also concerned as to how it going pay for streetcar operations.

Sincerely;

Pablo Garcia
North Hollywood, CA 91601

LA GEECS

Jim Doty <jim.doty@lacity.org>

Attn: Downtown LA Streetcar

1 message

kenneth hui <huikenneth9@gmail.com> Mon, Jan 28, 2013 at 9:22 PM
To: jim.doty@lacity.org

Dear Department of Public Works,

The following are comments based from the public environmental impact hearing for the Downtown LA Streetcar.

I am concerned with the effect the planned streetcar will have on the character and atmosphere of the Downtown Los Angeles. Any project in the area must preserve the historic character of the area or it really will not be any kind of 'restoration'; in light of this I believe the train used must be historic instead of the ugly white and green modern car that was on all the pamphlets/webpage. You can reference San Francisco's historic streetcar page for better streetcars http://www.streetcar.org/streetcars/189/.

Currently there is a mystique that comes with historical significant and this has resulted in a slew of artsy and small businesses taking root. If a modern streetcar (like those in Seattle) is used the character of the area will be spoiled and set a tone for the developments/shop in the area; which may lead to slower development and dilution of downtown's character.

I am also concerned with the length of the streetcar as it will block up traffic on all the turns it makes, not to mention from its frequent stopping on every street. I believe that a smaller streetcar (see the link above) may mitigate the turning issue and may reduce incidents of hitting pedestrians.

Thank you for your time.

-Kenneth

Jim Doty <jim.doty@lacity.org>

Downtown LA Streetcar Draft EIR Comments

1 message

Jodie Mendelson <jodieannemendelson@gmail.com> **Tue, Jan 29, 2013 at 11:59 AM**
To: jim.doty@lacity.org

Hi Jim,
Thank you for considering the issues below during the draft EIR process.

- Transportation/Traffic - The street car may be unnecessarily redundant with other similar forms of public such as the proposed Regional Connector, Red and Purple lines, and Metro buses 2, 4, 10, 28, 30, 40, 45, 81, 83, 84, 90, 91, 94, 302, 330, 728, 745, and 794.
- Aesthetics/Visual Quality - This street car's extensive infrastructure (service yard, power substations, and overhead wiring) may further diminish visual quality and enjoyment of the area's architecturally significant buildings.
- Historic Resources - The route will complicate future historic renovation efforts by limiting the available of construction staging space in front of the buildings.
- Environmental Justice - Inequity may be experienced by lower income riders if a notably higher fare is charged for the street car compared to other similar public transit options.

Regards,
Jodie Mendelson

Jim Doty <jim.doty@lacity.org>

Comments on Street Car EIR

1 message

Rick Rodriguez <ricky@rodriguezadvisory.com> Mon, Feb 4, 2013 at 9:36 AM
To: jim.doty@lacity.org

Hello Jim,

With respect to the segments of the street car along Hill and Broadway that pass by Grand Park, I would suggest a study on the impact this will have. Specifically, there may be a pedestrian safety issue as well as an aesthetic issue as the Street car will further break up the park. A mitigating measure would be the possibility of two wide and landscaped pedestrian bridges that connect the various segments of the park. I ask that the commission please consider the addition of pedestrian bridges in Grand Park as part of the Street Car development.

Best Regards,

Ricky Rodriguez

Rodriguez & Associates

t.213.617.1163

f.213.617.3780

c.213.840.4758

www.rodriguezadvisory.com

Jim Doty <jim.doty@lacity.org>

downtown street car project

1 message

Justin Singh <justin.singh@gmail.com> Mon, Jan 28, 2013 at 1:53 PM
To: jim.doty@lacity.org

Mr. Doty,
I strongly oppose the downtown the downtown streetcar project for the following reasons:

1. Transportation/Traffic - This project will add additional over-sized vehicles to narrow Downtown streets and further worsen already-existing poor traffic conditions.

2. Air quality - The additional traffic created by this project will worsen Downtown air quality because of additional exhaust caused by increased idling of cars in traffic on Downtown streets.

3. Aesthetics/Visual Quality - This project will be built in an area with many historic buildings and the infrastructure required for the streetcar (including the service yard, the power substations and the overhead wiring) will interfere with the views of the historic buildings and will decrease enjoyment of these historic resources.

4. Noise - This project will add additional noise in the project area late in to each night (according to the proposed service schedule).

5. Safety - Downtown is already an area with significant pedestrian traffic. Streetcars making turns at intersections will create dangerous conditions for pedestrians.

6. Construction Impacts - The construction will significantly contribute negative impacts of noise, traffic and worsened air quality.

7. Historic resources - The street route will interfere with the future restoration of many historic buildings in Downtown by preventing of the use of space in front of buildings for construction staging.

Furthermore, a proposed location of the streetcar storage/operations facility near the corner of 12th / Grand is highly inappropriate. That area is becoming a residential area with an influx of new residents. Such a facility there would disturb the area and would lead to a decline in property values in the Southpark area.

Thank you,
Justin Singh

Jim Doty <jim.doty@lacity.org>

330 W 11th St Parking Lot

1 message

John Anav <johnanav26@gmail.com> **Mon, Feb 11, 2013 at 3:29 PM**
To: jim.doty@lacity.org
Cc: richard@grandlofts.com

Hi Jim,

My name is Jonathan Anav and I live at the Grand Lofts on the corner of 11th and Grand. It was brought to my attention that you are looking to build a maintenance facility on the lot that is our current parking lot.

I feel that this is a horrible idea if not for the sole fact that you have million dollar condos right across the street from this lot and of course our building is adjacent to this lot. This will drive property values DOWN and hurt the residents that support Downtown LA by buying units and living here.

This would be a bad move and it would be much better served to have this maintenance facility a block or two down where there has been no development.

Feel free to contact me at anytime with any questions.

Thank you,

Jonathan Anav
310-614-9225

Proposed maintenance facility location

Baptista, Braulio <braulio.baptista@zgf.com> Mon, Feb 11, 2013 at 9:34 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Dear Mr. Doty,

I am a owner resident of Grand Lofts at 330 W 11th Street. Thank you in advance for your attention to this email. I'm writing to express my vehement disapproval of the proposed location of the streetcar maintenance facility on the parking lot south of our building.

That parking lot property is under an agreement to provide vehicle parking for residents of Grand Lofts. Displacing that function would cause severe undue hardship to our building's residents.

While I have been a strong supporter of the streetcar project, the maintenance facility's proposed location, in the middle of an up and coming downtown neighborhood, will seriously undermine the future of retail activity and the local pedestrian network.

I want to see the streetcar project go forward. However, please consider an alternate location for the maintenance facility.

Respectfully,

Braulio Baptista

RYI regarding the passing of the railway repair station

1 message

BARRETT, PATRICIA A <pb4615@att.com> Mon, Feb 4, 2013 at 10:55 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Dear Jim:
I live in the EVO Building in South park and I was asked to take a survey to approve or dis approve of the rail yard in my neighborhood, and below is my response.. I would like you to take this into consideration, and if you should have any questions please contact me...

I am glad to be a part of downtown Los Angeles and a resident of the City of Los Angeles.

RESPONSE to SURVEY GIVEN TO EVO RESIDENSES to Approve or Disapprove of the rail yard on 11th and 12th Street: (For your consideration)

I approve of the rail yard in our neighborhood.. Because what I see from what the city is doing they will make it look really nice , compatible with the neighborhood , and I am sure they will consider the noise because we are a residential area. I am sure they will make the rail yard look nicer than our building. The flowers are not maintained in the front of our building (as many parts outside and inside our building are not maintained) and many times it smells like pea outside. So with that how can you ask the residences to have an option of disapproval of this location for the rail yard, I have written Jim Doty the same thing, and will again. I think EVO HOA needs to look at how our building is being maintained before asking us not to approve this location for the rail yard.. The city has a proven record of making things look nice and well maintained throughout the city,, and EVO Board Members and Management cannot maintain and do not keep up our building on the outside and the inside.

PAT

Best Regards,
Pat A. Barrett
Sr. Account Manager
Government/Education Client Group
AT&T ~ Rethink Possible...
Cell: 213-422-4539
Office ~ 213.743.6944
Email: pb4615@att.com

.

Best Regards,

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT

1 message

Brian Bartholomew <bdbaia@aol.com> Mon, Feb 11, 2013 at 4:06 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

February 11, 2013

City of Los Angeles, Department of Public Works
Bureau of Engineering, EMG
Attention: Jim Doty
1149 S. Broadway, Suite 600
Los Angeles, CA 90015-2213

Mr. Doty:

As the owner of a condominium in the Grand Lofts at 330 West 11th Street in downtown Los Angeles, I am strongly opposed to locating a maintenance yard at 11th and Grand as shown on pages 6 and 7 of the NOP for the Draft Environmental Impact Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles. Parking for Grand Lofts residents is located on a part of this location and is part of the value of my property. While I support the restoration of street cars in downtown, I do not support a maintenance yard in my back yard.

Sincerely,

Brian D. Bartholomew AIA
330 West 11th Street #501
Los Angeles, CA 90015
Telephone: 323-221-7007

Jim Doty <jim.doty@lacity.org>

Rail project

1 message

Warren <warrenbellagency@yahoo.com> Mon, Feb 11, 2013 at 4:54 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: Warren Bell <warrenbellagency@yahoo.com>

Mr Jim Doty,

I am opposed to the proposed location for the maintenance rail yard for the new streetcar system being across the street from my business and home at 1111 South Grand Ave La 90015.

Your proposed location would be located in the two parking lots between 11th St. and 12th St. on Grand Av

I am very upset about this as it would cause traffic noise pollution in my Residential community and noise for my business.

I think it is insensitive to the community that is investing in the revitalization of Downtown. I am voicing my opposition and I will remain committed to seeing this project stopped!

If this project is approved I will move my business from Downtown and go back to the westside.

Warren Bell
1111 South Grand Ave suite 102
Los Angeles Ca 90015

Sent from my iPhone

LA GEECS

Jim Doty <jim.doty@lacity.org>

Proposed maintenance rail yard at 11th & Grand Ave.

1 message

robbberke@aol.com <robbberke@aol.com> Mon, Feb 11, 2013 at 5:23 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Mr. Doty,

It has come to my attention the City of Los Angeles is entertaining the idea of placing a maintenance rail yard for the new Streetcar system in the parking lot where the Grand Loft residents park.

I cannot possibly express how deeply concerned I am about losing this lot for all of the residents in our building. I am one of the owners who has been part of the building since it opened as the Grand Lofts seven years ago. This lot was promised as the parking lot location to the occupants back then and has proven to be the most convenient and secure location. Taking this away would greatly impact the residents in the most inconvenient manner, especially considering the challenged parking situation the City already has.

Please consider alternative sights that don't impact residents who live in the City, as we would hate to give residents a reason to move to another city.

Thank you for your serious consideration regarding this matter and please call me if you have any questions and/or concerns.

Respectfully,

Robb Berke

Grand Lofts
330 W. 11th Street, Unit 708
Los Angeles, CA 90015

Jim Doty <jim.doty@lacity.org>

Streetcar EIR

1 message

Scott Bytof <scottbytof@ca.rr.com> Mon, Feb 11, 2013 at 8:10 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Mr Doty,

I am a seven year resident owner in the Grand Lofts at 330 W 11th St.

Our building is located along the 11th St track route, and is also adjacent to the potential South Park maintenance facility location.

As part of our Grand Lofts purchase agreement, the current developer EVOQ and their predecessor are obligated to provide a permanent parking structure with at least 132 spaces. This structure is four and a half years behind schedule, and we are currently using 1150 S Grand Ave for temporary parking.

I support the mission of the Streetcar, but strongly request that the neighborhood be included in the discussion of the maintenance facility as well as stops along 11th Street.

If South Park is chosen as the location for the maintenance facility, hopefully we will be able to seize the opportunity to incorporate our parking commitment, neighborhood serving retail along Grand Avenue, and possibly even public park space like tennis courts on the roof.

The Streetcar is a unique instance where the neighborhood has chosen to fund an amenity that will benefit the entire city and its visitors. As a result, extra effort should be made to include the neighborhood in the planning process to insure a truly fantastic result.

Scott Bytof
330 W 11th St #309
310-849-3203

Sent from my iPhone

Streetcar input

Mimi Chao <mchao06@gmail.com> Wed, Feb 6, 2013 at 4:16 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "flanglois@actionlife.com" <flanglois@actionlife.com>

Hi,

I own a unit at Luma facing 11th street. I am very excited about the streetcar and what it could mean for downtown LA. I only have two comments right now: (1) Please do not put a stop right at the 11th and hope intersection. There was a marathon recently that had its goal line here, and I realized how disruptive the noise can be. Up near Palm restaurant is better (also don't think one stop per block is necessary). (2) I don't think the streetcar maintenance facility belongs next to Elleven. That property is prime real estate for more retail and residential. A maintenance yard wouldn't make any sense. I think it makes more sense between 2nd and 3rd, closer to the government buildings.

Please let me know what you think. Best wishes on the streetcar.

Mimi Chao

Jim Doty <jim.doty@lacity.org>

rail maintenance and storage facility

1 message

Kai chin <kaichin@yahoo.com> Mon, Feb 11, 2013 at 4:28 PM
Reply-To: Kai chin <kaichin@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Dear Mr. Doty,

Just want to voice my opposition, as a condo owner in South Park, concerning the possibility of putting in the rail maintenance and storage facility on 11th and 12th street. This area becoming more and more heavily residential and to put such a facility in the area will stymie our growth as a neighborhood.

Furthermore, with the possibility of noise and other disturbances from the facility, it will significantly decrease our quality of life. Please reconsider the possibility of this action and put the maintenance facility in a more appropriately commercial/industrial area of the city. Thank you for your time.

Kai Chin

Streetcar Project: Proposed Maintenance Facility on 11th / Grand

1 message

uscguy539 <uscguy539@yahoo.com> Mon, Feb 4, 2013 at 10:50 AM
Reply-To: uscguy539 <uscguy539@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Hello Mr. Doty,

I am a resident of Downtown LA and have been living in the South Park area (Luma building) for the past 5 years. I am supportive of the streetcar initiative, but am writing to express my objection to the proposed 30,500-square-foot maintenance facility site at the southeast corner of 11th Street and Grand Avenue. I do not feel it is the appropriate area for such a facility as it would severely damage the quality of life for residents in that area due to the excess noise and other potential pollutants. It is my hope that one of the other 2 proposed sites are chosen.

Please advise what options residents have to oppose this option.

Thank you,
Mr. Zach Cohen

Opposition to Maintenance Rail Yard on Grand Lofts' Parking

1 message

Ana Dahan <anateresa25@me.com> Mon, Feb 11, 2013 at 3:01 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Mr. Doty,

As a resident of the Grand Lofts, I am writing to express my opposition to placing a maintenance rail yard on our parking lot. I have been very supportive of Streetcar, and have attended several of the events promoting the Streetcar. If I was aware of your maintenance rail yard proposal earlier, I would have been initially opposed to the Streetcar as I now have become. I hope your office will reconsider this decision. Our residential community will not support a maintenance rail yard in our neighborhood and by consequence, the Streetcar.

Thank you in advance for your prompt resolution to this matter.

Sincerely,
Ana Teresa Dahan
330 West 11th Unit 604
LA, CA 90015
(323) 351-4370

Jim Doty <jim.doty@lacity.org>

proposal Rail yard

1 message

Jerome Davis <jdavislc@gmail.com> Sat, Feb 9, 2013 at 7:17 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Jim,

A rail yard is not something that we want at Grand lofts. Our parking situation at Grand Lofts has been such a disappointment because of the lack of consideration of the residents.. My family and I have been here for 8years and we plan on staying, but Please reconsider this move and think about all those effected..

Regards,

Jerome Davis
Fitness Consultant/ Transformation Specialist
310.721.4292

--

www.runwithjerome.com

Jim Doty <jim.doty@lacity.org>

Re: proposal Rail yard

1 message

Christy <christydavis73@yahoo.com> Sat, Feb 9, 2013 at 8:01 PM
To: Jerome Davis <jdavislc@gmail.com>
Cc: "jim.doty@lacity.org" <jim.doty@lacity.org>, "board@grandlofts.com" <board@grandlofts.com>

As a resident at Grand Lofts with 3 kids, I too DO NOT want a rail yard at 11th & grand. I am concerned about the potential health hazards as well as the noise it may cause. Please reconsider this site.
Kind Regards ,
Christy Davis & Joaquin Cornejo
Unit 605 Grand Lofts

Sent from my iPhone

On Feb 9, 2013, at 7:17 PM, Jerome Davis <jdavislc@gmail.com> wrote:

> Jim,
>
> A rail yard is not something that we want at Grand lofts. Our parking situation at Grand Lofts has been such a disappointment because of the lack of consideration of the residents.. My family and I have been here for 8years and we plan on staying, but Please reconsider this move and think about all those effected..
>
> Regards,
>
> Jerome Davis
> Fitness Consultant/ Transformation Specialist
> 310.721.4292
>
> --
>
> RUN WITH JEROME
>
> www.runwithjerome.com

NO to streetcar rail yard on 11th and Grand

Setta El Dabe <sseldabe@gmail.com> Sun, Feb 10, 2013 at 7:55 AM
To: jim.doty@lacity.org
Cc: board@grandlofts.com, Edmond El Dabe <eldabe@gmail.com>

Hello Jim,
I am a resident of Grand Lofts located on the corner of 11th and Grand. It is my understanding that you are considering the south east corner of 11th and Grand Avenue as a potential location for the new street car rail yard.

I am writing to ask you to please consider another location. While I am an ardent supporter and voted yes for the street car i do not think the street car rail yard located next to our building is a good idea. Our building is full of families with children including my 2.5 year old son and we would like to keep the surrounding area as free as we can of any potential/future hazards. Also, we currently park our cars in that gated lot and really do not want to lose it as we feel it is safe for us and our families.

Thank you for your consideration

Setta & Sherif El Dabe
Grand Lofts resident, Unit #701

Jim Doty <jim.doty@lacity.org>

Re: 'Streetcar' Maintenance Yard proposed location at South East corner of 11th / Grand Ave

1 message

Sang Fang <sangfang@hotmail.com> Mon, Feb 11, 2013 at 6:39 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Dear Mr. Jim Doty,

It has been brought to my attention that the proposed 'historic streetcar' project for downtown Los Angeles is currently evaluating potential sites for their maintenance yard and one location under consideration is the south east corner lot on 11th and Grand Ave, or better known as the current parking lot for Grand Loft tenants.

First and foremost, I want to express my support of the 'streetcar' project. I think it's a great idea and it would be wonderful to have a more efficient and streamline form of transportation throughout the downtown Los Angeles neighborhoods. However, after learning our parking lot was a potential site for the maintenance yard, I began to have reservations.

I will spare you the details of all the parking changes the Grand Loft owners have had to endure over the years, but the simple truth is that our current parking arrangement is the safest location available to us. **It is connected directly to our building which allows us to quickly exit our vehicles and enter our building safely**. There is no other location around our building that can offer that same sense of security as we have now with our current parking situation.

If that were taken away from me, the various individuals and families that live at Grand Lofts, then I would argue that many of us would consider seeking housing elsewhere were a more secured environment was available to us. Even with all the luxury condos, LA Live and other establishments near in around Grand lofts/South Park, this area is still undergoing 'change' in many ways. With that comes, car thefts, muggings, harassment from homeless people and many other situations where our security may be threatened.

With that said, I kindly urge you to reconsider the options for the maintenance yard location. There must be a different solution that would be satisfactory for all parties involved. Safety first!

Thanks for your time,

Sang Fang & Leila Kwong

Grand Lofts #508 (owners)

Maintenance facility

Oliver Finkelde <mail@elasticunit.com> Mon, Feb 11, 2013 at 5:23 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: Pami Pami ☐ <karmen.shehata@gmail.com>

Dear Mr Doty,

We live in the Grand Lofts building and heard that there might be plans to build a maintenance facility next to our building.

I have lived next to such a facility and sure hope that I don't have to do that again. The noise during the day and night can be unbearable, especially with kids.

Thank you,

Oliver Finkelde

—
mobileOlee

Jim Doty <jim.doty@lacity.org>

LA Streetcar maintenance yard

1 message

Dennis W Fried <dfried@friedlegal.com> Mon, Feb 11, 2013 at 1:56 PM
To: jim.doty@lacity.org

Dear Mr. Doty,

I am writing to you as a resident of South Park regarding the proposed option of using the lots on Grand Avenue between 11^{th} and 12^{th} streets and a corner of 11^{th} and Olive for the maintenance yards for the new LA Streetcar. I am also a member of the Elleven HOA Board of Directors and have served on that Board as President, Treasurer and Secretary for 7 years since the building was first new. My comments are personal, although I have spoken to many residents in my building and we are all in agreement that a maintenance yard in a residential area is highly objectionable. Elleven, Luma and Evo represent more than 700 housing units and thousands of residents. The lofts across from Elleven, which are adjacent to the proposed maintenance yard, represent many more homeowners. Our neighborhood is full of families, including children and pets that would be harmed from the noise, dust pollution and general negative connotation that a maintenance yard would bring to our area. I urge you to do everything necessary to avoid placing this yard across from our home; doing so can only result in many residents leaving the area and the inevitable decline in property values that a maintenance facility would bring to our neighborhood.

I welcome your comments.

Sincerely,

Dennis W. Fried, J.D., M.B.A.

Law Offices of Dennis W. Fried

Encino Executive Plaza, Suite 610

16501 Ventura Boulevard

Encino, CA 91436-2067

818-461-0211 Work

818-377-7910 Fax

818-522-4999 Mobile

dfried@friedlegal.com

Maintenance and Storage Facility Location Options for the Los Angeles Streetcar

Al Grossman/Linda Cordeiro <plima@earthlink.net>
Reply-To: Al Grossman/Linda Cordeiro <plima@earthlink.net>
To: jim.doty@lacity.org

Wed, Jan 30, 2013 at 6:40 PM

Dear Mr. Doty -

We have serious concerns regarding the City's option to place a streetcar maintenance and storage facility (the "facility") between Hill and Broadway, just south of Second Street.

We reside at the Pan American Lofts (Third and Broadway), which are owner-occupied condominiums on the same block as the proposed site, and we anticipate rail construction will bring both noise and air quality disturbances, including road work, traffic re-routing, dust, etc. – both in front (Broadway) and behind (Hill St.) our residence. Putting the facility on our block means we'll endure construction on three sides – and in the end be forced to endure having the facility beneath the windows of half of our building's owners.

Our reading of the Initial Study is that system construction alone will occur during a 14-hour window (7 a.m. to 9 p.m.), plus intersection construction will occur at night. Then, according to the Initial Study, the long-term plan is for streetcar operation on 18- and 22½- hour schedules, guaranteeing increased foot traffic and even more noise. A maintenance/storage facility with streetcars and workers pulling in and out at all hours only exacerbates the continual nuisance.

Also, streetcar construction may precede, follow, or be concurrent with the Federal Courthouse construction at Second and Broadway, compounding all these problems.

Further, consider that the Pan American must be historically preserved under the Mills Act, and any study of this site must take into account possible damage to our home, including the underground structure.

As homeowners, we are also concerned that all of this will degrade our home property values.

However, we hope it is already apparent this site is not the ideal location for other reasons.

Consider:

- The north end of Broadway is regularly closed to traffic for marches and street fairs – usually from Temple to Seventh. Does it make sense to put the facility where it will be blocked by foot traffic on Broadway?
- The site is near two heavily used tunnels at Second and Third. These are often closed for filming, creating traffic bottlenecks on Hill St., which then causes problems for the 1,300 senior citizen

residents of Angelus Plaza, which requires access for families, tour busses and emergency vehicles. Will the facility avoid blocking traffic on Hill St.?

- As mentioned, a federal courthouse will go up at Second and Broadway – a half-block away – bringing its own set of long-term pedestrian, automobile, and security issues.
- This location is between many residential units on Hill and Broadway (not just ours), a hotel, and nearby business, cultural and tourist areas, and the short-term parking lot on the site is used by people attending the courts, Disney Hall, the Music Center, museums, shops in the neighborhood, the historic core, etc. Broadway is being revitalized. It makes much more sense for the facility to be placed further away.
- Between Bunker Hill, the Los Angeles Times, Angels Flight, Grand Central Market, Angelus Plaza, the two parking structures adjacent the Second and the Third Street Tunnels, and Broadway, there already exists a great amount of daily pedestrian and automobile traffic. As stated, the streetcar and the courthouse will only increase both.

The City would be well-served to take into consideration the comfort of those who believed, invested in and revitalized its center. It should not degrade the hard won property values and disturb the peace by focusing too heavily and shortsightedly on catering to the restaurant and party crowd at the expense of those who live here. We support street car. But it would make much more sense for the City to place the facility in a location removed from a congested residential, commercial, business and tourist-dependent area.

Sincerely,

Al Grossman & Linda Cordeiro

Jim Doty <jim.doty@lacity.org>

South Park Maintenance Facility Project

1 message

Hillery, Teresa <Teresa.Hillery@fnf.com> Mon, Feb 11, 2013 at 9:50 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Dear Mr. Doty:

Thank you for the opportunity to express my comments regarding the South Park Maintenance Facility Project. I am a seven year resident owner in the Grand Lofts, located at 330 West 11th Street (corner of Grand Avenue and 11th Street). As part of our Grand Lofts purchase agreement, the current developer EVOQ and their predecessor are obligated to provide a permanent parking structure with at least 132 spaces. We are currently using the parking lot at 1150 S Grand Avenue, which is a potential site for the streetcar maintenance facility. I support the mission of the Streetcar; however, I have obvious concerns should 1150 S Grand Avenue serve as the site for the facility.

Will you please add my email address to any communication distribution list regarding this project? I would like to participate in the discussions, if South Park is the chosen site.

Sincerely,

Teresa Hillery

Teresa Y. Hillery, Esq.
FIDELITY NATIONAL LAW GROUP
A Division of Fidelity National Title Group, Inc.

AVP, Trial Counsel

915 Wilshire Boulevard, Suite 2100

Los Angeles, California 90017

Direct: 213-438-4409

Cell: 213-814-9416

Fax: 213-438-4417

Email: Teresa.Hillery@fnf.com

LA GEECS

Jim Doty <jim.doty@lacity.org>

Proposed maintenance rail yard for Streetcar system

1 message

Grace Hoon <grace.hoon@hotmail.com> Mon, Feb 11, 2013 at 6:04 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: board@grandlofts.com, Madrim <madrimmcgalliard@mac.com>, Mike McGalliard <mikemcgalliard@mac.com>, James Tran <tran411@gmail.com>, Greg Stangl <greg@prebrokerage.com>, "sseldabe@gmail.com" <sseldabe@gmail.com>

Dear Mr Doty,

I and my beloved dogs of The Grand Lofts do not and will not ever approve of your awful city planners/architects/ignorants to take away our God given rights to parking. You will be ruining many families and precious lives. Is that how the City of Los Angeles wants to build the newly beloved rail project?

Go pick on someone else.

Sincerely,
Resident and Opposer

Jim Doty <jim.doty@lacity.org>

Maintenance and Storage Facility on Grand Ave

1 message

holger@tekvilla.com <holger@tekvilla.com> Fri, Feb 1, 2013 at 8:34 AM
To: jim.doty@lacity.org

Jim,

I support the Downtown Streetcar, but I'm strongly against a Maintenance and Storage Facility on Grand Ave. between 11th and 12th.

This will not just be an eyesore, it will greatly depreciate the value of the three residential buildings Evo, Elleven and the building on the corner of 11th and Grand. In addition, it will remove the last big parking lot in this era with the construction of the new apartment buildings on Grand Ave. between 12th and Pico.

I hope you are able to use one of the other possible locations for the Maintenance and Storage Facility

Sincerely,

Holger Irmler

1155 S Grand Ave #520
Los Angeles, CA 90015

Jim Doty <jim.doty@lacity.org>

Streetscar system

1 message

Hyun Sang Joo <maestro.hsjoo@yahoo.com> Mon, Feb 11, 2013 at 11:39 AM
Reply-To: Hyun Sang Joo <maestro.hsjoo@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

I really want to make it clear
that you will NOT be able to build a maintenance facility on our parking lot.

Grand Loft
330 W. 11th St. #702
LA, CA 90015
Hyun S. Joo

11th & Grand Maintainence Facility

KSP <dambae@yahoo.com>
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Sun, Feb 10, 2013 at 1:01 AM

Jim,

I am against the city's proposal to build a maintenance & storage facility at 11th & Grand for the streetcar. This location is in the heart of residential neighborhood and is not an appropriate use of space.

I hope our city planners exercise good judgment & common sense and build the facility elsewhere.

Sincerely,

Grand Loft Resident

Streetcar Maintence Facility at 11th & Grand Ave

KSP <junkm4il@yahoo.com> Sun, Feb 10, 2013 at 1:15 AM
Reply-To: KSP <junkm4il@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Jim:

Why build a industrial streetcar garage in the middle of a residential neighborhood. The proposed facility is directly adjacent to densely populated residential tower. The proposed site at 11th and Grand is also in very close proximity to LA Live, and major school (FIDM), downtown Ralphs grocery, multiple apartment building, restaurants & retail stores, and the list goes on. The proposed sites at 11th and Grand are fully utilized as parking lots during events at the LA Convention Center and Staple Center. Have you forgotten so quickly that parking is a limited resource in downtown, especially in the South Park area, which is directly linked to LA Live?

I am a registered voter and a long-time resident of downtown Los Angeles. AND I AM SO ANGRY THAT 11TH & GRAND IS BEING CONSIDERED FOR THIS PURPOSE.

- Grand Loft Resident.

Jim Doty <jim.doty@lacity.org>

Question re: Draft EIR Streetcar

1 message

Lee, Daniel <Dan.Lee@arcadis-us.com> Fri, Feb 1, 2013 at 9:58 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Hi Jim,

I am a resident of the Grand Lofts located at the southeast corner of 11th Street and Grand Avenue and I am concerned about the proposed location of one of the "maintenance and storage facility" areas that is located along 11th Street (see attached PDF). I am certain that other residents in the Grand Lofts as well as neighbors across the street (EVO and Elleven lofts) aren't too thrilled about the proposed location.

There are few issues with the proposed location:

- As it is currently shown, it includes our building's parking area. Our parking lot is located directly south of our building along Grand Avenue (northern block). What will happen to our parking area?

- Along 11th Street, Grand Avenue and immediate vicinity is mostly residential developments as you can see in the attached PDF. It also sees the most amount of pedestrian traffic because of the many residents living in that area. There are commercial/industrial areas with open spaces (used as parking lots currently) east of Olive Street and west of Flower Street that seem to be far more logical place for a maintenance and storage facility. What were the reasons that these areas were not considered?

- I think the downtown residents, who are footing the Streetcar bill by paying additional property taxes, should have a say in where the maintenance and storage facilities should or should not be located. When the Streetcar measure was proposed, I do not recall that there was any mention of these maintenance and storage facilities. This is a big deal to the downtown residents and if this information was provided at the time of the ballot, I think many residents might have voted against it. Will there be community workshops or meetings where we can voice our concerns regarding the Project?

Thank you.

Daniel

Grand Lofts resident, #407

330 W 11th St #407

Los Angeles, CA 90015

NO to Proposed Streetcar Maintenance Rail Yard at 11th and Grand

Lourdes Leger <lourdesleger@yahoo.com>
Reply-To: Lourdes Leger <lourdesleger@yahoo.com>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Sun, Feb 10, 2013 at 3:23 PM

Dear Mr. Doty,

My husband and I have been residents of Grand Lofts since 2008. We have been supporters of the new streetcar system in downtown Los Angeles. I am writing to express our concerns and opinions in regards to the city considering our residential parking lot, at 11th and Grand, as one of three proposed areas for the maintenance rail yard.

1) Our residential building, Grand Lofts, is across from two other residential buildings here on Grand Avenue in the South Park area. These are our homes. We have families with children and pets in these buildings. A streetcar maintenance rail yard in an area directly next to, and across from residential buildings would increase the noise, traffic, and danger to children and pets that live in these homes.

2) In addition, those of us that enjoy living downtown do walk and take public transportation whenever possible, however, we still need to use our cars. Our building does not have underground parking like some other residential buildings in the area. Because it is adjacent to our building, and fenced, it provides a safe area for our families to access their vehicles, day and night. We need that parking lot exactly where it is, for the safety and convenience of our residents. It is the only one we have.

For the reasons stated above, and others not listed, my husband and I are among those who do not want our residential parking lot at 11th and Grand to be considered as a location for the streetcar maintenance rail yard.

Thank you,
Lourdes and George Leger

LA Street Car Rail Yard Project at 11th and Grand No!

Lisa Maki <lmaki@lisamaki.net> Mon, Feb 11, 2013 at 4:13 PM
To: jim.doty@lacity.org

Hello: My office is below and we have another place at 11th and Grand across the street.

We are opposed to this project. If the city wants to improve this area, putting a rail yard in it is contrary to that notion.

There are other locations south/east of this area.

I hope you will consider our strong opposition.

Not to mention the environmental impact/noise-vibrations-dirt in our residential community.

Thank you.

Lisa L. Maki

Law Offices of Lisa L. Maki

1111 South Grand Avenue, Suite 101

Los Angeles, CA 90015

phone 213.745.9511 fax 213.745.9611 lmaki@lisamaki.net

Jim Doty <jim.doty@lacity.org>

Streetcar Maintenance Yard

1 message

Nabil Nathie <nnathie@gmail.com> Mon, Feb 11, 2013 at 6:29 PM
To: jim.doty@lacity.org

I would have sent this email sooner, but my building just sent an email out today notifying us about the proposed maintenance yards that will be across from our building at Elleven Lofts.

1. How long will these be "maintenance yards" for, and 2. What are local residents supposed to do about parking for themselves and their guests? When events are going on at LA Live those parking lots provide us with very necessary additional parking. Being forced to park at farther lots leave the females in our household very vulnerable at night time walking to and from their vehicles. It's bad enough that the city preys on us with parking tickets, now they want to take away our parking lots?

Disapprove.

Jim Doty <jim.doty@lacity.org>

Streetcar system rail yard

1 message

Rebecca Netzel <rebeccanetzel@gmail.com> Mon, Feb 11, 2013 at 3:49 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com, Mark Grueninger <mjgrueninger@gmail.com>

Dear Mr. Doty,

My husband and I currently live in the Grand Lofts located at 330 W. 11th, Street, #401, Los Angeles, CA 90015. We love living downtown with the nightlife, L.A. Live, the new restaurants and most importantly many activities that our new daughter who is 3 months will enjoy. We are currently in the process of expanding our loft so that we may live here comfortably for many years to come. We are here to stay for a very long time. However, we have heard that the city is considering putting the maintenance rail yard in our current parking lot on 11th and Grand Avenue. This would definitely hinder our long term plans and be of much inconvenience to our current living situation. With children, convenience and location is key.
On that note, while I support the Streetcar, please reconsider the location of the rail yard. I would like to be a resident and owner of Grand Lofts for a very long time.

Thank you in advance for your time.

Sincerely,
Rebecca Netzel & Mark Grueninger
Grand Lofts #401 & #402

Jim Doty <jim.doty@lacity.org>

Fw: LA Streetcar Rail Yard ~ Last Day for Your Feedback!!

1 message

Sergio <sergioo1@sbcglobal.net> Mon, Feb 11, 2013 at 6:47 PM
Reply-To: Sergio <sergioo1@sbcglobal.net>
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: Sergio <sergioo1@sbcglobal.net>

Hi -

as a current home owner and resident of south park I'm opposed to the proposition to place a storage facility near my property, there are other location in the area that you can use, this is a prime housing location.

Thanks

Sergio Oseida

----- Forwarded Message -----
From: Elleven Notifications <EllevenNotifications@actionlife.com>
To:
Sent: Monday, February 11, 2013 4:05 PM
Subject: LA Streetcar Rail Yard ~ Last Day for Your Feedback!!

Mass eMailer

Dear Elleven Residents and Homeowners,

The City is considering placing the maintenance rail yard for the new streetcar system across the street from Elleven. This would be located in the two parking lots between 11th St. and 12th St. on Grand Ave. and also the parking lot on Olive St. and 11th St. on the South West corner.

Please copy and paste the below link to view the presentation documents for this project.

http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf .

The map citing the location of the proposed maintenance facility is located on pages 6 & 7.

The deadline for your responses to the CEQA Study is today, February 11, 2013. All responses should be addressed to Jim Doty at jim.doty@lacity.org

---

If you need assistance, please feel free to contact us at CommunityCare@actionlife.com or call us at **(800) 400-2284**.

Maintenance Rail Yard for the Streetcar System

Michael Park <dambae@gmail.com> Sun, Feb 10, 2013 at 12:52 AM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Jim Doty:

I recently learned that the city is planning to place the Maintenance & Storage yard for the approved streetcar system on the south east corner of 11th and Grand Ave. Yet another example of an extremely poor judgement by the city planners. I am amazed at how a great city like Los Angeles is consistently plagued by bad judgment after another by our esteemed city planners.

Proposed site is located directly in South Park, which currently has a vibrant real estate market and is one of the premier neighborhoods that is driving the revitalization in Downtown Los Angeles. The residents of South Park are the base consumer of the surrounding businesses and amenities, including LA Live, and your proposal to make South Park less appealing will have a direct consequence to the local economy. It is reasonable to expect from our city planners to be advocates in creating a clean and safe environment for its residences, to promote the local economy, and to improve property values. This proposal will have a completely opposite effect.

The proposed site is located in a residential neighborhood occupied by families, students, and young professions. These are the demographics that many surrounding cities are competing to attract and your plan is to create a Maintenance & Storage facility in the heart of the most premier downtown neighborhood. Why? Your plan will have a negative impact on the city's ability to generate income from property tax, sales tax, business licenses, permits, etc.

I am strongly against the thought of utilizing 11th & Grand Ave as a Maintenance Yard for LA's streetcar.

- South Park Resident and Registered Voter

--
Michael Park
213-435-5569 (mobile)
888-757-2573 (fax)
dambae@gmail.com

11th & Grand Streetcar Maintenance Facility

K Park <oaksusu@hotmail.com> Sun, Feb 10, 2013 at 1:31 AM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Mr. Doty,

I protest all plans to construct a Maintenance & Storage Facility for Streetcars at 11th & Grand. This is a vibrant residential neighborhood and the city is planning to build an industrial maintenance yard adjacent to families, restaurants, and retail stores. As a resident of downtown, I expect our city planners to promote commerce, controlled population growth, and exercise good old fashion common sense.

Do not build an industrial maintenance yard next to homes.

- Grand Loft Resident.

Streetcar planning

gpastushenko@yahoo.com <gpastushenko@yahoo.com> Thu, Jan 31, 2013 at 12:13 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>

Hello, I was recently made aware of the more detailed layout plans for the downtown streetcar and I am told you are the person to email with any comments or concerns.

I am a resident of the Evo South building on grand and 12th. I voted for the streetcar and think it will be a wonderful addition to our downtown and first of all thank you for taking a part in this long awaited project.

My big concern is the maintenance / service area that is planned directly across the street front our beautiful building . I and some of my fellow residents feel that this site may not be the best place for this. Placing an area such as this in front of two major highly populated residential highrises may just do the opposite of what the streetcar set out to do and bring property values in the neighborhood down due to views at the maintenance area and probable tram traffic and noise excepted with the operation.

Although downtown is quickly becoming more and more residential and we realize that finding a place for the service center is a challenge, there are still some options. For instance, there are multiple large lot areas east of grand ave close by, such as at Olympic , at 9th and at 8th that may be better suited for this.

Also, there are large lots at northwest corners of olive and Olympic and olive and 9th that would affect the residential communities even less. All in all, there are better options and we ask the city to consider them carefully.

Your attention and help is very much appreciated and if there are any questions please do not hesitate to contact me. Also, if you are not the right person to email, would you please let me know who is and / or forward this to them.

Thank you for what you will do.

Sincerely,

Gary Pastushenko

Proposed Maintenance and Storage Facility at Parking Lot behind Grand Lofts, Grand & 11th

Alex Gollan <alex@aazart.com> Sat, Feb 9, 2013 at 5:56 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Dear Mr. Doty…

We are emailing to register our STRONG objection to the possibility of choosing to place the maintenance rail yard for Historic Streetcar project in what is currently the parking lot for the Grand Lofts. We understand that the restoration of the streetcar makes sense for the economy of DTLA. But as a resident here, it becomes clear that there needs to be a balance between the current explosion of growth and construction in this area and a reasonable sense of maintaining the character and focus of our neighborhoods throughout this process.

Grand Lofts is not a luxury high-rise with below-ground parking, doorman, etc… and as such without our parking lot it would be really difficult to live here. It would be unfair to penalize the owners and tenants here when you could just as easily locate the rail yard somewhere else that does NOT take away parking specifically attached to a building for the homeowner's and tenant's use. And as you are aware, this area caters to the Staples center, Nokia and LA Live… so other parking options are very minimal most of the time, and non-existent during events.

Please rethink this as an option for the maintenance yard!

Sincerely,

Alexandra and Alan Pavlish

330 W. 11th St, #303

LA, CA 90015

Jim Doty <jim.doty@lacity.org>

proposed maintenance yard 11th/Grand

1 message

Stanley Perlo <perlo187@gmail.com> Sun, Feb 3, 2013 at 3:38 PM
To: jim.doty@lacity.org

Dear sir: Let me suggest several reasons why a maintenance yard at 11th and Grade would NOT be a wise choice.
1. The yard itself will have some tourist value. It should therefore be located in an area where tourism and trade will be enhanced. A location on Broadway would greatly enhance pedestrian traffic in a commercial area.
2. As a resident of 1111 S. Grand I have seen the value to the City in having residential buildings with greater value so as to provide greater property tax income to the city. A maintenance yard in the heart of South Park would not only discourage additional residential structures but will effect both value and desirability to future residents..
3.I am also concerned about the message putting a maintenance yard in a burgeoning residential area could discourage future developers and residents from investing in the downtown area. One would have to be concerned that the city might "plop" something down in a an area where people are making botha financial and life style decision.
Thank you foor your consideration

Rail Yard at 11th and Grand

Susannah Poer <susannahpoer@me.com> Sun, Feb 10, 2013 at 12:44 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Mr. Doty,

As a resident of The Grand Lofts, I am opposed to the proposal of building a rail yard for the Streetcar at the Southeast corner of 11th Street and Grand Ave. This happens to be the parking lot for our residence. After several years of legal issues with the original lot owners, we have just recently been given our parking lot back. Losing this again would not only be a severe inconvenience, but might likely affect our property values. Having this lot connected to our structure and secured with a fence and 24-hour guard provides us all with added safety and security, as well as immediate access to the building.

I have no doubt that the Streetcar will be a positive, beneficial addition to downtown LA. Many residents voted for it, myself included. But building the rail yard so close to hundreds of residents who live, work, and relax just steps away would be monumentally disruptive. Surely there are options further away from full-time residents? Not to mention the likely chaos and traffic caused during LA Live and Staples events. Our neighborhood can be thick with heavy traffic, noise pollution and rowdy spectators during these events, both day and night. Heavy construction added to this would further hinder our access to our building.

I urge you to reconsider the location of the rail yard so close to South Park residents.

Thank you for your consideration.

Susannah Poer
The Grand Lofts
#507

Jim Doty <jim.doty@lacity.org>

Grand Lofts Parking Lot Currently Under Contract for Parking Structure

1 message

Karen Sandler <kmsandler.email@gmail.com> Sun, Feb 10, 2013 at 11:23 PM
To: jim.doty@lacity.org
Cc: board@grandlofts.com

Dear Mr. Doty,

The owners/residents of Grand Lofts have contracts in place for a parking structure to be built on the South East Corner of 11th and Grand Avenue. I am one of the original residents that moved into Grand Lofts in 2005 and we have a 50 year lease for parking on that lot. We paid for the space and we want our parking structure! Please click on the link below to review the Grand Lofts parking documents.

http://greeradvisors.com/projects/GrandLofts/

My unit faces the parking lot and I DO NOT WANT A RAIL YARD in my parking lot!!!

Sincerely,
Karen Sandler
Owner/Resident Grand Lofts
KMSandler.Email@gmail.com
(707) 481-4215

Jim Doty <jim.doty@lacity.org>

Proposed Maintenance Rail Yard For street car

1 message

Greg stangl <greg@prebrokerage.com> Mon, Feb 11, 2013 at 6:03 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Re: proposal for maintenance yard at 11th and Grand

I am a homeowner at the Grand Lofts and am vehemently against this proposition. I purchased my loft in 2007 for nearly 3/4 of a million dollars. This would be a travesty and eyesore not to mention the loss of parking for homeowners. What is needed is more value added retail and development that offers South Park residents convenience. There has to be a better location or alternative in mind for consideration.

Thank you!

Greg Stangl
Resident 206

Sent from my iPad

Jim Doty <jim.doty@lacity.org>

LA Streetcar Rail Yard

1 message

Melissa Teigue <melissa.teigue@gmail.com> Fri, Feb 1, 2013 at 3:22 PM
To: jim.doty@lacity.org

Hi Jim,

I'm contacting you because I am a homeowner and resident in the Elleven building on 11th and Grand. We received the information regarding the possible maintenance facility on the SouthEast corner of 11th and Grand and I had some questions and concerns.

How would it affect the current parking situation in the neighborhood? Would it take away a parking lot or even two?
Would it impact traffic? Would the noise level effect any of us residents?

Please let me know if there is anything more I need to know about this as a homeowner, resident and taxpayer.

Thank You,
Melissa Teigue
Elleven Homeowner

Streetcar

Peter Toumasis <toumasis33@mac.com> Mon, Jan 28, 2013 at 9:18 AM
To: jim.doty@lacity.org

Dear Mr. Doty,

My wife and I live in the LUMA building on the corner of 11th and Hope St. We moved here from Westwood in 2007. While LA Live was still a parking lot and the majority of the new restaurants and bars in the area did not exist, we made a significant investment in the future of downtown. We're excited about all of the new development, including the idea of introducing the streetcar to the area. That being said, I am concerned about the details that are currently being worked out.

First, the route of the streetcar on Broadway is fine, however, my issue is having it go down 11th Street towards Staples and LA Live. 11th Street is only two lanes and the only street running West with a direct route to Staples Center and LA Live. Having the streetcar take up one of those lanes will leave only the other lane for auto and bus traffic. During events at Staples Center and LA Live, which is nearly every night of the week especially from October to May (the NBA and NHL season), traffic is already a concern. I don't believe the streetcar will relieve traffic, but rather add to it by limiting the lane for cars to just one. To compound this problem, the main parking entrance and exit for both LUMA and ELEVEN is on 11th Street. That's a combined 400 units in those two buildings where occupants rely on 11th Street as their main thoroughfare to get in and out of their homes.

Now, Eleven was the first new LEED construction residential building in downtown and Luma was the 2nd LEED building. The homeowners in both buildings made significant financial investments and took a leap of faith betting that downtown would come out of the recession in the best shape it's been in since the 1940's. Both buildings are in the top 5 most expensive residential buildings downtown. The vast majority of units are owner occupied so we can not just pack up and move if we're not happy like renters can. We have a real stake in downtown. Culturally, emotionally, and financially. We paid $700 per sq. ft. in a 'transitional' area, hoping our investments would someday be justified. Again, 11th Street is only a two lane street and the primary entrance and exit to both buildings. Adding a streetcar to 11th Street will only cause problems to the homeowners of Luma and Eleven on their morning and evening commutes. I can't help but think it will have an adverse affect on our property prices.

Secondly, the location of the streetcar storage and maintenance building seems straightforward. In my humble opinion, it comes down to cost and convenience. I would think the area around Broadway would be the most convenient and quite possibly, the most cost effective. I don't know the details of the specific locations that you're considering, however, I can tell you that South Park is generally more expensive than the Arts District or Historic Core. Whether finding a warehouse to readapt or building from the ground up, the cost per square foot is much cheaper in those areas. The closer you get to LA Live and Staples, the more you're going to pay. South Park is attracting more hotels and residential construction and I can't imagine it makes sense to spend the money just to have a maintenance facility in the area.

Congratulations on getting the streetcar passed. I urge you to consider the above two points when doing the EIR. Looking forward to seeing what you come up with.

Thank you,

Peter Toumasis
424 333 2333

Question - draft EIR Streetcar

Van Stekelenburg, Mark <Mark.VanStekelenburg@pkfc.com> Fri, Feb 1, 2013 at 7:59 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Hi Jim,

I am a resident of Grand Lofts, located at 330 w 11th street.

Our building has 66 residential units that are located at Grand Lofts, where I have lived for six years.

Our parking license is tied to the northern portion of the parking lot bounded by Grand, 12th, our building, and the alleyway running between Olive and Grand. We noticed that this is one of the suggested locations for the maintenance yard for the proposed Streetcar. Can you please tell me what will happen to our parking? We have a license agreement with Merco/Meruelo Maddux or whatever the current ownership entity name is. Our license calls for the construction of a parking garage on this parcel.

We are very concerned and confused as to how this can be proposed as a location. Can you provide additional detail and a response as to what the city is suggesting happen to our 66 residential units and their parking??

Mark VanStekelenburg

Grand Lofts #705

330 W 11th Street

Los Angeles, CA 90015

Jim Doty <jim.doty@lacity.org>

NO Rail Yard in South Park District

1 message

Brian Wetzel <brian.wetzel@gmail.com> Mon, Feb 11, 2013 at 4:33 PM
To: jim.doty@lacity.org

Jim-

I am respectfully requesting that you do NOT locate the maintenance rail yard on the corner of 12th and Grand Ave. The South Park District is a neighborhood, not an industrial or light industrial zone. I purchased my home at Elleven because the South Park District is a residential district a maintenance rail yard is not consistent with a residential district.

Thank you for your consideration.

Regards,
Brian Wetzel
Elleven Resident

Jim Doty <jim.doty@lacity.org>

Rail Facility at 11th and Grand??

1 message

Richard Clement Wu <richard@grandlofts.com> Sun, Feb 10, 2013 at 9:47 PM
To: jim.doty@lacity.org

Rail Facility at 11th and Grand??

I'm thinking someone made a clerical error in adding the above location as a possibility?

Richard Clement Wu
Board President
Grand Lofts DTLA
+1 626 532 7424 - Direct
+1 747 22 GRAND - Main
+1 208 575 6624 - Fax
grandlofts.com

Jim Doty <jim.doty@lacity.org>

Streetcar maintenance rail yard

1 message

Rachel Jiyoung YOON <musicyn@gmail.com> Sun, Feb 10, 2013 at 10:38 AM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Hello Mr. Doty,
How are you?
I am one of Grand Loft residents.

I got the news regarding Streetcar maintenance rail yard from our Grand loft board.
I am supporting street car project and so happy for the project. However we recently secured our parking lot and it is essential for our residency. We can't afford to loose the parking lot.
Please consider the residents and find the better options.
Have a wonderful day.
Rachel

Rachel Yoon | Dean – Bachelor of Music Program
Musicians Institute | 6752 Hollywood Blvd., Hollywood, CA 90028
Web mi.edu | Email rachel@mi.edu | Tel 323.860.1170 | Fax 323.463.2440

....
Celebrating 35 years of excellence in contemporary music education

Jim Doty <jim.doty@lacity.org>

RE: Maintenance rail yard

1 message

yuka-young <young_50@hotmail.com> Mon, Feb 11, 2013 at 5:41 PM
To: "jim.doty@lacity.org" <jim.doty@lacity.org>
Cc: "board@grandlofts.com" <board@grandlofts.com>

Jim Doty,

I have informed that the city is planning to place the maintenance & Storage yard for the streetcar system and the south east corner of 11th and Grand Ave. is one of proposed area. I think it is really poor judgment that city makes for this vibrant residential and commercial mixed used streets. The proposed site is located in South Park which is one of new great residential, entertainment industry and educational buildings are developed past few years. Young professions, students, families have moved and created great community. However the maintenance yard will strongly against this great environment that has created last few years.

I strongly disagree that the city places a Maintenance Yard for LA's streetcar on the South East corner of 11th and Grand Ave. It will ruin our great community.

South Park Resident

Other

LA GEECS

Jim Doty <jim.doty@lacity.org>

(no subject)

1 message

crowley richard <destinymusicworks@yahoo.com> Mon, Feb 4, 2013 at 4:21 PM
To: jim.doty@lacity.org
Cc: r crowley <rcrowley@kw.com>

Dear Jim,
Re: Streetcars

A couple of thoughts from a (previous) DTLA loft owner/resident,at Spring and 7th..and a member of the LA Conservancy:

Anything that improves public transport in LA, inc,.downtown, making it a desirable method of travelling by all socio-economic groups is a very good and long overdue solution!

a) It'd be rather wonderful if the cars displayed some kind of graphic alluding to the original streetcars..perhaps photographic,.even though these cars will be of a contemporary design, I feel a bridge to the past, a linking continuety of image, is quite important in celebrating (and not forgetting) LA's history.

b) Whilst I have not seen all of the plans, I'd have loved to see planted/decorated medians if at all spatially possible.
Raising funding for such an addition (or any statuary elements etc,.) could be helped by public donations, which are memorialised at a certain financial level.

For example, several years ago, I contributed towards the Larchmont Blvd planted median. All such donors received their names engraved upon the prominently displayed bronze plaque. It makes me feel just a bit more connected to the city....

Thank you for allowing me to provide my input.

Sincerely,

Richard Crowley
323-449 0364
(keller williams realty. dre#01505269)

Jim Doty <jim.doty@lacity.org>

Streetcars on Broadway

1 message

Steve Easlon <westernrails.sle@gmail.com> Tue, Feb 5, 2013 at 8:51 PM
To: jim.doty@lacity.org

Jim,

You wanted feedback on the trolley system that is to run on Broadway. My name is Steve Easlon. I wrote the book "The Los Angeles Railway Through The Years" back in the 1970's. Los Angeles had 2 tolley systems. There was the Pacific Electric which was known as the red cars and the Los Angeles Railway which was known as the yellow cars. My book covers the Los Angeles Railway yellow car system which ran on Broadway and many other streets. Let me know if you would like a copy of the book. I know you are planning to use modem light rail trolleys, but I would like to see a different approach. Los Angeles has lost many of the artifacts that made Los Angeles unique. I was very pleased to see Angles Flight put back into service. Los Angeles needs to hang on to historical artifacts like this. If you go to San Francisco, you will see historic Cable Cars and also historic electric trolleys running in the city. They decided to keep many of the old cars running and that gives the city a unique character that attracts people. If you go to San Pedro (Ports O Call), you will see a section of the old Pacific Electric red car trolley system that was recreated. They have 1 authentic red car trolley and 2 replica red car trolleys operating. This is a very popular attraction and they want to expand the system.

Along with the light rail trolleys, I would like to see some original looking trolleys that ran in Los Angeles for decades also operate on the new system. Replica trolleys can be constructed, but I also know where there are original bodies of old Los Angeles Trolleys. They could be rebuilt with new running gear and electronics and would bring much needed history and character back to Los Angeles. As a kid I rode the old trolleys on Broadway and loved them. i can't wait to be able to ride trolleycars on Broadway once again.

Let me know if I can be of help.

Sincerely, Steve Easlon

Jim Doty <jim.doty@lacity.org>

Los Angeles streetcar study. Streetcar Scoping Meeting

1 message

interurbans <afishel@interurbans.com> Thu, Jan 24, 2013 at 6:23 PM
To: jim.doty@lacity.org

What would the cost difference, assessment and ridership effect be using the 7th street alignment for a connection to the 7th St Metro Station and new 7th & Figueroa business hotel complex area. Duo directional or double track on the entire route and move the single track from Hill to Broadway for the double track on Broadway? This would reduce the ride time to reach many destinations by half or avoiding the walk from Hill to Broadway. This will also increase the needed capacity.

Los Angeles is not Portland with longer North South blocks and fewer one way streets. Also Portland's destinations, points of interest, business and residential density is more evenly spread out than Los Angeles.

Thanks

Alan

From: Ginny Brideau [mailto:gbrideau=therobertgroup.com@mail99.us2.rsgsv.net] **On Behalf Of** Ginny Brideau
Sent: Thursday, January 24, 2013 11:38 AM
Subject: CORRECTION: Follow up from Streetcar Scoping Meeting

This is a brief email following up from the two scoping meetings held for the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.

A copy of the Notice of Preparation is available for download by visiting: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf

A copy of the Initial Study: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA_Initial_Study.pdf

From: Jim Doty
To: A/J Jackson
Subject: Re: Response Please
Date: Thursday, January 24, 2013 2:47:13 PM

AJ,

I apologize for the lack of response -- I can't find an earlier message from you.

During the Alternatives Analysis, we considered two alternatives (then identified as Alternatives 5 & 6) that would add stops at City Hall, Olvera Street/Union Station and Little Tokyo (+2 more). However, neither of those alternatives was selected (see City Council file 11-0329-S2 via the City Clerk's web page (http://cityclerk.lacity.org/lacityclerkconnect/). It should be noted that the proposed streetcar route will include opportunities to transfer to other modes of public transit that do (or will) serve those other locations. The Locally Preferred Alternative now under consideration by the City does not preclude any future extension.

The outward appearance of the streetcars has not been decided at this time, but certainly a design consistent with the theater district's historic art deco period should be considered.

Jim

On Thu, Jan 24, 2013 at 11:54 AM, A/J Jackson <atothejjackson@gmail.com> wrote:

> You never responded to my initial comments, but I guess I'll try again. Are there plans to build the street car so that it can be continued at some point int he future? A link to LIttle Tokyo or Echo Park perhaps?
>
> Also, the proposed "street car" car design was horrific! I know it was a concept, but please don't overlook DTLA's famous art deco aesthetic when designing.
>
> -AJ

--
Jim Doty, Manager
Environmental Management Group
Public Works Engineering
1149 S Broadway Ste 601
Los Angeles, CA 90015
213-485-5759

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

COMMENT FORM　　FORMULARIO PARA COMENTARIOS　　コメント用紙

Name/Nombre/氏名: MARK R JOHNSTON	
Organization/ Organización/団体名: TRAC-NARP-PRS-Transit Coalition	
Address/Dirección/住所・所在地: 4185 Van Buren St Chino 91710	
Telephone/Teléfono/電話: 909-591-6691	Fax:
Email/電子メール: Canamm; @ Yahoo. Com	

Comments/Comentarios/コメント: ✓ Really wide sidewalks please!

✓ Consider Adding More Trees to Your Side Walk Plans. Never Enough trees Downtown!

✓ minimize poles For Holding Catenary Consider Combining Light Poles, Streetlights poles ~~to~~ Hold the wires. Also Run wires off Building (Like In the past)

✓ Good Info signs at Each Stop - ~~What~~ Is In nearby Neighborhood Blocks?

✓ make stops Easy to Find (Somekind of Landmark)

✓ minimize trash cans | Benches = Collects trash | messy

✓ The ~~Care~~ Itself (The Cars) Yellow and Green Like the past!

✓ minimize Advertising on the sides of the cars, Look classy, not a Rolling BillBoard

Return comment form to: Favor de regresar formulario a: コメント用紙の送付先:
Jim Doty, City of Los Angeles, Department of Public Works, Bureau of Engineering
1149 S Broadway Ste 600, Los Angeles, CA 90015-2213 or jim.doty@lacity.org

✓ Hopefully will Follow Portland model Especially quick Construction | surface Methods Avoid Utility problems with DWP Like Expo Did! :)

Streetcar hours

ariana nussdorf <ariananussdorf@gmail.com> Sat, Jan 26, 2013 at 2:05 PM
To: jim.doty@lacity.org

Hello!

Firstly, I'd like to thank you for your progress with the LA Streetcar. I own a condo on Los Angeles St. and I work at FIDM and I'm so excited about how the streetcar will impact the neighborhood and my property value. One thing I want to request is that the streetcar stays open for at least a half hour after the close of the bars. I believe that this will help the nightlife business downtown and keep the streets lively and safer. I believe that it's more likely that bar/restaurant patrons will use the streetcar more than early morning commuters so if it's between opening early or staying open late, I'd suggest staying open later. Also, I'm hoping that the fare isn't too high. I don't think people would want to pay $1.50 to take a streetcar a few blocks. Perhaps one option is that with each fare purchase, you get some kind of credit to a local business. That way when someone spends money on the streetcar, it encourages people to use the local businesses.

Have an excellent weekend,

Ariana Nussdorf

LA GEECS

Jim Doty <jim.doty@lacity.org>

FW: Reminder - Streetcar Comments Needed 2/1

1 message

Ginny-Marie Brideau <GBrideau@therobertgroup.com> Mon, Feb 4, 2013 at 9:08 AM
To: Jim Doty <jim.doty@lacity.org>
Cc: "Chivaratanond, Susan" <ChivaratanondS@metro.net>

Ginny Brideau, The Robert Group

gbrideau@therobertgroup.com

(o) 323.669.9100 (f) 323.669.9800 (m) 213.248.0698

Twitter: @TheRobertGroup

From: Ralph Velasco [mailto:rpvelasco83@gmail.com]
Sent: Friday, February 01, 2013 1:07 PM
To: Ginny-Marie Brideau
Subject: Re: Reminder - Streetcar Comments Needed 2/1

Make sure you get residents who are paying taxes for this free passes. My only comment.

Sent from my iPhone

On Feb 1, 2013, at 9:27 AM, Ginny Brideau <gbrideau@therobertgroup.com> wrote:

> This is areminderemailregarding the Restoration of Historic Streetcar Services in Downtown Los Angeles EIR/EA.
>
> A copy of the Notice of Preparationis available for download by visiting: http://eng.lacity.org/techdocs/emg/docs/historic_streetcars/CEQA%20NOP.pdf
>
> A copy of the InitialStudy: http://eng.lacity.org/

Jim Doty <jim.doty@lacity.org>

Re: Streetcar EIR Scoping Meeting

1 message

Brigham Yen <brighamyen@gmail.com> **Wed, Jan 16, 2013 at 8:58 PM**
To: Jim Doty <streetcarservice@metro.net>
Cc: jim.doty@lacity.org

Hi Jim,

Can I submit my comment here?

I hope that our streetcar can have the same color scheme as the original PE Red Cars with the **RED** and **YELLOW** instead of the green color used in the Streetcar LA renderings.

I have attached an image of a vintage streetcar as an example.

Thank you for your consideration.

--
Brigham Yen
Realtor
M: 213.293.6639
Lic: 01817137

DTLA RISING

DTLA RISING | Facebook | Twitter

On Mon, Jan 14, 2013 at 12:59 PM, Jim Doty <streetcarservice@metro.net> wrote:

> The City of Los Angeles invites you to provide comments at the Scoping Meetings for the EIR for the Restoration of Historic Streetcar Service in Downtown LA
>
> View this email in your browser

The City of Los Angeles' Bureau of Engineering invites you to attend and provide comments at the Scoping Meetings for the Environmental Impact Report (EIR) for the Restoration of Historic Streetcar Service in Downtown LA:

January 23, 2013
10-11am and 6:30-8pm

Caltrans Building
100 S Main St
Conference Room 1A
Los Angeles, CA 90012

All requests for reasonable accommodations and translations in other languages will be provided upon request. Please submit meeting requests 72 hours in advance of the scheduled meeting date via streetcarservice@metro.net, 213.922.3000, or the California Relay Service at 711.

Scoping Period

The scoping period is 30 days: January 3, 2013 – February 1, 2013. You may submit comments by February 1 via mail or email to:

City of Los Angeles
Department of Public Works, BOE
Attn: Jim Doty
1140 S Broadway, Suite 600
Los Angeles, CA 90015-2213

jim.doty@lacity.org

For more information, and to view the Notice of Preparation and Initial Study, please visit:

- metro.net/streetcar
- eng.lacity.org/techdocs/emg/

Metro

LA DPW ENGINEERING TRANSFORMING LOS ANGELES

MS 99-22-2
Los Angeles, CA 90012

Add us to your address book

unsubscribe from this list update subscription preferences

pe5000a.jpg
53K

Appendix D2. Comment Database

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Adelman		X	X					X						X	X		X	This project will reduce mobility while having no effect on transit circulation or revitalization. Adding streetcars to the already congested streets of downtown will only make traffic worse. Streetcars are functionally the same as the buses that replaced them except that streetcars can not maneuver around obstructions such as double parked cars and trucks, accidents, road work or police or fire department activity. Also, streetcars cannot pull over to the curb to let passengers on or off, but instead must stop in traffic lanes, thereby blocking traffic. Finally, streetcars will be just that many more vehicles on the already crowded street. Streetcars will not enhance transit circulation. Downtown is already served by dozens of Metro and Municiple bus lines, many of which follow the same routes through downtown as this proposed streetcar. In addition, the Dash shuttle system serves the same function as the streetcar, with a choices of routes covering most of downtown. Furthermore, downtown is served by the Red and Purple line subways running under the congested streets at five minute headways, providing much faster and convenient service than a streetcar ever could. Finally, by the time the streetcar is running, we will be well under construction on the Regional Connector, an underground extention of the Blue and Expo Lighr rail lines, creating a second subway corridor through downtown. The Construction of a streetcar will not further revitalize downtown. Other cities (such as Portland OR) that built street cars did so on corridors that we lightly trafficed using minor streets to connect downtown to adjacent functionaly obsolete industrial and shoreline areas with no other transit service. This helped facilitate the revitalization of these area with the conversion of vacant buildings to lofts and commercial uses and the construction of new condo towers on former parking lots and one story buildings. The construction of the Metro Blue, Red, and Purple lines into and through downtown is the late 1980s had the same effect here in LA. Lage number of old pre WWII office and industrial buildings along the subway corridor were converted to lofts and more than a dozen new buildings built near the Metro Stations. Furthermore, now that the economy is growing again, the downtown residential boom is resuming with two residential high rises currently under construction and at least two more expected to break ground this year. Similar construction activity is also occuring near Metro Stations in Hollywood and Mid Wilshire. Finally, the streetcar will not enhance tourism. Some of the earliest systems attracted tourists because of the uniqueness of the streetcars and because these citys had few other attractions. Los Angeles on the other hand is a tourist mecca. Everybody already wants to visit LA to see Disneyland, Universal Studios, Hollywood, Venice Beach, Santa Monica, etc. Meanwhile, street cars have become a dime a dozen, so many cities now have them, that nobody has to come to downtown LA just to see and ride a street car, and certainly not one that is stuck in a traffic jam.
Advisory Council on Historic Preservation	Federal					X												No comments regarding the NEPA review at this time. While the documentation proivided indicates that the proposed undertaking may adversely affect historic properties, we have no record of receiving notification of adverse effects from FTA regarding this undertaking as is required under our regulations...Please continue to consult with the California State Historic Preservation Office and other consulting parties to complete the requirements of the Section 106 process.
Alpern		X																The key factor for this project to succeed is to extend the benefits of the Downtown Light Rail Connector and Red/Purple Lines to the rest of Downtown.
Anav			X													X		My name is Jonathan Anav and l live at the Grand Lofts on the comer of 11th and Grand. It was brought to my attention that you are looking to build a maintenance facility on the lot that is our current parking lot. I feel that this is a horrible idea if not for the sale fact that you have million dollar condos right across the street to this lot and of course our building is adjacent to this lot. This will driw property wlues DOWN and hurt the residents that support Downtown LA by buying units and living here. This would be a bad move and it would be much better ser.ed to have this maintenance facility a block or two down where there has been no development.Feel free to contact me at anytime with any questions.
Autry		X																As a ten year resident and stake holder, living and working in the Downtown area, I do support and I do look forward to the RETURN of the Street Cars tothe Downtown area! Thank you for an opportunity to RESOND!
Baptista			X													X		am a owner resident of Grand Lofts at 330 W 11th Street. Thank you in adwnce for your attention to this email. I'm writing to express my whement disapprow.l of the proposed location of the streetcar maintenance facility on the parking lot south of our building. That parking lot property is under an agreement to provide whicle parking for residents of Grand Lofts. Displacing that function would cause sewre undue hardship to our building's residents. While I haw been a strong supporter of the streetcar project, the maintenance facility's proposed location, in the middle of an up and coming downtown neighborhood, will seriously undermine the Mure of retail activity and the local pedestrian network. I want to see the streetcar project go forward. However, please consider an alternate location br the maintenance facility.
Barrett		X	X															Hello Jim. I am in favor of what you are doing with the street car. I feel that having the street car rest stop and repair at 11th Street and Grand is a great idea. If you need further information please ask. Looking forward to the completion of the street car.
Barrett II				X							X							Dear Jim: I live in the EVO Building in South park and I was asked to take a survey to approve or disapprove of the rail yard in my neighborhood, and below is my response.. I would like you to take this into consideration, and if you should have any questions please contact me... I am glad to be a part of downtown Los Angeles and a resident of the City of Los Angeles. RESPONSE to SURVEY GIVEN TO EVO RESIDENSES to Approve or Disapprove of the rail yard on 11th and 12th Street: (For your consideration) I approve of the rail yard in our neighborhood.. Because what I see from what the city is doing they will make it look really nice , compatible with the neighborhood , and I am sure they will consider the noise because we are a residential area. I am sure they will make the rail yard look nicer than our building. The flowers are not maintained in the front of our building (as many parts outside and inside our building are not maintained) and many times it smells like pea outside. So with that how can you ask the residences to have an option of disapproval of this location for the rail yard, I have written Jim Doty the same thing, and will again. I think EVO HOA needs to look at how our building is being maintained before asking us not to approve this location for the rail yard.. The city has a proven record of making things look nice and well maintained throughout the city,, and EVO Board Members and Management cannot maintain and do not keep up our building on the outside and the inside.
Bartholomew																X		As the owner of a condominium in the Grand Lofts at 330 West 11th Street in downtown Los Angeles, I am strongly opposed to locating a maintenance yard at 11th and Grand as shown on pages 6 and 7 ofthe NOP for the Draft Environmental Impact Report for the Restoration of Historic Streetcar SeNce in Downtown Los Angeles. Parking for Grand Lofts residents is located on a part of this location and is part of the wlue of my property. While I support the restoration of street cars in downtown. I do not support a maintenance yard in my back yard.
Bell																X		I am opposed to the proposed location for the maintenance rail yard for the new streetcar system being across the street from my business and home at 1111 South Grand Ave La 90015. Your proposed location would be located in the two perking lots between 11th SI. and 12th SI. on Grand Av lam wry upset about this as it would cause traftic noise pollution in my Residential community and noise for my business. I think it is insensitiw to the community that is imesting in the nNtalization of Downtown. I am voicing my opposition and I will remain committed to seeing this project stopped! If this project is apprmed I will mO\e my business tom DowntO'Nl1 and go back to the westside.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Berke																X		It has come to my attention the City of Los Angeles is entertaining the idea of placing a maintenance rail yard for the new Streetcar system in the parking lot where the Grand Loft residents park. I cannot possibly express how deeply concerned I am about losing this lot for all of the residents in our building. I am one of the owners who has been part of the building since it opened as the Grand Lofts S8\en years ago. This lot was promised as the parking lot location to the occupants back then and has prmen to be the most comenient and secure location. Taking this away would greatly impact the residents in the most incom.enient manner, especially considering the challenged parking situation the City already has. Please consider altematiw sights that don't impact residents who liw in the aty. as 'N8 would hate to giw residents a reason to mO\e to another city. Thank you for your serious consideration regarding this matter and please call me if you haw any questions and/or concerns.
Bisaha		X				X								X				Mr Doty: As I'm sure you're aware, there's a great deal of effort underway to bring back the Broadway theaters. Owners, advocacy groups and city council staff are all involved. No one yet knows how things will turn out, or the purposes that each theater will take on (movies, performing arts, restaurant/entertainment, etc), so it's important not to preclude any options. In that context, the streetcar scoping project should include looking at impacts to possible theater operations. For example, if a theater wants to host a red-carpet function, it would likely involve lots of curbside ingress/egress of VIPs and/or a valet stand. How will streetcar infrastructure and operation work around those needs? Could the streetcar operate while allowing a collection of limousines to drop off a number of dignitaries/celebrities? As another example, some of the houses don't have alley access, so shows have to load from the street. Can streetcar operation coexist with the needs of a production (or a band, or a performer, or...) to load/unload from the street? The streetcar can help revivify the theaters, just as the theaters can generate ridership for the streetcar. The key is to maintain operational flexibility for both. How to do that is a worthy subject for the EIR.
Breger		X	X															I strongly support the proposed route of the streetcar. Although I would personally prefer the 9th Street alternative (I live at the Orpheum), it is a better public policy choice to use the 7th Street route for its proximity to the metro station. Can't wait for this to happen!
Brooks		X																The proposal for street car, is a pretty good deal. Some, probably wonder about noise, and if street where traveling is very adequate. I do not think it should be a problem.
Bytof																X		I am a seven year resident owmer in the Grand Lofts at 330 W 11th St. Our building is located along the 11th St track route, and is also adjacent to the potential South Park maintenance facility location. As part of our Grand Lofts purchase agreement, the current dewloper EVOQ and their predecessor are obligated to pf'0\4de a penn anent parking structure with at least 132 spaces. This structure is four and a half years behind schedule, and we are currently using 1150 S Grand Aw for temporary parking. I support the mission of the Streetcar, but strongly request that the neighborhood be included in the discussion of the maintenance facility as Mil as stops along 11th Street. If South Park is chosen as the location for the maintenance facility, hopefully 'Ne will be able to seize the opportunity to incorporate our parking commitment, neighborhood seNng retail along Grand Awnue, and possibly ewn public park space like tennis courts on the roof. The Streetcar is a unique instance where the neighborhood has chosen to fund an amenity that will benefit the entire city and its \4sitors. As a result, extra e1fort should be made to include the neighborhood in the planning process to insure a truly fantastic result.
California Transportation Commission - Laura	State																X	The California Transportation Commission receiwd the Notice of Preparation of a Draft En\4ronmental Impact Report for the abm.e-mentioned project. Is Mure action by the Commission (i.e a wte of funds, \OI:e to appl'O\e a Route Adoption, and/or a wte to apprme a New Public Road connection) anticipated for this project?
Chao			X													X		I own a unit at Luma facing 11th street. I am wry excited about the streetcar and what it could mean for downtown LA I only haw two comments right now: (1) Please do not put a stop right at the 11th and hope intersection. There was a marathon recently that had its goal line here, and I realized how disrupti\6 the noise can be. Up near Palm restaurant is better (also don't think one stop per block is necessary). (2) I don't think the streetcar maintenance facility belongs next to EII8\6n. That property is prime real estate for more retail and residential. A maintenance yard wouldn't make any sense_ I think it makes more sense between 2nd and 3rd, closer to the gowmment buildings_
Chin																X		Just want to voice my opposition, as a condo owner in South Park, concerning the possibility of putting in the rail maintenance and storage facility on 11th and 12th street. This area becoming more and more heavily residential and to put such a facility in the area will stymie our growth as a neighborhood. Furthermore, with the possibility of noise and other disturbances from the facility, it will significantly decrease our quality of life. Please reconsider the possibility of this action and put the maintenance facility in a more appropriately commercial/industrial area of the city. Thank you for your time.
Cohen																X		I am a re.ooem ofDownlown LA and have been living in the Soulb Parl< area (Luma buikling) ror the past 5 years. I am supportive of the streetcar initiative, but am wriling to express my objection to the proposed 30,500-square-root maintenance filcility site at the soulheast corner of 11th Street and Grand Avenue. I do mt fuel it is the appropriate area ror such a filcility as it woukl severely damaW' the quality oflifi: IDr residents in iliat area due to the excess mise and other potential polhrtanls. It is my hope iliat one of the other 2 proposed sites are eIDsen. Please advise what opfuns residents have to oppose 1hE opfun
Colburn School	Organization										X							I represent the Colburn School which occupies a parcel on Bunker Hill bounded by Olive, 2nd, Grand and GTK Way. The school is an internationally respected music conservatory and performance venue much like Julliard in the east. In addition, our facility is used for recording meaning that sound and vibration is an issue not just to the human ear but also to highly tuned recording equipment. We have been working diligently for the past year and a half with MTA structuring mitigations to eliminate the noise and ground borne vibration the will occur as a result of the Regional Connector tunnel planned along 2nd. We are concerned that noise and vibration of the street car could also impact our facility especially when compounded by that generated by the Regional Connector. As part of your EIR we will expect a detailed study with respect to our operation including acoustic engineering analysis proving that future noise and vibration will not affect our operation in any way. If Colburn School cannot provide an acoustically excellent environment we are out of business.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Cooper			X														X	1) Broadway and Grand seem like the obvious north-south routes for the streetcar to me. But I realize that the elevated street on Grand was probably not built to withstand the weight of a streetcar, and the hill between 4th and 5th might be at too high of an incline for streetcar use. And the routing of Flower, and the dead-ends on Hope and Oliw aren't conduciw to north-south streetcar trallic. But it faels like a waste to h8\e the streetcar run up Hill as well as Broadway. It would haw a much more useful and less-redundant route if it ran north-south on streets that were further away from one another. Are there any other north-south tr&\el'Sals that are possible? Is it technically not feasible to install a streetcar on Grand, or it is it just a matter of too much cost? 2) It seems that Little Tokyo would be an om.ous expansion step in the future. Perhaps Chinatown and Union Station could be added to a route as well. Also, another altematiw route could be built that could run up Figueroa and along 1st street, connecting with the eastern-most and southem-most portions of the track along the current planned route, to better sene the west side of downtown. Will this project be built with the possibility of future expansions in mind or is the current route the entire present-and-Mure scope of the streetcar project?
CPUC	State													X			X	The streetcar project described in the NOP will be subject to a number of rules and regulations involving the Commission. These may include the California Public Utilities Code, Sections 1201 et al, which requires Commission authority to construct rail lines over existing streets. The design criteria of the proposed project must comply with Commission General Orders (GOs) The proposed streetcars would pass through high density commercial and residential areas of the Los Angeles Downtown district on a heavily used roadway network. The potential impacts should be identified, discussed and evaluated for necessary safety improvements and mitigations at each proposed crossing and between crossings along street-running portions of the line. This includes considering traffic circulation and queuing, level of service, interconnection of nearby signalized intersections, emergency service response, pedestrian destinations and circulation patterns with respect to the railroad tracks, and compliance with the Americans with Disabilities Act. In particular, high population density areas near rail tracks typically lead to a high amount of pedestrians and vehicles around the tracks and may result in pedestrian and vehicle conflicts with streetcars. Proper analysis and design should minimize such interactions and mitigate the risks associated with them. Construction of a new public crossing requires authorization from the Commission, through the formal application process in accordance with the Commission’s Rules of Practice and Procedure.
CPUC - Munoz	State																X	The california Public Utilities Commission (Commission) has jurisdiction O\er the safety of highway-rail crossings (crossings) in california. The california Public Utilities Code requires the Commission appl"O\8l for construction or alteration of crossings and grants the Commission exclusiw poYr'9r on design, alteration, and/or closure of crossings in california. The Commission's Rail Crossings Engineering Section (ReES) has receiwci a copy of the Environmenta/Impact Report (EIR) notice for the proposed Historic Streetcar seaping meeting. I am inquiring about the nature of the EIR seaping meeting of January 23rd. Is it of a general nature? Or are specific engineering designs going to be discussed? RCES has already participated in some engineering design meetings with the City of Los Angeles.
Crowley		X															X	Anything that improves public transport in LA, inc,.downtown, making it a desirable method of travelling by all socio-economic groups is a very good and long overdue solution! a) It'd be rather wonderful if the cars displayed some kind of graphic alluding to the original streetcars..perhaps photographic,.even though these cars will be of a contemporary design, I feel a bridge to the past, a linking continuety of image, is quite important in celebrating (and not forgetting) LA's history. b) Whilst I have not seen all of the plans, I'd have loved to see planted/decorated medians if at all spatially possible. Raising funding for such an addition (or any statuary elements etc,.) could be helped by public donations, which are memorialised at a certain financial level.
Curtolo																X		Although this letter is coming from me personally, I would like for you to know that my fellow board members and I have discussed this at length with homeowners, and we are very unhappy with the city's proposal to place maintenance yards on Grand Avenue between 11th and 12th streets and the corner of 11th and Olive. I would also note that I have discussed this with luma's HOA president (corner of Hope & 11th) and hetoo has expressed dissatisfaction. South Park is considered an up and coming section of the broader community, particularly given the city's preeminent attraction, LA Uve. Our community continues to flourish primarily because home-buyers vif!!W South Park as a perfect place to call home. I believe there is great risk in this proposal as it will undoubtedly result in safety concerns for families with small children and pets, creating a greater noise and pollution problem, and ultimately devalue our properties. I would also like to share with you that I attended a couple of the events hosted by city officials promoting the streetcar. Alain, I was very supportive. However, this support came with the understanding that the maintenance yards would be nowhere near our building. In numerous conversations with various officials I brought up the maintenance yards. Their responses always pointed to the other two locations being proposed, and never suggested the ones on Grand and Olive, even after specifically questioning them regarding these lots. I find this very disappointing,. and frankly, a bit disingenuous, bordering on dishonest. I respectfully requestthat you share our community's concern with city officials and do everything you can to find an alternate location that would alleviate us of our concern.
Dahan																X		As a resident of the Grand Lofts, I am writing to express my opposition to placing a maintenance rail yard on our parking lot. I haw been very supportiw of Streetcar, and haw attended s8wral of the awnts promoting the Streetcar. If I was aware of your maintenance rail yard proposal earlier, I 'NOuld haw been initially opposed to the Streetcar as I now h8\e become. I hope your office will reconsider this decision. Our residential community will not support a maintenance rail yard in our neighborhood and by consequence, the Streetcar.
Davis I																X		A rail yard is not something that we want at Grand lofts. Our parking situation at Grand Lofts has been such a disappointment because of the lack of consideration of the residents" My family and I haw been here for 8years and we plan on staying, but Please reconsider this mme and think about all those efl8cted ..
Davis II																X		As a resident at Grand Lo1ts 'Nith 3 kids, I too DO NOT want a rail yard at 11th & grand, I am concerned about the potential health hazards as well as the noise it may cause. Please reconsider this site,
Delrahim		X	X											X				I am a resident owner in the South Park district of Downtown Los Angeles (DTLA). Please consider this as my comment for the Restoration of the Historic Streetcar. The Streetcar in DTLA is the best addition approved by the community since the park on Spring St. My comments pertain specifically towards the two proposed options of having the Streetcar run through 7th St. or 9th St. Both options should be implemented and considered part of the development of the Streetcar tracks. Having it run through 7th St or 9th St only will increase the traffic more than the plan would intend to alleviate, taking into consideration either alternate. 7th St alternate would be more beneficial since it runs along the metro station,thus, implying that the 9th St alternate would be logical, from a traffic standpoint, though the amount of traffic from the 9th St freeway exit would increase. Since there would be a fleet of Streetcars on the road, implementing different schedules (i.e., having only a select number of Streetcars pass through the 7th St route during peek hours of 7-9am & 5-7pm) at busy vs nonbusy times could alleviate traffic on both alternate routes.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Drivas		X	X															My name is Peter Drivas and I reside at 253 South Broadway. Therefore I am one of the most impacted residents as the loft I own is on Broadway and 3rd Street. Many people ask why I don't buy a bike or scooter to get around the neighborhood. Its simple. How can I enjoy the walks around the neighborhood if I am mobile. I have to navigate around traffic and miss all the splendor that downtown offers. The beautiful architecture, the shops, reataurants and the people. Having the trolly allwos one to view the splendor of downtowen and all that itr offes. An added bouns is energy efficianey whcih is iprtna tot al of us. Go trolley!!! The most logical place for a terminal would be Olive and 11th Street as the 5th and Hill space is needed parking or potentially a residential or commercial buidling. As for the area by Hills / Broadway and 2nd, I feel this parcel is to valuable as a future condominum tower or comercial space or combination. I am originally from New York City and I see downtown as the futrue Tribecca equivalent of Manahattan. I envsion Broadway as the hippest street in downtown and liken it to Colorado Avenue in Pasadena. Thank you for allowing me to give you my input.
Easlon																	X	Jim, You wanted feedback on the trolley system that is to run on Broadway. My name is Steve Easlon. I wrote the book "The Los Angeles Railway Through The Years" back in the 1970's. Los Angeles had 2 tolley systems. There was the Pacific Electric which was known as the red cars and the Los Angeles Railway which was known as the yellow cars. My book covers the Los Angeles Railway yellow car system which ran on Broadway and many other streets. Let me know if you would like a copy of the book. I know you are planning to use modern light rail trolleys, but I would like to see a different approach. Los Angeles has lost many of the artifacts that made Los Angeles unique. I was very pleased to see Angles Flight put back into service. Los Angeles needs to hang on to historical artifacts like this. If you go to San Francisco, you will see historic Cable Cars and also historic electric trolleys running in the city. They decided to keep many of the old cars running and that gives the city a unique character that attracts people. If you go to San Pedro (Ports O Call), you will see a section of the old Pacific Electric red car trolley system that was recreated. They have 1 authentic red car trolley and 2 replica red car trolleys operating. This is a very popular attraction and they want to expand the system. Along with the light rail trolleys, I would like to see some original looking trolleys that ran in Los Angeles for decades also operate on the new system. Replica trolleys can be constructed, but I also know where there are original bodies of old Los Angeles Trolleys. They could be rebuilt with new running gear and electronics and would bring much needed history and character back to Los Angeles. As a kid I rode the old trolleys on Broadway and loved them. i can't wait to be able to ride trolleycars on Broadway once again. Let me know if I can be of help.
El Dabe																X		Iam a resident of Grand Lofts located on the comer of 11th and Grand. It is my understanding that you are considering the south east comer of 11th and Grand Awnue as a potential location for the nevi street car rail yard. I am writing to ask you to please consider another location. While I am an ardent supporter and dad yes for the street car i do not think the street car rail yard located next to our building is a good idea. Our building is full of families with children including my 2.5 year old son and we would like to keep the surrounding area as free as we can of any potentia!lft.rture hazards. Also, we currently park our cars in that gated lot and really do not want to lose it as we feel it is safe for us and our families.
EVO	Organization															X		Following this cover letter are the responses and comments to a survey taken this week of our 316 members regarding the possible construction of a rail yard on Grand Ave. at 11th-12th Streets. Ninety-three percent of respondents voted in the negative on this proposed siting.
Fang																X		n has been brought to my attention that the proposed 'historic streetcar' project for downtown Los Angeles is currently evaluating potential sites for theirmtintenance yard and one location under consideration is the south east comer lot on 11th and Qand Ave. orbctterknown as the current pmking lot for<hn.d Loft tenants. First and fo:retmst, I want to cII!press my support of the 'streetcar project. I think it's a great idea and it would be wonderful to have a ImIC efficient and streamline formoftmnsportation throughout the downtown Los Angeles neighborhoods. However. after learning ourparlcing lot was a potential site fortbe IIllintenance yard, I began to have reservations. I will spare you the details of aD the patking changes the Qand Loft owners have had to endure over the years, but the simple truth is that our cUJrent parking amtngemmt is the safest location available to us. It jI '"PITtEd clrecUyto OPT !muda, ,mieh ,JJqm g. to niek.y Hit OUt Wiele. gd eater (Nt JpdJ"n, .. My There is no other location around our building that can offer that sam::: sense of security as we have now with our CUII'CDt parking situation. If that were ta1ren away fromIm, the various individuals and fitmilies that live at Qand Lofts, then I would argue that many of us would consider seeking housing elsewhere were a IIJJIC secured environImnt was available to us. Even with aD the luxury condos, IA live and other establishments near in around Grand lofts/South Park. this area is still undergoing 'change' in many ways. With that COIOOS, car thefts, mlggings, harassment fromhoIOOless people and many other situations where our security tmy be threatened. With that said, I kindly urge you to reconsider the options for the DIlintenance yard location. There DIlst be a different solution that would be satisfactory for all parties involved. Safety firstl
Finkelde																X		We li\e in the Grand Lofts building and heard that there might be plans to build a maintenance facility next to our building. I haw liwd next to such a facility and sure hope that I don't haw to do that again. The noise during the day and night can be unbearable, especially with kids.
Fishel			X														X	What would the cost difference, assessment and ridership effect be using the 7th street alignment for a connection to the 7th St Metro Station and new 7th & Figueroa business hotel complex area. Duo directional or double track on the entire route and move the single track from Hill to Broadway for the double track on Broadway? This would reduce the ride time to reach many destinations by half or avoiding the walk from Hill to Broadway. This will also increase the needed capacity. Los Angeles is not Portland with longer North South blocks and fewer one way streets. Also Portland's destinations, points of interest, business and residential density is more evenly spread out than Los Angeles.
Fried																X		I am writing to you as a resident of South Park regarding the proposed option of using the lots on Grand Awnue between 11th and 12th streets and a comer of 11th and Oliw for the maintenance yards for the n8\IV LA Streetcar. I am also a member of the Ellawn HOA Board of Directors and haw ser.ed on that Board as President, Treasurer and Secretary for 7 years since the building was first new. My comments are personal, although I haw spoken to many residents in my building and we are all in agreement that a maintenance yard in a residential area is highly objectionable. Elle\en, Luma and Ew represent more than 700 housing units and thousands of residents. The lofts across rom Ellewn, which are adjacent to the proposed maintenance yard, represent many more hom8O\Yl"lers. Our neighborhood is full offamilies, including children and pets that \YOuld be harmed rom the noise, dust pollution and general negatiw connotation that a maintenance yard \YOuld bring to our area. I urge you to do awry thing necessary to awid placing this yard across rom our home; doing so can only result in many residents leaving the area and the il'le\4table decline in property \/Blues that a maintenance facility would bring to our neighborhood.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Fujita			X															I fully support the downtown streetcar ilea. AIlhough I do rot 1M: in the downtown area, as a frequent visilor to downtown, I would be a riler during major events such as AniIm Expo or the Tha..,! Show. As such, the LocoDy PIelimed AIlernative would be IWCh nme useful to IIll1han if the s1reclcar fuIk>wed the 9th Street al!emative. The LP A would aID link the streetcar wilh Metro RaiJ. at 7th! Metro Center, whi:h IIllkes sense to IIll. Sooner or iarer, the streetcar should be made bi-directional on Broadway or ewn along its entire route. AIlhough this would mt be an issue fur penple ottending a major colIWIllDn center event, I could see how the current one-way route could be discouraging fur SOIlll potential riIers. SOIlllbody who started at Broadway and O\yIq>" would have to make a 1arge lonp to get hack to the starting poinL Ewntually I hope that the streetcar would be successful emugh to extend to IIlllIiple routes, wilh streetcars going to Chinatown or other areas near downtown. I look furward to getting beyond the discusmn and seeing SOIlll tracks laiI.
Gahbauer				X										X				Consider impacts to existing bus routes on the streets that the streetcar would serve, and - more importantly - to consider ways in which bus transit service could be improved as a result...I urge the City and Metro to study the visual impacts asscociated with the project and to strongly consider at least one of several streetcar technologies that would eliminate the need for overhead wites, such as (....), which use various methods of safely embedding the power supply in the ground.
Garcia														X				When preparing the emAronmental clearance documents for the Downtcwm LA Streetcar project, please examine the potential impact it will haw to bus operations. I'm concerned that the project as currently configured will significantly add to the congestion which will slow down bus seNce and whicle mmement in general. I'm particularly concerned about Hill Street since it is one of the most heavily used streets for buses and is schedule to to get ewn more bus lines due to the shrinking the number of southbound tl"8\ellanes on Broadway to one. Considering the City ongoing financial situation, I also concerned as to how it going pay for streetcar operations.
Giles		X												X			X	We're working with Mr. Joseph Hellen (Property Owner) in the hopes of reactivating the Roxie, Cameo & Arcade Theatres (500 block of South Broadway) for entertainment in the very near future, and so we're greatly interested in the ultimate success of the Streetcar program and appreciate this opportunity for comment. We just have a few questions regarding this initial EIR/study and presentation... Given that the Streetcar, while on South Broadway, will travel in the existing, "southbound" lanes of traffic, we're interested in the future placement of the Streetcar stop on the 500 block of South Broadway. Thus, would the stop be "centered", mid-block, or will it be placed at the end of the block as some of the bus stops are? For our design and planning purposes, we're trying to establish how or where our patrons will cross the street once exiting the Streetcar. Additionally, this question may be premature, but will there be advertising opportunities for businesses and even, "incentives" for "local" businesses to advertise on the Streetcar? Notwithstanding the existing local ban, will the Streetcar feature digital signage for advertisers? Lastly, what are or where could we find data on (if any) "safety issues" surrounding the operation of the Streetcar? Does such a system tend to cause more traffic accidents? Are there many individual, physical injuries caused directly by the Streetcar in other cities? We intend to cater to the Downtown,"elderly and aging" community, thus, any and all detail regarding the accident experience for such a system would be greatly appreciated.
Gilles		X																My wife and I live in Los Angeles - Beachwood Canyon. We also have an apartment in Portlahnd in the Nob Hill Area. Portland has excellednt public transportation. Our apartment is within 1 block of the Portland Streetcar line. We can catch the tram and be in the heart of Downtown Portland in about 15 minutes. This line also bisects MAX, the light rail line to PDX. We don't need to drive while in Portland and we can grocery shop, dine and have an adult beverage and get home safely. Los Angeles had the best system in the world. Want to regain the best status? Try the Los Angeles Circular Streetcar in downtown!!!
Grobet		X																Why not have Dash create a rout on the future street car alignment to test the waters on how many people would benefit from this route.
Grossman			X		X						X		X	X		X	X	We have serious concerns regarding the City's option to place a streetcar maintenance and storage facility (the "facility") between Hill and Broadway, just south of Second Street. We reside at the Pan American Lofts (Third and Broadway), which are owner-occupied condominiums on the same block as the proposed site, and we anticipate rail construction will bring both noise and air quality disturbances, including road work, traffic re-routing, dust, etc. – both in front (Broadway) and behind (Hill St.) our residence. Putting the facility on our block means we'll endure construction on three sides – and in the end be forced to endure having the facility beneath the windows of half of our building's owners. Our reading of the Initial Study is that system construction alone will occur during a 14-hour window (7 a.m. to 9 p.m.), plus intersection construction will occur at night. Then, according to the Initial Study, the long-term plan is for streetcar operation on 18- and 22½- hour schedules, guaranteeing increased foot traffic and even more noise. A maintenance/storage facility with streetcars and workers pulling in and out at all hours only exacerbates the continual nuisance. Also, streetcar construction may precede, follow, or be concurrent with the Federal Courthouse construction at Second and Broadway, compounding all these problems. Further, consider that the Pan American must be historically preserved under the Mills Act, and any study of this site must take into account possible damage to our home, including the underground structure. As homeowners, we are also concerned that all of this will degrade our home property values. However, we hope it is already apparent this site is not the ideal location for other reasons. Consider: -- The north end of Broadway is regularly closed to traffic for marches and street fairs – usually from Temple to Seventh. Does it make sense to put the facility where it will be blocked by foot traffic on Broadway? -- The site is near two heavily used tunnels at Second and Third. These are often closed for filming, creating traffic bottlenecks on Hill St., which then causes problems for the 1,300 senior citizen residents of Angelus Plaza, which requires access for families, tour busses and emergency vehicles. Will the facility avoid blocking traffic on Hill St.? -- As mentioned, a federal courthouse will go up at Second and Broadway – a half-block away – bringing its own set of long-term pedestrian, automobile, and security issues. -- This location is between many residential units on Hill and Broadway (not just ours), a hotel, and nearby business, cultural and tourist areas, and the short-term parking lot on the site is used by people attending the courts, Disney Hall, the Music Center, museums, shops in the neighborhood, the historic core, etc. Broadway is being revitalized. It makes much more sense for the facility to be placed further away. -- Between Bunker Hill, the Los Angeles Times, Angels Flight, Grand Central Market, Angelus Plaza, the two parking structures adjacent the Second and the Third Street Tunnels, and Broadway, there already exists a great amount of daily pedestrian and automobile traffic. As

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
GSA - Matthew Jear	Federal		X	X						X	X			X			X	GSA is in the process of planning and constructing a United States Courthouse on the block bordered on the north by 1st Street; on the south by 2nd Street; on the west by Hill Street; and on the east by Broadway. In response to the City of Los Angeles Notice of Preparation of DEIR/EA and Initial Study for the Restoration of Historic Streetcar Service in Downtown Los Angeles project, dated January 3, 2013, the General Services Administration (GSA) provides the following comments: 1) GSA requests a Threat and Vulnerability Assessment of the streetcar, in relation to the courthouse, to be conducted. The Assessment should be consistent with the Federal Transportation Administration's Public Transportation System Security and Emergency Preparedness Planning Guide. This should be coordinated with the GSA and United States Marshals Service. 2) According to the City's Notice of Preparation and Initial Study, the streetcar routes/tracks will border the courthouse site on 3 sides. In addition, the schedule of completion for the new courthouse mirrors the completion schedule of the streetcar. The close proximity of the streetcar route/tracks and the overlapping completion schedules for both projects, require careful coordination between GSA and the City. Close coordination of construction, including placement of track and stop(s) will need to be undertaken and should be momorialized in a Memorandum of Understanding. This is partially due to the overlapping construction schedules, but also due to mission critical ingress/egress points at the courthouse. 3) GSA requests an acoustic study of the street operations and its impacts to the proposed courthouse to be conducted. There are sensitive receptors within the courthouse that must be carefully considered. 4) While it is understood there are no current plans to extend the streetcar further west, it is likely at some time in the future it could be extended to Union Station and the development of the current phase should consider such expansion. Furthermore, should such expansion occur it would be highly desirable to choose a route that would serve 300NLA and Roybal since there are a number of potential riders between this complex and the courthouse that could be served. 5) It is understood overhead wires will be used to power the street cars. If feasible, new, wireless technology should be used. If not, wires should have a minimal profile and be incapable of concealing devices. Cluttering up the environment with a network of overhead wires is aesthetically less desirable.
Helfand		X																Though I am not a resident of Los Angeles (I live jn Arcadia) I am all for the restoration of Streetcar service in Los Angeles. Having been bom in LA and lived in Hollywood I rode the Pacific Elecbic and LA TL lines almost every day and know how important such transportation is and how much the merchants can benefit from this mode of transportation. Please advise if~u need my assistance ...... .I will be unable to attend the meeting. Morley J. Helfand morleyhelfand@yahoo.com
Hillery																X		Thank you for the opportunity to express my comments regarding the South Park Maintenance Facility Project. am a sewn year resident owner in the Grand Lofts, located at 330 West 11th Street (comer of Grand Awnue and 11th Street). As part of our Grand Lofts purchase agrasment, the current d .... loper EVOQ and their predecessor are obligated to provide a permanent parking structure with at least 132 spaces. We are currently using the parking lot at 1150 S Grand Awnue, which is a potential site for the streetcar maintenance facility. I support the mission of the Streetcar; hClWe\er, I haw ob\tous concerns should 1150 S Grand Awnue seM as the site for the facility.
Hoon																X		I and my belo'o8d dogs of The Grand Lofts do not and will not .... r app",,", of your awful city planners/architects/ignorants to take away our God gr.en rights to parking. You will be ruining many families and precious li",s. Is that how the City of Los Angeles wants to build the newiy bslowd rail project?
Hotchkin		X															X	We have been closely following LA's Streetcar progress and are excited with your progression. In reviewing the Notice of Preparation of a Draft Environmental Impact Report/Environmental Assessment, we noticed that on page two it calls out for the TPSS (traction power substations) and overhead contact system to be high voltage of approximately 600 VDC. Is it your intent to remain at 600 VDC, or will you also be considering 750 VDC? Currently all the modern streetcar systems operating in the US are 750 VDC, so the difference is a significant item of note to United Streetcar, the first US manufacturer of modern streetcars in over 60-years
HuangFu		X	X							X	X		X	X		X	X	I'm currently a homeowner in the building known as Elleven on corner of 11th and Grand Ave. While excited to hear that I will be paying more property tax to support a street car system that I potentially may not be using. I'm also really concern with the potential plan that will route street car through 11th street. I am strongly opposed/concern with the current route proposed through 11th street. 1. 11th street is only a narrow 2 lane street. Olympic, 9th, and 8th street are all wider to handle the additional traffic this project may create 2. The noise level and impact to property value to the homes owners on 11th street. This is personal to me as my windows is facing 11th street. Its already used heavily for emergency vehicle from the firestation during all hours of the day. 3. The proposed maintenance and storage facility currently on Grand and Eleven. This will take significantly already short parking lot availability near homes where guests are visiting. And also yes REDUCE of property value for existing home owners in this area. (would YOU want to live near a train maintenance yard?) In short, i'm opposed to the current route of street car through 11st street and proposed maintenance and storage facility as a resident and someone who is familiar with this area. While we are at it, i will also ask/voice my concern with the current plan 4. Will the one way loop really reduce travel time and is a route that is being used by majority of people? it seems like DASH is sufficient enough to travel between all the points of interst 5. Is streetcar really just a novel idea or a useful transportation tool? does is really move more people with less energy and reduce traffic in the area? 6. Will streetcar create more crime and be used as potential tool for terrorist attack? I'm hoping these questions will be seriously look into and answered. Until then, I'm skeptical of the current plan and is really not looking forward for this plan to be implemented. I have been supporter of DTLA redevelopment for years and purchased my unit in DTLA as a direct result (put my money where my mouth is). I wish the city makes a wise choice for its residence and visitors to create an environment that is positive for continue revitalization of Downtown.
Hui		X				X								X			X	The following are comments based from the public environmental impact hearing for the Downtown LA Streetcar. I am concerned with the effect the planned streetcar will have on the character and atmosphere of the Downtown Los Angeles. Any project in the area must preserve the historic character of the area or it really will not be any kind of 'restoration'; in light of this I believe the train used must be historic instead of the ugly white and green modern car that was on all the pamphlets/webpage. You can reference San Francisco's historic streetcar page for better streetcars http://www.streetcar.org/streetcars/189/. Currently there is a mystique that comes with historical significant and this has resulted in a slew of artsy and small businesses taking root. If a modern streetcar (like those in Seattle) is used the character of the area will be spoiled and set a tone for the developments/shop in the area; which may lead to slower development and dilution of downtown's character. I am also concerned with the length of the streetcar as it will block up traffic on all the turns it makes, not to mention from its frequent stopping on every street. I believe that a smaller streetcar (see the link above) may mitigate the turning issue and may reduce incidents of hitting pedestrians.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Irmler		X											X			X		I support the Downtown Streetcar, but I'm strongly against a Maintenance and Storage Facility on Grand Ave. between 11th and 12th. This will not just be an eyesore, it will greatly depreciate the value of the three residential buildings Evo, Elleven and the building on the corner of 11th and Grand. In addition, it will remove the last big parking lot in this era with the construction of the new apartment buildings on Grand Ave. between 12th and Pico. I hope you are able to use one of the other possible locations for the Maintenance and Storage Facility
Jackson			X	X													X	Are there plans to build the street car so that it can be continued at some point in the future? A link to LIttle Tokyo or Echo Park perhaps? Also, the proposed "street car" car design was horrific! I know it was a concept, but please don't overlook DTLA's famous art deco aesthetic when designing.
Jeff											X					X		Of the three locations designated as potential sites for the Streetcar maintenance yard, regardless of whichever one is actually selected, there is concern regarding the possible high levels of noise so close to residential buildings. It was intimated to me during said meeting, that at this time it has not yet been determined if the majority of the work in the maintenance yard will occur during the day or at night. Either way it would be a disturbance to the nearby residents. I truly believe that noise mitigation efforts should be applied in this regard to properly address these concerns.
Johnson		X																I would look to add my voice to those who would like to see the restoration of a downtown street car. I support the initial downtown streetcar proposal 100%
Johnston																	X	Really Wide sidewalks please!; Consider adding more trees to your sidewalk plans. Never Enough trees downtown!; Minimize poles: Consider combining light poles, street lights poles to hold the wires. Also run wires off building (like in the past); Good info signs at end stop (what is nearby: neighborhoods/blocks); make easy to find (some king of landmark); minimize trash cans/benches=collects trash/messy; the cars itself yellow and green like the past!; minimize advertising on the sides of the cars. Look classy, not a rolling billboard; hopefully will follow portland model especially quick construction/surface methods. Avoid Utility probles with DWP like Expo did.
Joo																X		I really want to make it clear that you will NOT be able to build a maintenance facility on our parking lot.
K+R Design Inc	Organization		X															We believe that the title of the project "Restoration of the Historic Streetcar" is a misnomer. The envisioned streetcar is completely modern and restoration of the historic streetcar is intended. The reason I would like to bring this up is to point out that if no historic restoration is intended, the proposal should be looking at other alternatives which might be cheaper, more efficient, quieter, consume less energy, and have lesser impact on traffic and the environment. We wouldlike to submit to you that one such option is the Personal Rapid Transit (PRT) system. In this matter, I believe that the scope of the EIR only explores alternative routes and does not explore alternative transit technologies. We suggest that alternatives for transit technology such as thePRT be included in the scope of the EIR.
Kawaratani			X											X				I was a city planner for the LA/CRA for 31 years from 1962 to 1993. I worked on all the highrise buildings on Bunker Hill and most of those in the CBD Project, including the convention center and U.S Bank Buildings, and Broadway and Spring Streets. So I am familiar with Downtown Los Angeles. I think the Locally Preferred Alternative route is pretty good in terms of serving the proposed ridership. But I am concerned that it will be a problem on 7th Street because of traffic, many pedestrians, the proposed bikeway,and the length of the street cars. The blocks are also short and the 7th and Figueroa intersection will be a major challenge, especially with all the pedestrians and cars. I guess that is why you have a 9th Street Alternative, but it is terrible, as it doesn't serve the Financial Core area at all. The financial core is along Figueroa Street to Grand Avenue, and 4th Street down to 8th street. The 9th street route will only serve the South Park Area and primarily housing. Visitors don't want to go to housing. 6th Street is one-way east and MUST be your Alternative to 7th Street, not 9th Street. In fact, it should have been the Locally Preferred Alternative. It will provide excellent service to the Financial Core Area, including the Bunker Hill area along 5th Street. You will be missing a big opportunity if you pass on 6th Street. I brought it up before, but it was ignored. This area is the largest office population in Downtown. It will conveniently serve the Bonaventure and Biltmore Hotels and the Central Library. You have the responsibility to at least look at it in the Draft EIR.
Kawaratani			X															I commented eartier that the 9th Street Altematiw is terrible because it bypasses the Financial Core, The much better Altematiw Yt'OUld be 6th Street.
Kay		X		X	X	X					X		X	X			X	This project is unnecessarily duplicative of existing service on the red and purple subway lines, the under construction regional connector light rail line and many bus lines that pass through Downtown. The streetcar project will also subject Downtown to several negative effects in the following areas: 1. Transportation/Traffic - This project will add additional over-sized vehicles to narrow Downtown streets and further worsen already-existing poor traffic conditions. 2. Air quality - The additional traffic created by this project will worsen Downtown air quality because of additional exhaust caused by increased idling of cars in traffic on Downtown streets. 3. Aesthetics/Visual Quality - This project will be built in an area with many historic buildings and the infrastructure required for the streetcar (including the service yard, the power substations and the overhead wiring) will interfere with the views of the historic buildings and will decrease enjoyment of these historic resources. 4. Noise - This project will add additional noise in the project area late in to each night (according to the proposed service schedule). The construction of the project will also add additional noise to the area. 5. Safety - Downtown is already an area with significant pedestrian traffic. Streetcars making turns at intersections will create dangerous conditions for pedestrians. 6. Construction Impacts - The construction will significantly contribute negative impacts of noise, traffic and worsened air quality. 7. Historic resources - The street route will interfere with the future restoration of many historic buildings in Downtown by preventing of the use of space in front of buildings for construction staging that would be necessary for a restoration project. 8. Environmental Justice - This project will further contribute to the gentrification of Downtown and drive out many current low income residents.
KSP																X		I am against the city's proposal to build a maintenance & storage facility at 11th & Grand for the streetcar. This location is in the heart of residential neighborhood and is not an appropriate use of space. I hope our city planners exercise good judgment & common sense and build the facility elsewhere.
KSP II																X		Why build a industrial streetcar garage in thl middle of a residen!ial neighborhood The proposed fucility is directly adjacent 1D densely populared residen!ial1Dwer. The proposed site at 11111 and Grand is also in very chse proximity 1D LA Live, and IIlljor school (FIDM), downtown Ralphs grocery, ~le apar1Jmnt bmlling restaurants & retai1 s1Dres, and thllist goes on. The proposed sites at 11111 and Grand are fully utili2ed as parking hts during events at thl LA Convention Center and Staple Center. Have you furgotren so qui:kly 1hat parking is a limited resource in downtown, especially in thl Sou1h Pad< area, which is directly linked 1D LA Live? I ama registered vorer and a kmg-time resXlent of downtown Los Angeles. AND I AM SO ANGRY TIfAT 111H & GRAND IS BEING CONSIDERED FOR TIIIS PURPOSE.
LADWP Sanitation	Local														X			Based on the project description, we have determined that the project is unrelated to sewer capacity availability and therefore do no have sufficient detail to offer an analysis at this time. However, as you develop your project alignment please ensure that you put in place mitigation measures whenever your project comes near, in contact or interfere with a sew infrastructure to guarantee the continued safe operation of such structures. Should the project description change, please continue to send us information so that we may determine if a sewer assessment is required in the future.
LAFD: Forestry Division	Local					X	X	X	X			X						The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed in the Draft Environmental Impact Report.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
LAFD: Health Hazard. Materials	Local											X						The Health Hazardous Materials Division has no objection.
LAFD: Land Development Unit	Local											X						This project is located in close proximity to the jurisdictional area of the Los Angeles County Fire Department. However, this project is unlikely to have an impact that necessitates a comment concerning general requirements from the Land Development Unit of the Los Angeles County Fire Department. Our emphasis is on the availability of sufficient water supplies for firefighting operations and local/regional access issues. However, we review all projects for issues that may have a significant impact on the County of Los Angeles Fire Department. The County of Los Angeles Fire Department, Land Development Unit may also comment on conditions that may be imposed on a project by the Fire Prevention Division, which may create a potentially significant impact to the environment.
LAFD: Planning Division	Local											X						The subject property is entirely within the City of Los Angeles, which is not a part of the emergency response area of the Los Angeles County Fire Department (also known as the Consolidated Fire Protection District of Los Angeles County). Therefore, this project does not appear to have any impact on the emergency responsibilities of this Department.
Lee			X													X	X	I am a resident of the Grand Lofts located at the southeast corner of 11th Street and Grand Avenue and I am concerned about the proposed location of one of the "maintenance and storage facility" areas that is located along 11th Street (see attached PDF). I am certain that other residents in the Grand Lofts as well as neighbors across the street (EVO and Elleven lofts) aren't too thrilled about the proposed location. There are few issues with the proposed location: · As it is currently shown, it includes our building's parking area. Our parking lot is located directly south of our building along Grand Avenue (northern block). What will happen to our parking area? · Along 11th Street, Grand Avenue and immediate vicinity is mostly residential developments as you can see in the attached PDF. It also sees the most amount of pedestrian traffic because of the many residents living in that area. There are commercial/industrial areas with open spaces (used as parking lots currently) east of Olive Street and west of Flower Street that seem to be far more logical place for a maintenance and storage facility. What were the reasons that these areas were not considered? · I think the downtown residents, who are footing the Streetcar bill by paying additional property taxes, should have a say in where the maintenance and storage facilities should or should not be located. When the Streetcar measure was proposed, I do not recall that there was any mention of these maintenance and storage facilities. This is a big deal to the downtown residents and if this information was provided at the time of the ballot, I think many residents might have voted against it. Will there be community workshops or meetings where we can voice our concerns regarding the Project?
Leger																X		am writing to express our concems and opinions in regards to the city considering our residential parking lot, at 11th and Grand, as one of three proposed areas for the maintenance rail yard. 1) Our residential building, Grand Lofts, is across ft"om two other residential buildings here on Grand Awnue in the South Park area. lhese are our homes. We haw families with children and pets in these buildings. A streetcar maintenance rail yard in an area directly next to, and across ft"om residential buildings would increase the noise, traffic, and danger to children and pets that Ihe in these homes. 2) In addition, those of us that enjoy li\Ang downtown do walk and take public transportation whenewr possible, howe\er, we still need to use our cars. Our building does not haw underground parking like some other residential buildings in the area. Because it is adjacent to our building, and fenced, it pl"O\ides a safe area for our families to access their whicles, day and night. We need that parking lot exactly where it is, br the safety and con\enience of our residents. It is the only one we h8\e. For the reasons stated abO\e, and others not listed, my husband and I are among those who do not want our residential parking lot at 11th and Grand to be considered as a location for the streetcar maintenance rail yard.
Libit - Pan American Loft Assoc.	Organization															X		We believe that the Broadway/Hill/2nd street location for the maintenance facility will cause an impact on our immediate downtown neighborhood and careful design consideration or an altemath.e location must be selected for this facility. The city and the streetcar planners should strongly consider the alternate locations (Hill & 5th, 11 & Grand) or propose design solutions that will not harm the gentrification of our area of downtown. The impact that a -maintenance & storage yard- can cause on the pedestrian, residential and urbanist quality of life on Broadway between 2nd & 3rd will be dramatic if done with a heaW hand. These issues can be resol\eCI by using the maintenance facility as a catalyst for smart dewlopment and integrating it into a mixed use project or other wnture that impl"O\eS the civic & cultural life of northern downtown. This facility will haw a negati\e community impact if it is just an open yard with a lifeless concrete building.
Lin		X																Streetcar would be a wonderful transportation in Downtown.
Lin			X													X		strongly fa\or the locally preferrec:l alternati\6. It gi\6S much more 'Nidth to the areas seMKI. The 9th street plan 'Nill seM less Rarea". 2. I do not like the maintenance and storage facilities at 11th St. I believe the 5th St. Maintenance facility makes the most sense based on location. The 2nd/3rd St maintenance facility may also make sense, but I still fa"" the 5th 51. location.
Los Angeles Conservancy	Organization			X		X										X	X	Many streets along the routes of both the locally preferred and 9th Street alternatives historically accommodated streetcars from various lines, and appear to be appropriate for a return of service. Nonetheless, we urge that the design, construction, and operation of the streetcar avoid or minimize adverse impacts to historic resources along the selected route. This includes location of traction power substations (TPSS), overhead systems, and maintenance and storage facilities. If significant impacts on historic resources are anticipated, we ask that preservation alternatives are evaluated in the Draft EIR/EA. In the past, streetcar facilities were integrated into buildings that became part of downtown's urban fabric, such as the Pacific Electric Building and the Subway Terminal Building. The potential locations identified for the new streetcar maintenance and storage facilities are currently vacant sites, which should retain the option for future infill construction to reconnect the streetscape. If new construction is anticipated, we recommend guidelines to ensure appropriate scale and massing with the surrounding context, particularly when adjacent to historic resources or districts. In addition, opportunities may exist to reuse or incorporate remaining elements of the historic streetcar system, such as existing eyehooks for overhead wires on buildings along the route.
Maki																X		Hello: My office is bel<7tN and we haw another place at 11th and Grand across the street. We are opposed to this project. If the city wants to imprme this area, putting a rail yard in it is contrary to that notion. There are other locations south/east of this area. I hope you will consider our strong opposition. Not to mention the emAronmental impacUnoisHbrations-dirl in our residential community. Thank you.
Mendelson				X		X								X			X	Transportation/Traffic - The street car may be unnecessarily redundant with other similar forms of public such as the proposed Regional Connector, Red and Purple lines, and Metro buses 2, 4, 10, 28, 30, 40, 45, 81, 83, 84, 90, 91, 94, 302, 330, 728, 745, and 794. Aesthetics/Visual Quality - This street car's extensive infrastructure (service yard, power substations, and overhead wiring) may further diminish visual quality and enjoyment of the area's architecturally significant buildings. Historic Resources - The route will complicate future historic renovation efforts by limiting the available of construction staging space in front of the buildings. Environmental Justice - Inequity may be experienced by lower income riders if a notably higher fare is charged for the street car compared to other similar public transit options.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
METRO	Local																	1} Maximizing Inter-modal Connectivity: The project sponsor should consult LACMTA staff regarding how the project can enhance connectivity with other forms of transit, especially the connections with Union Station; 2} Metro Regional Connector: Construction of the proposed project may coincide with construction of the Metro Regional Connector underground light rail project along 2nd Street. To avoid any potential conflicts during construction and subsequent project operation, the project sponsor should coordinate planning, design, and construction efforts with the Metro Regional Connector Project Team and Design Builder during various planning stages and prior to the start of and during construction; 3} Project Construction Impacts: Several transit corridors with Metro bus service could be impacted by construction ofthe streetcar and its associated maintenance facility. For short term construction activities that may impact Metro bus lines, Metro Bus Operations Control Special Events Coordinator should be contacted at 213-922-4632. Long term construction activities should be coordinated with Metro Service Planning & Scheduling at 213-922-1228. Municipal bus service operators including LADOT may also be impacted and therefore should be included in construction outreach efforts; 4} Operational Impacts: Streetcar service sharing right-of-way with Metro and municipal buses may result in reduced bus operations capacity. Potential disruptions to bus operations should be analyzed in the EIR and appropriate mitigation measures identified in consultation with Metro Service Planning & Scheduling and with other municipal bus operators. Moreover, the agency responsible for operating the streetcar service must also incur the costs associated with implementing the appropriate mitigation measures;
METRO - Carl Ripaldi	Local			X					X	X	X					X	X	1. Within the organization chart for the project presented in you Powerpoint Presentation it would be helpful to identify who in Metro is dealing with the Environmental Clearance in association with the City of LA as well as who the Environmental Consultant is for the project. This contact information is essential. 2. The Initial Study indicated that there are three potential sites for the Storage and Maintenance Yard for the project. You need to explain how much trolley storage is necessary for this project and describe what maintenance operations will occur in the yard. What are the noise and hazardous materials storage issues associated with this yard? Are the sites identified compatible with their surroundings? Are these sites adjacent to commercial and residential complexes? 3. I would suggest that for the figures included in the documents where you chose highlighting for the alignments that a choice is made that will show up on a black and white copy of the study. Not everyone has access to a color printer. That way anyone who chooses to run off a hard copy of the document will be able to see the alignment clearly. 4. Regarding the TPSS requirements for the Project, five or six will be required. Have these been assessed for space availability and possible adjacency problems? For example, are some of these sites next to residential or business complexes? It may be necessary to provide aesthetic enhancements and landscaping to the TPSS plans to make them acceptable to adjacent businesses and residential complexes. This has been done for a number of TPSS sites serving Metro Light Rail lines. 5. The Environmental Studies need to address the presence and alignment of Metro's Regional Connector Project, as well as the projected dates for constrution. Where along the proposed alignment will there be Transfer opportunities for passengers form both the Trolley and Regional Connector lines? Also, what are the expected dates of construction for the Trolley Project versus the Regional Connector Project? Will there be conflicts with utility construction and cut and cover construction of stations for the Regional Connector with the surface construction activities for the Trolley Project?
Miller			X															I see one issue with the route. The top is a mess and unclear what it is trying to accomplish. I'd rather it come down I-lope/Flower for a bit and include the Financial district and Ubrary. The 2nd Street connector could then be canceled, saving billions. The Red line already goes to 7th Street from near Little Tokyo. I understand that the "thin part- of the streetcar route is to allow quick retums to the other side, but the Red Une already plOlAdes this. The -7th St Altematiw" is the correct choice, to connect with the Metro.
Morland		X																Keep up the great opportunity to bring our Downtown together with dignity!
NAHC	State					X												The NAHC advises the Lead Agency to request a Sacred Lands File search of the NAHC if one has not been done for the 'area of potential effect' or APE previously. Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project
Nathie																X		I would h8\e sent this email sooner, but my building just sent an email out today notifying us about the proposed maintenance yards that will be across "tom our building at Ellewn Lofts. 1. How long will these be -maintenance yards- for, and 2. What are local residents supposed to do about parking for themseh.es and their guests? When &\ents are going on at LA Uw those parking lots prcNde us with very necessary additional parking. Being forced to park at farther lots leaw the females in our household wry wlnerable at night time walking to and from their whicles. It's bad enough that the city preys on us with parking tickets, na.v they want to take away our parking lot. Disapprove.
Nesbitt		X	X													X	X	Thank you for the opportunity to respond to subject reports. I have been a Downtown resident since 1984 and have a keen interest in seeing this project brought to fruition. I am impressed with the project so far and feel it is well thought out. The few comments I have are: 1. I'm glad to see a spur running to 1st and Grand Ave. I hope that stays in the final plan. 2. I strongly feel that the 7th Street (LPA) is by far the best route because of the ability to interface with Metro at Figueroa and 7th Streets. 3. The location of the Maintenance and Storage area seems to be a problem since all three sites, and any site along the route, will prevent that area from being developed with residential/commercial applications. I feel that the northern most location bordered by Hill, Broadway, 2nd and 3rd Streets is the best of the three. 4. I have seen no reference as to the design of the streetcar itself other than the current pictures. I hope the selected cars will be of a more interesting design; perhaps unique to L.A. to add some interest.
Netzel																X		My husband and I currently lh .. in the Grand Lolls located at 330 W. 11th. Street. #401. Los Angeles. CA 90015. We lme li .... ng downtown with the nightlife, L.A. Liw, the new restaurants and most importantly many activities that our new daughter who is 3 months will enjoy. We are currently in the process of expanding our loft so that we may liw here comfortably for many years to come. We are here to stay for a wry long time. I-lol.Ye\er, we haw heard that the city is considering putting the maintenance rail yard in our current parking lot on 11th and Grand Awnue. This would definitely hinder our long term plans and be of much incomenience to our current living situation. With children, conwnience and location is key. On that note, while I support the Streetcar, please reconsider the location of the rail yard. I would like to be a resident and owner of Grand Lofts for a wry long time.
Nicholas		X																I am a Downtown LA resident li\4ng in the Historic Old Bank District, I would like to declare my support for the restoration of historic streetcar service in Downtown Los Angeles. Downtown LA is undergoing se-.eral positiw transformations, The addition of an intuitiw transportation system seems fitting with regards to other projects planned for this area, A streetcar will not just make getting around downtown more efficient, but will also add character to the neighborhood. As a small business owner opening up a cafe along the proposed route of the streetcar I lilly support and endorse this project.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Norton		X	X											X			X	I find it very problematic that the connection between the financial-hotel core and the Staples-Convention Center area is so awkward. It seems too bad that the necessity to maximize constituency damages the logic of the route. Obviously the preferred route would to use 7th Street for two-way trolley traffic and send southbound trolleys via Flower. In lieu of this, the 9th Street crossing makes better sense--both north- and southbound routes remain in closer proximity this way, easier for visitors to comprehend and, hence, use. The northern "tail" to Moca seems an unnecessary complication; no such extension has been proposed for the southern end to connect with the Convention Center at Pico. I hope the trolleys will look similar to the one shown in the proposal photo. Not only do low-slung trolleys make boarding easier and safer, they are very modern appearing, proclaiming Los Angeles a forward-looking metropolis. Forget cutesy, go sleek. Also the route should be as traffic-free as possible. I doubt whether the plan includes much exclusive right-of-way, but the more that can be obtained, the better. Progressive cities are realizing that closing off street lanes for bicycles, pedestrians and transit--once considered unthinkable because the movement of cars took precedence over everything else--is an increasingly attractive and popular option. This point should never to be forgotten: the purpose is to improve and enhance the movement of PEOPLE, not vehicles.
Nussdorf		X															X	Firstly, I'd like to thank you for your progress with the LA Streetcar. I own a condo on Los Angeles St. and I work at FIDM and I'm so excited about how the streetcar will impact the neighborhood and my property value. One thing I want to request is that the streetcar stays open for at least a half hour after the close of the bars. I believe that this will help the nightlife business downtown and keep the streets lively and safer. I believe that it's more likely that bar/restaurant patrons will use the streetcar more than early morning commuters so if it's between opening early or staying open late, I'd suggest staying open later. Also, I'm hoping that the fare isn't too high. I don't think people would want to pay $1.50 to take a streetcar a few blocks. Perhaps one option is that with each fare purchase, you get some kind of credit to a local business. That way when someone spends money on the streetcar, it encourages people to use the local businesses.
Oie		X	X															This looks great to us and we are looking forward to it. Our family lives at Main and 6th Streets, so even though the city is currently very walkable, it will be great to be able to hop on the Streetcar to get to LA Live, and come home from Ralphs, etc. I like the 7th Street proposal, because that is where so much of the downtown action is (restaurants and stores), but understand, if for traffic reasons, 9th Street is used.
Ong																X		I am writing to clarify the location of the 30,500 square foot rail yard. On the Bureau of Engineering report W.O. E1907459 it states that the site for this rail yard is on the southeast corner of 18t and Grand. Howewr, on the Notice of Preparation of a Draft En~ronmental Impact Report dated January 3. 2013. it states that this rail yard will be at the southeast comer of 11th and Grand. My concern is that the Grand Lofts is on the southeast comer of 11th and Grand and would really low to haw the location clarified. Your preferential attention on this matter will be highly appreciated.
Oseida																X		as a current horm owner and resilent of south park rm opposed to the proposition to place a starnge lBcility near my property, there are other locafun in the area 1hat you can use, 1hii is a prim: housing locafun.
Pan American Lofts	Organization															X		We believe that the Broadway/Hill/2nd street location for the maintenance facility will cause an impact on our immediate downtown neighborhood and careful design consideration or an alternative location must be selected for this facility. The city and the streetcar planners should strongly consider the alternate locations (Hill & 5th, 11 & Grand) or propose design solutions that will not harm the gentrification of our area of downtown. The impact that a "maintenance & storage yard" can cause on the pedestrian, residential and urbanist quality of life on Broadway between 2nd & 3rd will be dramatic if done with a heavy hand. These issues can be resolved by using the maintenance facility as a catalyst for smart development and integrating it into a mixed use project or other venture that improves the civic & cultural life of northern downtown. This facility will have a negative community impact if it is just an open yard with a lifeless concrete building.
Park																X		I protest all plans to construct a Maintenance & Storage Facility for Streetcars at 11th & Grand. This is a \Abrant residential neighborhood and the city is planning to build an industrial maintenance yard adjacent to families, restaurants, and retail stores. As a resident of downtown, I expect our city planners to promote commerce, controlled population growth, and exercise good old fashion common sense, Do not build an industrial maintenance yard next to homes,
Park																X		I recently learned that the city is planning to place the Maintenance & Storage yard for the appl"O\ed streetcar system on the south east corner of 11th and Grand Ave. Yet another example of an extremely poor judgement by the city planners. I am amazed at how a great city like Los Angeles is consistently plagued by bad judgment after another by our esteemed city planners. Proposed site is located directly in South Park, which currently has a \Abrant real estate market and is one of the premier neighborhoods that is driving the revitalization in Downtown Los Angeles. The residents of South Park are the base consumer of the sunounding businesses and amenities, including LA Lhe, and your proposal to make South Park less appealing will have a direct consequence to the local economy. It is reasonable to expect rom our city planners to be ad\ocates in creating a clean and safe en\Aronment for its residences, to promote the local economy. and to improw property 18luas. This proposal will h8\8 a completaly opposita alfact. The proposed site is located in a residential neighborhood occupied by families, students, and young professions. These are the demographics that many sunounding cities are competing to attract and your plan is to create a Maintenance & Storage facility in the heart of the most premier downtown neighborhood. Why? Your plan will have a negative impact on the city's ability to generate income rom property tax, sales tax, business licenses, permits, etc. I am strongly against the thought of utilizing 11th & Grand Ave as a Maintenance Yard for LA's streetcar.
Pastushenko		X	X										X			X		I am a resident of the Evo South building on grand and 12th. I voted for the streetcar and think it will be a wonderful addition to our downtown and first of all thank you for taking a part in this long awaited project. My big concern is the maintenance / service area that is planned directly across the street front our beautiful building . I and some of my fellow residents feel that this site may not be the best place for this. Placing an area such as this in front of two major highly populated residential highrises may just do the opposite of what the streetcar set out to do and bring property values in the neighborhood down due to views at the maintenance area and probable tram traffic and noise excepted with the operation. Although downtown is quickly becoming more and more residential and we realize that finding a place for the service center is a challenge, there are still some options. For instance, there are multiple large lot areas east of grand ave close by, such as at Olympic , at 9th and at 8th that may be better suited for this. Also, there are large lots at northwest corners of olive and Olympic and olive and 9th that would affect the residential communities even less. All in all, there are better options and we ask the city to consider them carefully. Your attention and help is very much appreciated and if there are any questions please do not hesitate to contact me. Also, if you are not the right person to email, would you please let me know who is and / or forward this to them.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenshouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Patterson		X		X		X											X	My chief concern is walkability. Downtown LA is located in one of the most temperate environments on earth, yet we model our urban plan as if the pedestrian were of little account. Indeed, so many of the potential benefits of the streetcar refer to the success of the one in Portland, one of the wettest cities in the nation with an annual rainfall average of nearly 40 inches. Yet Portland is also a highly walkable city. Los Angeles is not, and downtown, where people actually do walk, is not providing sufficiently for the increased foot traffic. Furthermore, Broadway is unique. Nearly every building is an architectural treasure. I'm concerned that the focus on mechanized transportation ignores the potential the street has a pedestrian attraction. For nearly 10 years I lived on the 'Rambla de Catalunya' in Barcelona. This thoroughfare is a magnate for locals and tourists, providing a remarkable attraction that benefits local businesses and provides needed public space for an urban center quite nearly as covered in concrete as downtown LA. The famous tree-lined promenade (not to be confused with 'Las Ramblas', it's more prominent sibling) also permits auto traffic in two directions, and though narrow, the corridor actually functions surprisingly well in regards to volume and traffic. The 'High LIne' in New York also succeeds because of walkability. The emphasis on the pedestrian that made that remarkable, transformative thoroughfare happen seems to be regretfully absent from the urban planning of downtown Los Angeles. Jeff Speck, a respected urban planner and author of the informative recent book, 'Walkable City', observes that a streetcar is not always the 'mobility-enhancing, street-enlivening walkability bomb that their promoters would have us believe.' Speck rightly asserts that streetcars are only effective when the routes correspond to other transit networks and, most importantly, that they take people somewhere they can walk. Again, I'm no NIMBY, and I'm a supporter of any type of public transit. But there are major problems in downtown LA for the people who walk here: poorly maintained sidewalks, a lack of walking space for dog owners, autoprivileged thoroughfares, unsightly landscaping (tree planters that even Grozny would discard), poorly designed building frontage, etc. These are problems that no streetcar will solve. Only a concerted effort to consider the pedestrian will improve the livability of this exceptional neighborhood, and the success of the street car. My hope is that this streetcar will indeed promote development along Broadway and generate public revenue that can be invested in the community. But without a concerted effort to consider the walkability of downtown LA, the streetcar, I'm afraid, will merely travel through it.
Pavlish																X		We are emailing to register our STRONG objection to the possibility of choosing to place the maintenance rail yard for Historic Streetcar project in what is currently the parking lot iJr the Grand Lofts. We understand that the restoration of the streetcar makes sense for the economy of DnA. But as a resident here, it becomes clear that there needs to be a balance between the current explosion of grt7tYl:h and construction in this area and a reasonable sense of maintaining the character and bcus of our neighborhoods throughout this process. Grand Lofts is not a lUXUry high-rise with below-ground parking, doonnan, etc ... and as such without our parking lot it would be really difficult to liw here. It would be unfair to penalize the owners and tenants here when you could just as easily locate the rail yard somewhere else that does NOT take BNBy parking specifically attached to a building for the homeowner's and tenant's use. And as you are aware, this area caters to the Staples center, Nokia and LA Liw ... so other parking options are wry minimal most of the time, and non-existent during ewnts. Please rethink this as an option for the maintenance yard!
Perlo													X			X	X	Let me suggest several reasons why a maintenance yard at 11th and Grade would NOT be a wise choice. 1. The yard itself will have some tourist value. It should therefore be located in an area where tourism and trade will be enhanced. A location on Broadway would greatly enhance pedestrian traffic in a commercial area. 2. As a resident of 1111 S. Grand I have seen the value to the City in having residential buildings with greater value so as to provide greater property tax income to the city. A maintenance yard in the heart of South Park would not only discourage additional residential structures but will effect both value and desirability to future residents.. 3.I am also concerned about the message putting a maintenance yard in a burgeoning residential area could discourage future developers and residents from investing in the downtown area. One would have to be concerned that the city might "plop" something down in a an area where people are making botha financial and life style decision. Thank you foor your consideration
Poer																X		As a resident of The Grand Lofts, I am opposed to the proposal of building a rail yard for the Streetcar at the Southeast comer of 11th Street and Grand Ave. This happens to be the parking lot for our residence. After several years of legal issues with the original lot owners, we haw just recently been given our parking lot back. Losing this again would not only be a severe inconvenience, but might likely affect our property wlues. Ha .... ng this lot connected to our structure and secured with a fence and 24-hour guard pl'O\1des us all with added safety and security, as well as immediate access to the building. I have no doubt that the Streetcar will be a positive, beneficial addition to downtown LA. Many residents \01ed for it, myself included. But building the rail yard so close to hundreds of residents who live, work, and relax just steps tNI8y would be monumentally disruptiw. Surely there are options further away from full-time residents? Not to mention the likely chaos and tramc caused during LA Liw and Staples ewnts. Our neighborhood can be thick with heavy traffic, noise pollution and rowdy spactators during these ......rns, both day and night. Heavy construction added to this would further hinder our access to our building. I urge you to reconsider the location of the rail yard so close to South Park residents
Reed	Organization																X	Bart Reed and The Transit Coalition DO NOT want to be sent any registered mail for any and all notices associated with the LA Streetcar project. Bart Reed and The Transit Coalition want to be sent mail only \48 standard postage and we want to be kept on the mailing list
Reynolds	Organization	X																I suggest your group THOROUGHLY review and appreciate this link and the attached. Streetcars are a ridiculously slow and expen.ve transit option for a modern American city. I also suggest your t"9\4ew of all the items on this link for a better altematiw that my firm proposed for dO'Nl'ltown Los Angeles: http://www.prtstrategies.com/connector.html. My firm has also proposed Personal Rapid Transit for the Pacific Electnc Right-of-Way that runs from south LA to central Orange County here.
Rodriguez			X	X														With respect to the segments of the street car along Hill and Broadway that pass by Grand Park, I would suggest a study on the impact this will have. Specifically, there may be a pedestrian safety issue as well as an aesthetic issue as the Street car will further break up the park. A mitigating measure would be the possibility of two wide and landscaped pedestrian bridges that connect the various segments of the park. I ask that the commission please consider the addition of pedestrian bridges in Grand Park as part of the Street Car development.
Rosenthal			X															I support the Locally Preferred Mемative to the Streetcar
Sandler																X		The ownerslresldents of Grand Lofts haw contracts In place for a parking structure to be built on the South East Comer of 11th and Grand Awnue, I am one of the original residents that mowd into Grand Lofts in 2005 and we haw a 50)ear lease for parking on that lot We paid for the space and we want our parking structurel Please click. on the link below to review the Grand Lofts parking documents,

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
SCAG	State	X												X				SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Historic Streetcar Service in Downtown Los Angeles Project. The proposed project includes a streetcar system that would run through existing traffic lanes in downtown Los Angeles. As set forth in the attached, SCAG recommends that the EIR include a review and consideration of the goals in the adopted RTP/SCS and that the analyses reflect the most recently adopted growth forecasts. RTP/SCS G1: Align the plan investments and policies with improving regional economic development and competitiveness RTP/SCS G2: Maximize mobility and accessibility for all people and goods in the region RTP/SCS G3: Ensure travel safety and reliability for all people and goods in the region RTP/SCS G4: Preserve and ensure a sustainable regional transportation system RTP/SCS G5: Maximize the productivity of our transportation system RTP/SCS G6: Protect the environment and health for our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking) RTP/SCS G7: Actively encourage and create incentives for energy efficiency, where possible RTP/SCS G8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation RTP/SCS G9: Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies
SCAQMD	State				X													Air Quality (Summary): The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, that is, sources that generate or attract vehicular trips should be included in the analysis. In addition to analyzing regional air quality impacts the SCAQMD recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LST's can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the proposed project, it is recommended that the lead agency perform a localized significance analysis by either using the LSTs developed by the SCAQMD or performing dispersion modeling as necessary. In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found on the SCAQMD's CEQA web pages Mitigation Measures: In the event that the project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize or eliminate significant adverse air quality impacts.
Shapiro		X												X				As a merchant who has a business on Broadway I am very concerned about how the traffic will be affected during the construction phase of the project and how it will be affected after the project is completed. How will pedestrians access businesses during the construction phase? How many lanes of traffic will be affected? How long will construction take? Once completed, will the lane be utilized for automobiles along with the streetcar? My business is on the west side of the street and my understanding is that the track will be on the west side as the route is southbound on Broadway. The sidewalk in front of my business and indeed most of the block between 5th and 6th is "hollow" below the surface. How will the vibration of the streetcars affect the sidewalk, and indeed, how will it affect the buildings lining the street? I don't know if this is the purview of the EIR, but I don't understand the necessity of the streetcar as the Dash buses could easily duplicate the routes under consideration. Los Angeles previously had streetcars and they were removed many years ago. It seems to me that this project is a waste of precious resources with minimal, if. any, advantage over current buses.
Singh		X		X	X	X					X		X	X		X	X	I strongly oppose the downtown the downtown streetcar project for the following reasons: 1. Transportation/Traffic - This project will add additional over-sized vehicles to narrow Downtown streets and further worsen already-existing poor traffic conditions. 2. Air quality - The additional traffic created by this project will worsen Downtown air quality because of additional exhaust caused by increased idling of cars in traffic on Downtown streets. 3. Aesthetics/Visual Quality - This project will be built in an area with many historic buildings and the infrastructure required for the streetcar (including the service yard, the power substations and the overhead wiring) will interfere with the views of the historic buildings and will decrease enjoyment of these historic resources. 4. Noise - This project will add additional noise in the project area late in to each night (according to the proposed service schedule). 5. Safety - Downtown is already an area with significant pedestrian traffic. Streetcars making turns at intersections will create dangerous conditions for pedestrians. 6. Construction Impacts - The construction will significantly contribute negative impacts of noise, traffic and worsened air quality. 7. Historic resources - The street route will interfere with the future restoration of many historic buildings in Downtown by preventing of the use of space in front of buildings for construction staging. Furthermore, a proposed location of the streetcar storage/operations facility near the corner of 12th / Grand is highly inappropriate. That area is becoming a residential area with an influx of new residents. Such a facility there would disturb the area and would lead to a decline in property values in the Southpark area.
Smith		X											X				X	The Downtown Streetcar Project sounds great and will I believe, have a very positive impact on Downtown for many years to come. Hopefully, with all of the transit that is being built and planned for the region, it will become second nature for many of us to simply "jump on the train". I hope that all of the funds needed for the project is acquired without much handwringing. Further, I have to believe that developers of hotels (we need more for our convention center) are looking closely at this project and will help them to make-up their minds in favor of building downtown! Not to mention more apartments and condo too. Thank you and your staff for all your hard work and let's get this Streetcar built sooner rather than later!
Stangl																X		I am a homeowner at the Grand Lofts and am whemently against this proposition. I purchased my loft in 2007 for nearly 314 of a million dollars. This would be a trawsty and eyesore not to mention the loss of parking for homeowners. What is needed is more wlue added retail and d8\elopment that offers South Park residents comenience. There has to be a better location or altematiw in mind for consideration.
Suyehara I		X	X															Thank you for the informative streetcar scoping meeting. As a downtown homeowner, and an aging babyboomer, I am excited about the proposed streetcar coming to our downtown community. The two proposed routes are of particular interest to me. I encourage the LPA route, Locally Preferred Alternative. I think this route serves more of the needs of the community as well as local businesses. Please include my preference among the public comments regarding this exciting downtown transportation alternative project.
Suyehara II			X															I just wanted to give my vote to the 7th street option. The 9th street option would be great for going to Ralphs market, but I believe, with time, other markets will come downtown making the 9th street option a moot point.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Teigue											X			X		X	X	I'm contacting you because I am a homeowner and resident in the Elleven building on 11th and Grand. We received the information regarding the possible maintenance facility on the SouthEast corner of 11th and Grand and I had some questions and concerns. How would it affect the current parking situation in the neighborhood? Would it take away a parking lot or even two? Would it impact traffic? Would the noise level effect any of us residents? Please let me know if there is anything more I need to know about this as a homeowner, resident and taxpayer.
Thomas Properties Group - Ricci	Organization	X	X															TPG has previously gone on record to oppose the restoration of the Streetcar Service and the Community Facilities District for a number of reasons, including, the lack of a vote on the Communities Facilities District for property owners and the fact that TPG already provides shuttle service to many of the same locations the Streetcar would serve. The concerns of property owners and tenants have not been adequately addressed throughout the process. Therefore, TPG strongly objects to both alternatives for the restoration of the Streetcar Service. Finally, in addition to the above, TPG further objects to the Streetcar Service as a transit connection that is duplicative of existing DASH Routes D and E making it unnecessary (see Exhibit A), The sign ificant impacts that will result are not outweighed by the benefits of the project. The benefits of this project are limited and do not provide an enhancement to the majority of downtown property owners and tenants of the properties with the highest density,
Tooley		X	X															I support the Los Angeles Streetcar 100% and can't wait to ride it - if all goes well. I prefer the LPA alternative as it has the most conections to the Metro Red and Blue lines. Please buld it like yesterday.
Toumasis		X	X											X		X		My wife and I live in the LUMA building on the corner of 11th and Hope St.. While LA Live was still a parking lot and the majority of the new restaurants and bars in the area did not exist, we made a significant investment in the future of downtown. We're excited about all of the new development, including the idea of introducing the streetcar to the area. That being said, I am concerned about the details that are currently being worked out. FIrst, the route of the streetcar on Broadway is fine, however, my issue is having it go down 11th Street towards Staples and LA Live. 11th Street is only two lanes and the only street running West with a direct route to Staples Center and LA Live. Having the streetcar take up one of those lanes will leave only the other lane for auto and bus traffic. During events at Staples Center and LA Live, which is nearly every night of the week especially from October to May (the NBA and NHL season), traffic is already a concern. I don't believe the streetcar will relieve traffic, but rather add to it by limiting the lane for cars to just one. To compound this problem, the main parking entrance and exit for both LUMA and ELEVEN is on 11th Street. That's a combined 400 units in those two buildings where occupants rely on 11th Street as their main thoroughfare to get in and out of their homes. Now, Eleven was the first new LEED construction residential building in downtown and Luma was the 2nd LEED building. The homeowners in both buildings made significant financial investments and took a leap of faith betting that downtown would come out of the recession in the best shape it's been in since the 1940's. Both buildings are in the top 5 most expensive residential buildings downtown.Again, 11th Street is only a two lane street and the primary entrance and exit to both buildings. Adding a streetcar to 11th Street will only cause problems to the homeowners of Luma and Eleven on their morning and evening commutes. I can't help but think it will have an adverse affect on our property prices. Secondly, the location of the streetcar storage and maintenance building seems straightforward. In my humble opinion, it comes down to cost and convenience. I would think the area around Broadway would be the most convenient and quite possibly, the most cost effective. I don't know the details of the specific locations that you're considering, however, I can tell you that South Park is generally more expensive than the Arts District or Historic Core. Whether finding a warehouse to readapt or building from the ground up, the cost per square foot is much cheaper in those areas. The closer you get to LA Live and Staples, the more you're going to pay. South Park is attracting more hotels and residential construction and I can't imagine it makes sense to spend the money just to have a maintenance facility in the area.
Van Stekelenburg																X	X	I am a resident of Grand Lofts, located at 330 w 11th street. Our building has 66 residential units that are located at Grand Lofts, where I have lived for six years. Our parking license is tied to the northern portion of the parking lot bounded by Grand, 12th, our building, and the alleyway running between Olive and Grand. We noticed that this is one of the suggested locations for the maintenance yard for the proposed Streetcar. Can you please tell me what will happen to our parking? We have a license agreement with Merco/Meruelo Maddux or whatever the current ownership entity name is. Our license calls for the construction of a parking garage on this parcel. We are very concerned and confused as to how this can be proposed as a location. Can you provide additional detail and a response as to what the city is suggesting happen to our 66 residential units and their parking??
Velasco																	X	Make sure you get residents who are paying taxes for this free passes. My only comment.
Wentzel			X															I have one COITI'1'lent. I believe 7th Street needs to be double tracked in each direction between Hope and Broadway as indicated on the attached map. This would allow for three routes of this one-way streetcar 1) Full alignrrent loop 2) Top half-loop between Bunker Hill and 7th Street via Broadway/Hill 3) Bottom haW-loop between 7th, 11th, Broadway and Figueroa With this one tiny addition on 7th Street, if there is an accident or errergency that obstructs the streetcar tracks, the other half of the system can continue to win without shutting down the whole system.
Wetzel																X		Jim I am respectfully requesting that you do NOT locate the maintenance rail yard on the comer of 12th and Grand Ave. The South Park District is a neighborhood, not an industrial or light industrial zone. I purchased my home at Ellewn because the South Park District is a residential district a maintenance rail yard is not consistent with a residential district.
Wright		X				X								X				I am a strong supporter of the streetcar. It will be transformational for Broadway. However, I am concerned about the impacts the current Southbound curb alignment will have on the Million Dollar, Los Angeles, State and United Artists Theatres. Along with the streetcar, revitalization of the Broadway theatres is a linchpin for reactivating and attracting new investment to the street. Live entertainment is the best and most economically viable method of making these theatres – and Broadway – entertainment and tourism destinations. On a typical night in the not too distant future, all four theatres may host live events with starting times around 8pm. These events will generate a considerable amount of automobile traffic dropping off patrons at the front doors of these theatres. The same will occur as the shows end. The volume of this traffic will increase dramatically during inclement weather. How will the line-ups of automobiles be managed given the need for clear passage by the streetcar along the shared right of way? It is reasonable to assume that many theatre patrons will use the streetcar for transport to and from the theatres. However, sold out performances at these four theatres will attract up to 7500 patrons, which far exceeds the proposed capacity of the streetcar. When theatregoers from the Orpheum, Tower, Morosco(Globe) are added, there is the potential for an additional 5500 people to be added to the mix. In the past, when the Broadway theatres were consistently drawing more than 13,000 patrons at a time, the two-way center alignment for the streetcars handled the large crowds and also the automobile traffic generated by the theatres. Given the preliminary planning and funds projected to be available for the Broadway streetcar, there may be no other alternative than the less expensive curbside alignment. There may be other methods of mitigating traffic and the needs of the theatres while accommodating the streetcar. Consideration and planning for the likely conditions described above are better addressed now than as an afterthought after the streetcar is operating.
Wu																X		Rail Facility at 11th and Grand?? I'm thinking someone made a clerical error in adding the above location as a possibility?
Yen																	X	hope that our streetcar can have the same color scheme as the original PE Red Cars with the RED and YELLOW instead of the green color used in the Streetcar LA renderings. I have attached an image of a vintage streetcar as an example
Yoon																X		Hello Mr. Doty, How are you? I am one of Grand Loft residents. I got the news regarding Streetcar maintenance rail yard from our Grand loft board.I am supporting street car project and so happy for the project. HOW8\er we recently secured our parking lot and it is essential br our residency. We can't afford to loose the parking lot. Please consider the residents and find the better options.

Name / Organization	Agency	Purpose and Need	Alternatives	Aesthetics	Air Quality	Cultural Resources	Geology/Soils	Greenhouse Gas Emissions	Hazards/Hazardous Material	Land Use / Planning	Noise/ Vibration	Public Services	Real Estate	Transportation/Traffic	Utilities/Service Systems	MSF	Other	Comment / Summary
Yuka-Young																X		I have intmned that the city is planning to place the maintenance & Storage yard for the streetcar system and the south east comer of 11th and Grand Ave. is one of proposed area. I think it is really poor judgment that city makes for this vibrant residential and commercial mixed used streets. The proposed site is located in South Park which is one of new great residential, entertainment industry and educational buildings are dewloped past few' years. Young professions, students, families have moved and created great community. Howe\er the maintenance yard will strongly against this great emAronment that has created last few years. I strongly disagree that the city places a Maintenance Yard for LA's streetcar on the South East comer of 11th and Grand Ave. It willllJin our great community.
Zucker		X	X	X					X		X		X			X		I am opposed to the plan to have the streetcar route going west on 11th. Between Grand and Hope on 11th is the automobile entrance and exit for Luma and Elleven, two large residential buildings. It is already difficult enough to exit the building given the existing traffic on 11th St., The introduction of the streetcar will cause increased accidents given the limited visibility at the exit. In addition the noise and vibration impact is a major concern. It is not only the noise and impact of the streetcar itself, but the noise of the passengers in the evening after visiting bars that will significantly increase the noise level in the neighborhood when many of the residents are trying to sleep. In addition, I am opposed to the possible location of the maintenance yard near 11th and Grand. I am a condo owner in one of the nearby condominiums. There are 4 large residential condominiums containing well over 500 units, and such maintenance facility will be an eyesore impacting the visual quality of the neighborhood, increase noise and vibrations, involve the use of hazardous materials near what has become one of downtown's premier residential locations and thus reduce the residential owners property values, which will also result in a loss of revenue to the city. Please inform me who has been hired to conduct the environmental impact study, and how interested residents can contact them directly so that our concerns can be directly expressed to those responsible for conducting the environmental impactstudy.
Superior Court, Los Angeles County, Henry Hernandez (Received after the comment period)	Local										X						X	Please note, this comment was submitted after official NOP comment period. Comments/Concerns: 1) Loading Dock: The Court periodically receives deliveries of supplies, legal documents, and equipment thru the 1st Street loading dock. Vehicles range in size. Avoid blocking or disrupting entry into the facility. 2) Tree Pruning: Professional arborists should be consulted when topping, pruning, or thinning trees. Tree care should conform to National Standards. 3) Noise: Excessive noises generated by heavy duty machinery, electric saws, gas diesel engines, is not encouraged during work hours. Court trials are heard on a daily basis. 4) Traffic Safety: Monitor construction so traffic does not create hazards for pedestrians. 5) Deep Cleaning: All parts of the building impacted by construction shall be maintained clean and free of debris. Deep cleaning may be required if dust mitigation is unsuccessful. 6) Signage: Clearly identify or post directional signage along the path of pedestrian travel. 7) Employee Safety: Pedestrian accidents should be avoided at all times. Immediately report any hazardous conditions to Facilities Services or ABM. If an employee requires medical attn dial 911.

Appendix C
Restoration of Historic Streetcar Service in Downtown Los Angeles—Construction Methods Technical Memorandum

Restoration of Historic Streetcar Service in Downtown Los Angeles
Construction Methods Technical Memorandum

Los Angeles, Los Angeles County, California

January 11, 2016

Prepared for:

Metro
One Gateway Plaza
Los Angeles, CA 90012-2952

Prepared by:

HDR Engineering, Inc.
801 S. Grand Ave, Suite 500
Los Angeles, CA 90014

Table of Contents

Table of Contents ..... **i**
List of Figures ..... **ii**
Executive Summary **ES-1**
1.0 INTRODUCTION **1**
1.1 Regulatory Framework of This Project 1
1.2 Industry Standards of This Project 1
2.0 PROPOSED CONSTRUCTION ACTIVITIES **2**
2.1 Construction Activities Completed by This Project 2
2.2 Construction Activities Of Related Projects 2
3.0 General Construction Scenario **4**
3.1 Contractor Support Facilities 4
3.1.1 Contractor Field Office 4
3.1.2 Laydown and Storage Area 4
3.1.3 Work Zone Staging Areas 5
3.1.4 Rail Storage 5
3.2 Utility Construction and Other Early Work 6
3.3 Track Construction 7
3.4 Streetcar Stop Platforms 9
3.5 Civil Construction – Paving, Sidewalks, and Ramps 9
3.6 Operating Systems Installation 10
3.6.1 Traction Power Substation Installation 10
3.6.2 Overhead Contact System Installation 10
3.7 Vehicle Maintenance and Storage Facility 11
4.0 MAINTENANCE OF TRAFFIC **12**
4.1 Temporary Street and Lane Closures 12
4.2 Maintenance of Traffic During Utility Construction 12
4.3 Maintenance of Traffic During Track Construction 13
4.4 Maintenance of Traffic During Systems & Other Work 14
4.5 Haul Routes 15

EXECUTIVE SUMMARY

This technical memorandum describes the construction activities that are anticipated to occur during the course of construction of the Restoration of Historic Streetcar Service in Downtown Los Angeles. The purpose of this document is to provide a general background on typical construction activities and durations of the Project. It should be noted that the approach to construction staging and phasing described herein is general in nature. This approach is intended to establish a baseline for the Environmental Impact Report and to disclose potential construction impacts to the public, including residents and businesses.

1.0 INTRODUCTION

The construction of the Restoration of Historic Streetcar Service in Downtown Los Angeles (the "Project") will entail a number of elements, including construction of guideway and trackwork, paving, streetcar platforms, relocation of parallel utilities in conflict with the trackway, encasement of utilities crossing under the trackway, construction of track drains, and a maintenance and storage facility (MSF). It will also include installation of specialty system work such as traction power substations (TPSS), overhead contact wire, communications, and train/traffic signaling. A set of Advanced Conceptual Engineering Plans (HDR, April 2013) depicts the location and arrangement of these facilities.

This section describes the activities anticipated during construction of this Project.

1.1 REGULATORY FRAMEWORK OF THIS PROJECT

The Project will comply with federal, state, and local regulations. The individual regulations that apply to the construction of this Project will be addressed in the individual technical reports being prepared for the Draft Environmental Impact Report (DEIR). Partial funding would be provided through the Federal Transit Administration (FTA).

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards.

1.2 INDUSTRY STANDARDS OF THIS PROJECT

The Project will employ conventional construction methods, techniques, and equipment. All Project engineering and construction work will be completed in conformance with the applicable regulations and standards, including but not limited to the following:

- Los Angeles Municipal Code, Chapter VI Public Works and Properties
- Los Angeles Municipal Code, Chapter XI Noise Regulation
- Los Angeles Department of Transportation Traffic Control Handbook and Traffic Manual
- City of Los Angeles Building Code
- City of Los Angeles, Bureau of Engineering Standard Plans, Brown Book, and Design Manuals
- City of Los Angeles Standard Specifications for Public Works Construction (Greenbook)
- Work Area Traffic Control Handbook (WATCH)
- South Coast Air Quality Management District (SCAQMD) Regulations
- California Air Resources Board Requirements
- California Manual on Uniform Traffic Control Devices (MUTCD)
- California Public Utility Commission (CPUC) Regulations
- California Building Code
- Standard Urban Stormwater Mitigation Plan (SUSMP)

- National Pollutant Discharge Elimination System (NPDES)
- Stormwater Pollution Prevention Plan (SWPPP)
- American Railway Engineering and Maintenance of Way Association (AREMA) Standards
- National Electrical Code (NFPA 130)

2.0 PROPOSED CONSTRUCTION ACTIVITIES

2.1 CONSTRUCTION ACTIVITIES COMPLETED BY THIS PROJECT

The various work activities to be performed over an estimated 24 month construction/start-up/testing period would include the following facility and system items:

- Relocation, modification or protection in-place of utilities in conflict with streetcar facilities.
- Construction of the vehicle MSF.
- Installation of temporary traffic control measures.
- Reconfiguration of the existing roadway lanes to accommodate streetcar and traffic movements.
- Construction of surface and subsurface drainage systems, including track drains, and the modifications to existing systems.
- Excavation of the roadway along the alignment to prepare it for trackwork installation.
- Installation of trackwork complete with preparation of track bed, track slab, rail, fasteners, and concrete.
- Construction of TPSS with underground electrical power feeds.
- Installation of traffic signal and streetcar control improvements, and modification of existing traffic signals.
- Installation of overhead contact poles, wires, support brackets, feeder cables, underground conduits, and other components or alternative power distribution systems.
- Construction of streetcar stops using cast-in-place concrete.
- Construction of station stop finishes, such as canopies, benches, signage, trash receptacles, lighting, ticket vending machines, and all other amenities.
- Testing of subsystems and systems.
- Simulated revenue operation test runs and final commissioning of the system.

2.2 CONSTRUCTION ACTIVITIES OF RELATED PROJECTS

It should be noted that there may be construction activity occurring along or near the streetcar alignment that is not part of the Project. These activities include:

- Regional Connector – The Regional Connector Project is a Metro light rail extension between the Little Tokyo/Arts District Station and the 7th St/Metro Center Station, primarily beneath 2nd Street and Flower Street. The project began in 2014 and is expected to end in 2020. Therefore, close coordination and collaboration will be required between the two project teams. Coordination activities would include traffic control measures, construction sequencing, and suggested detour routes. The possibility of shared space for a streetcar TPSS within the Broadway/2nd Street Regional Connector Station area will be further analyzed as a potential TPSS location in the EIR. Construction activity between both projects may also overlap at 2nd Street and Broadway and at 2nd Street and Grand Avenue.

- Broadway Streetscape Master Plan – This project reconfigures Broadway with wider sidewalks and curb extensions at crosswalks and intersections. In 2014, the roadway was narrowed to one lane southbound and two lanes northbound under a "Dress Rehearsal" performed with striping, cones, pavement treatments, and planters. Construction of new curbs and sidewalks will occur as funding is secured and in conjunction with development.

- Figueroa Corridor Streetscape – This project proposes to reconfigure 11th Street and Figueroa Street to widen sidewalks and provide protected bike lanes. To date, 90% draft designs have been developed for the project, and the conceptual streetcar alignment has taken these draft designs into account. Construction is expected to begin in early 2016 and end in late 2016. Close coordination and collaboration will be required between the two project teams due to overlapping facilities.

- City of Los Angeles 2010 Bicycle Plan (Bicycle Plan; 7th Street Segment)– The Bicycle Plan removed one lane of traffic in each direction on 7th Street to provide bicycle lanes in both directions, along with a center turn lane, within the Project's study area. Construction was completed mid-2014.

- Wilshire/Grand Mitigation – Refinements to striping and traffic signal operations are proposed as mitigations to the Wilshire Grand Project, including a "pedestrian scramble" at 7th Street and Figueroa Street. The streetcar Project will incorporate modifications of 7th Street within the segment from Figueroa Street to Hill Street as part of the Wilshire Grand Project's EIR and design engineering.

- Federal Court House (2nd Street at Broadway) – Construction of a new federal court house is underway on a site adjacent to the streetcar alignment, and it is expected to open in 2016. The streetcar Project's design will take into account site access, physical security measures, and new utility lines.

- There are many other new office, residential, and commercial developments planned within the Project's study area. These will require coordination of construction schedules, site access, construction staging, and traffic control requirements. A complete listing of related projects can be found in the EIR.

3.0 GENERAL CONSTRUCTION SCENARIO

3.1 CONTRACTOR SUPPORT FACILITIES

Construction of the Project will generally be conducted under the direction of a prime contractor with several subcontractors for various specialty trades. The contractor (referred to herein as either the prime or subcontractor) will be required to maintain a field office near the work site. The contractor will also establish a location for the storage and handling of construction materials for the duration of the Project.

3.1.1 Contractor Field Office

The contractor's office will be the administrative and personnel hub of the Project. Project managers, superintendents, and support crewmembers will be frequently joined by agency personnel, City representatives, engineers, plan checkers, City inspectors, technical staff, stakeholders, and public relations staff. The office will typically be open during business hours.

This Project could use portable office trailers or vacant office space in an existing building for this purpose. Each field office requires ample parking for the contractor's staff, agency or owner representatives, and visitors. A project of this size will typically host 20 to 30 vehicles on a full-time basis for the contractor's management team, the agency's construction management team, and other support staff for the office.

3.1.2 Laydown and Storage Area

The contractor will require an area for the laydown and storage of materials, as well as overnight parking of construction equipment. This storage area does not need to be co-located with the field office. If it is not co-located at the field office, there will be contractor's truck traffic between the two contractor locations, especially at the start and end of the work day. The contractor will work with the City's Bureau of Engineering (LABOE), Bureau of Street Services (LABSS), and Department of Transportation (LADOT) to identify and manage operations within the staging area selected by the contractor.

The laydown and storage area will be sized to accommodate the storage of construction materials, including concrete forms, pipes, pipe accessories, concrete vaults, manholes, rail boot, special trackwork, station furnishings, and other materials that may require delivery to the contractor prior to installation. In addition, the storage area will also provide temporary parking for construction vehicles, including bulldozers, backhoes, graders, dump trucks, utility trucks, and cranes.

Ideally, the storage area would be located in close proximity to the work site and offer good access into and exiting the area. Large trucks with trailers will access the storage area, requiring sufficient room for their turning radii. A typical size for a laydown and storage area to accommodate these activities would be approximately three to five acres and preferably rectangular in shape. The contractor will be required to control dust, mud tracking, water, and vegetation debris in and out of the site.

The location of the storage area should be chosen so that its activities do not become a nuisance to adjoining properties and land uses. For the proposed Project, the location will likely be in a generally commercial area with mixed residential and commercial uses. The storage area will be required to abide by all Project and local agency regulations and restrictions regarding noise and light, and shall be easily accessible by police, fire, and emergency services. Four potential laydown and storage areas have been identified as the type of locations that could be chosen for a laydown area. These locations are described below and depicted in Attachment A:

1. Southeast corner of Third Street and Main Street
2. Northeast corner of Third and Spring Street
3. 243 S. Spring Street
4. Grand Avenue to Olive Street, between 8th Street and 9th Street

These sites represent typical areas where a staging area may be sited within the Project vicinity. There are potentially many other locations close to the Project area that may be suitable and have similar characteristics to these four sites. All four of the example sites are currently parking lots adjoining city streets. It should be noted that the actual staging area site will be selected by the contractor at the time of Project construction; the sites referred to above may or may not be available at that time, and therefore should be regarded as examples used for purposes of general impact evaluation.

3.1.3 Work Zone Staging Areas

In general, all materials to be used on the Project will be stored at a laydown and storage area of the type described above. The contractor will not be allowed to store or stage materials within the work zone or jobsite on an overnight basis. Exceptions to this will only occur with prior authorization by LADOT and LABSS and may include large construction elements and materials that would be difficult to move on a daily basis, such as, but not limited to, rail and overhead contact support (OCS) poles.

3.1.4 Rail Storage

Rail will be delivered as straight 80-foot sections, or “sticks”, precurved sections, or as special trackwork units. The 80-foot rail sticks will likely be delivered by rail car to a nearby freight siding. The contractor will arrange the delivery point with the railroad and the freight siding’s owner and operator. From the delivery point, the contractor will load the sticks onto tractor trailers and deliver those loads to a rail storage site, located on or near the work zone. Precurved sections and special trackwork units will likely arrive by tractor-trailer directly from the vendor, and be delivered to the laydown and storage area for storage until installation. Delivery of rail materials typically occurs during the work day, although delivery of these rail materials may occur at night or on weekends with approvals similar to other construction activities.

The purpose of the rail storage site is to facilitate welding of the rail sticks into strings, and to prepare the rail for movement to the installation location. Rail storage sites are typically narrow and long zones set aside for the storage of rail sticks, prior to installation. These rail storage sites typically occupy a space 12 feet wide for the length of a city block. At the rail storage site, individual rail sticks will be welded together into rail “strings.” Rail will be welded into strings using diesel-powered, trailer-mounted machines. The machinery would clean, straighten, prepare, weld, and grind short sections of rail into longer strings.

The lengths of rail strings would vary according to the size of the rail storage site provided; an additional 250 feet would typically be provided to allow room to move the strings. For example, if a rail storage site occupied a 600-foot block, each rail string might be 350 feet in length. This allows the contractor 250 feet of room to weld each string and position it for storage without disturbing the next string to be welded. The contractor will weld the longest string allowable by the space provided, generally up to around 700 feet. Figure 3-1 illustrates a typical rail storage site.

Figure 3-1 Rail Storage Site (Tucson, AZ and Seattle, WA)

Movement of the rail strings to the installation site is accomplished by placing each rail string on steel rollers, and rolling the rail along the street to the installation site. The rail moves at a walking pace (3-4 miles per hour), and requires any traffic crossing its path to be closed. Contractor and police escorts are usually employed for the movement of rail, which typically occurs at times of reduced traffic.

3.2 UTILITY CONSTRUCTION AND OTHER EARLY WORK

The approach to utility construction depends on the type, length, number, and complexity of the utility (or utilities) to be constructed or relocated. Utilities in potential conflict include, but are not limited to, storm drains, sanitary sewers, water, power lines, gas pipelines, electrical duct banks, lighting cables, fiber optic lines, telephone, cable lines, and underground conduits for traffic signals and roadway lighting.

To the extent possible, the streetcar trackway and facilities will be located to avoid or minimize conflicts with existing utilities. In certain instances, existing utilities will be relocated, modified, or protected in place where they are in conflict with or near the trackway or systems elements of the Project. The Project will coordinate relocations, modifications, or protection in place with all utilities in conflict with the streetcar Project, under the terms of each provider's franchise or agreements defining the provisions for such matters.

In addition to relocation, various new utilities will be installed as part of the Project, including electrical duct banks, traffic signal conduits, and electrical service lines. These facilities will likely be installed in the same phase as utility relocation by the Project's contractor and require a similar level of construction activity.

Before utility relocation work, survey and utility-locating personnel will perform research activities of the existing utilities to determine their location, depth, and potentially, condition. This work is performed using a variety of methods – pit excavation, "potholing" using a vacuum extraction truck, ground penetrating radar, opening existing manholes, and closed-camera video recording. All of these methods require temporary traffic control in the vicinity of the work for durations up to several hours. Occasionally during this period of exploration, other underground features are discovered, such as old street rail tracks, tanks, tunnels, unknown live or abandoned conduits, and archaeological items. The likelihood of unknown features increases in a historic downtown area, as many of these items were present before proper records were kept.

Once existing utilities are located, the work to relocate and protect underground utilities can begin. The work activities include excavation of soil to the depth of the existing utility line and installation of a replacement utility in a new location, abandonment of existing pipes, backfill of soil, and reconstruction of pavement or surface improvements above the excavation. This would occur within the street or right-of-way as required. The excavated material will be hauled away to designated haul locations. Section 4 of this memorandum discusses the haul routes in more detail.

Utility relocation is typically the first work item to be performed on a project. Factors that influence utility relocation sequencing include the type, length, and area of the utility relocation, restrictions on service disruptions from the utility agency having jurisdiction, and the availability of the work zone for closure. Once utility relocations have been completed within a segment, trackwork and civil construction will commence, and the utility relocation work crews may move on to the next segment. This method of sequencing typically allows crews to keep utility relocation work ahead of the track work, and keeps construction activity confined to two segments at one time. A description of the typical maintenance of traffic setup is described in Section 4.2 below.

Construction equipment typically required for relocation and restoration of utilities includes excavator/backhoes, trenchers, trucks, cranes, and generator/compressors. Concrete trucks, pavers, rollers, and power compactors are typically required for street restoration.

3.3 TRACK CONSTRUCTION

All tracks and platforms would be located within the public right-of-way (sidewalks and traffic lanes). The majority of the tracks would be located within existing lanes of traffic, within which there would be a mixed-traffic operation. A short segment of the Project along Grand Avenue would operate in an exclusive trackway south of 1st Street in order for the operator to stop the vehicle and switch directions safely.

The construction of a trackway within existing city streets will involve the use of embedded track. Trackwork construction would include demolition of the roadway sections being displaced by the guideway, preparation of the track bed, construction of the supporting track slab, and laying of rails. In most areas, the subgrade will also be prepared and graded. If rebar is designed into the track slab, it will be installed once the grade is prepared. Rail will be pulled into place using the method described above and set to final grade on steel ties and plates. Once the rail is established, concrete will be poured around the rail and rebar to form the concrete trackway.

It may be possible that precast concrete track panel sections be used as a method to increase the rate of trackway production. These may be proposed across intersections and other access points that would benefit from a reduced duration of temporary closure.

Equipment for the excavation of the guideway and installation of the track slab would generally consist of rubber-tired excavators, loaders, graders, small bulldozers, cement trucks, rubber-tired compactors, and water trucks for dust control. Construction vehicles may enter and exit the general traffic lanes, with flaggers, in the areas of construction. Short-duration lane closures, predominantly on one side or the other of the work zone, would be required for delivery of materials and concrete pours. Figure 3-2 illustrates various stages of trackway construction and their work zones.

Figure 3-2 Streetcar Trackwork Construction (Portland, OR)

The installation of special trackwork (e.g., diamond crossings, turnouts) involves the same process for rail installation, as described above, with the additional step of setting the trackwork unit. After the removal of pavement and preparation of the track bed, the special trackwork unit will be transported from the contractor's storage area to the work site and placed into position.

Final leveling and adjustment will occur prior to welding. The unit is then field welded to the running rails at each endpoint. Concrete is then poured to form the track slab under and around the special trackwork unit. This work involves the use of loading trucks and cranes to transport the special trackwork unit, and concrete trucks to finish the trackway.

Construction of station platform foundations, restoration of pavement, and reconstruction of any sidewalks and ramps would begin simultaneously or immediately following the track slab within each segment. Once the track is placed, the pavement is restored, and sidewalks and ramps are reconstructed, the closed roadway lanes can typically reopen to traffic. A more detailed discussion of the maintenance of traffic during track construction can be found below in Section 4.2.

3.4 STREETCAR STOP PLATFORMS

All station stops will be constructed by the Project. Other potentially related projects may be constructed by others, such as planned streetscape improvements, curb extensions, bus stops, or other street amenities that would complement the Project's platforms. These related projects are not a direct component of the streetcar Project.

Platforms will be constructed during track slab and curb construction. The first step involves setting forms, installing underground service utilities, and pouring concrete foundations and curbs. The platform surface, along with ramps and steps connecting the platform to the existing sidewalk would occur next, followed by setting canopies and other platform amenities. Typical equipment for this work includes backhoes, dump trucks, small cranes, and concrete trucks. Figure 3-3 illustrates typical construction of a streetcar stop platform.

Figure 3-3 Streetcar Stop Platform Construction (Portland, OR)

3.5 CIVIL CONSTRUCTION – PAVING, SIDEWALKS, AND RAMPS

Once the track slab has been set, the contractor will focus on restoring pavement adjacent to the trackway and reconstruct sidewalks, driveways, and curbs modified by construction. This activity will take place using the same work zone established for the track installation, and is often the last activity within the work zone prior to opening up the roadway. The work crew will sequence this work following track slab construction. Typical equipment will include forklifts, concrete trucks, rubber tired rollers, dump trucks, and cranes.

3.6 Operating Systems Installation

The operating systems include traction power, an overhead contact system (OCS), communications, and streetcar control (including traffic signals). Traction power would include an estimated five substations spaced relatively evenly throughout the alignment to provide direct current (DC) power for the streetcars.

3.6.1 Traction Power Substation Installation

Each TPSS site consists of a substation, equipment to receive an incoming power supply, conduits, and vehicular access. The TPSS unit is a structure measuring approximately 17 by 11 feet containing electrical and electronic equipment enclosed in a typically rectangular-shaped building, placed on a slab or foundation. A grounding mat, consisting of a grid of copper wires, would be installed below grade underneath the TPSS site and extending five to ten feet beyond the TPSS substation. The grid is necessary to properly ground the TPSS and the OCS feeder cables. Electrical transformers may be required adjacent to the TPSS building to intercept the incoming power feed and transform it to the voltage necessary to power the TPSS.

Construction begins with each site cleared and graded. Underground utility connections would be dug and installed, followed by the grounding mat. The foundation would be poured once the utility connections are completed. The TPSS building would be constructed on the site, per the dimensions necessary to enclose the TPSS equipment. The TPSS equipment will be delivered, installed within the enclosure, and connected to the incoming power supply conduits and outgoing feeder conduits. Fencing or another type of barrier may be installed around the perimeter of the site, and architectural treatments would be applied as feasible. Graders, bobcats, forklifts, flatbed trucks, heavy cranes, and concrete and materials/equipment trucks would be required.

3.6.2 Overhead Contact System Installation

The OCS for the streetcar will consist of overhead copper contact wires supported by span wires or mast arms. Span wires or mast arms are mounted to poles spaced at intervals ranging from 80 to 100 feet. Poles would be about 27 feet tall with contact wire heights typically between 18 to 19 feet throughout the alignment. Construction equipment will include cranes, bucket trucks, and other equipment for installation of the wires from the guideway area. While wires are being strung at cross streets, partial street closures would be anticipated during construction as crews work to complete the wire installation across intersections. Figure 3-4 illustrates typical installation of a streetcar OCS. Note that the trackway and paving are already completed in this photo.

Figure 3-4 Typical OCS Installation (Tucson, AZ)

Systems installation generally follows the completion of track construction. Finishing for platforms usually overlaps with systems work and is completed prior to final testing and pre-revenue operations. Systems installation work is significantly less disruptive to communities as compared to track construction work. Since the work zone is confined within the track area, partial lane closures are anticipated for short segments and will be limited to non-peak hours.

3.7 VEHICLE MAINTENANCE AND STORAGE FACILITY

The vehicle maintenance and storage facility would be constructed sometime from early in the construction process to the midway point of track construction in order to provide the ability to test and store the streetcar vehicles prior to operation. The maintenance and storage facility would be constructed from standard building materials that are durable and resistant to vandalism. A maintenance building for a system of this size would generally be 12,000 to 18,000 square feet and contain tracks inside a garage enclosure for maintenance of the vehicles. The garage would be tall enough to include an overhead crane for moving heavy equipment on and off of the streetcar roofs. The maintenance facility tracks also contain maintenance pits for inspecting and servicing the underbody of the streetcar vehicle. Parts, equipment, and tool storage are located adjacent to the work area.

The construction of the maintenance facility generally follows the same sequencing as for the TPSS. The site would be cleared and graded, and underground utility connections would be installed. Following the underground work and site preparation, the pit and foundation would be installed. Structural walls and heavy industrial equipment (such as shop cranes, etc) would be installed on the foundation. Once the structure is enclosed, the shop would be finished with mechanical and electrical equipment, plumbing, and furnishings. Construction of a storage facility entails placing tracks and turnouts, paving, installation of OCS poles and construction of security fencing and walls. The construction equipment will consist of backhoes, dump trucks, concrete trucks, flatbed trucks, cranes, and lifts.

The maintenance facility is to be located on a land parcel outside the street right-of-way. Construction vehicles will enter and exit the work site during work hours. If the site is large enough, a small Project office and staging area may be located on site. These facilities may also be located nearby at another vacant lot, or kept at the main streetcar staging area.

Construction access to and from the site will be controlled, and the contractor will be responsible for controlling dust, mud tracking, water, and vegetation debris in and out of the work site. Figure 3-5 illustrates typical construction of a maintenance building and the work site around it.

Figure 3-5 Typical Maintenance Building Construction (Tucson, AZ)

4.0 MAINTENANCE OF TRAFFIC

4.1 TEMPORARY STREET AND LANE CLOSURES

Street and lane closures will be necessary during construction of the Project. All traffic control shall be shown on a Traffic Impact Mitigation Plan, prepared by a consultant in coordination with LADOT. This Traffic Impact Mitigation Plan will be submitted to LADOT and the Transportation Construction Traffic Management Committee (TCTMC) for review and approval prior to the start of the construction. The extent and duration of the closures will depend on a number of factors, including the construction contract limits and individual contractors' choices, and will be communicated with and approved by the Project management and public relations team. In general, Project construction activities would typically take place between the hours of 7:00 a.m. and 9:00 p.m. in accordance with LAMC 41.40(a). To expedite construction activities and reduce the duration of associated potential impacts, certain construction activities may occur during peak hours in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406. In addition, construction activities may occur during nighttime, weekends, and holidays with the approval of the Police Commission. The sections below describe the traffic control scenarios for particular Project phases.

4.2 MAINTENANCE OF TRAFFIC DURING UTILITY CONSTRUCTION

As described in Section 3.2 above, utility exploration and construction will occur throughout the Project. At the time of this report, the full extent and duration of utility construction is not known; existing utilities have been mapped and compared with the planned track alignment to determine potential conflicts. The following describes typical traffic control during utility construction.

In general, utility construction will be conducted in a linear manner in street segments along the route. The majority of utility construction will consist of excavating a new trench and installing new pipes, manholes, valves, catch basins, vaults, and other underground facilities alongside existing lines. This type of work will require the closure of one or two lanes (depending on the location), while maintaining one or two lanes of traffic, and sidewalks. The closures will be confined to off-peak daytime periods as much as practicable, and the contractor will be required to install steel plates over all open trenches and open up all lanes to traffic after work hours. Materials and vehicle staging will take place at the contractor's staging area, not on the jobsite. The contractor will establish this traffic control procedure for a workable segment, which would be typically two to three blocks in length. Once the utility is relocated and reconnected into the existing system, the lane closures can be removed.

The possible need to extend street closures for utility work, including night and weekend closures, must be acknowledged at any location along the alignment. There are times when these extended closures are necessary to allow the contractor uninterrupted access to a work zone to complete a relocation and "tie-over" into existing utility lines. Street closures also allow the contractor access during times when the utility and/or street may not be heavily used (i.e. during daylight hours) to perform "tie-overs." These closures may also be required when and if other unanticipated underground features are discovered, as described above in Section 3.2.

Other utility construction scenarios include the relocation and installation of lateral crossing utilities, vaults, valves, and other underground facilities. These scenarios require more specialized traffic control, requiring one or two lane closures while maintaining one or two lanes open to traffic. The open lanes may shift as utility work crosses the street. Larger relocations, such as reconstructing vaults or moving several utility lines in a confined area, may require a larger open pit and work zone. These special scenarios may involve multiple lane closures and will require prior authorization by LABOE and LABSS prior to the work.

4.3 MAINTENANCE OF TRAFFIC DURING TRACK CONSTRUCTION

Generally, track construction along the route will occupy two lanes of traffic – one for the track itself and one for a work zone. The remaining lanes will be open to traffic and the sidewalks will remain open to pedestrians. The work zone will be protected by temporary barriers on the traffic side and pedestrian fencing on the sidewalk side. The number of open lanes depends on the remaining width of the roadway. A minimum of one traffic lane in each direction will be provided, and left or right turn pockets will be provided where room is available. Pedestrian access will remain open along the sidewalk, and temporary ramps and walkways provided by the contractor to maintain ADA accessibility at intersections and crosswalks. Access to businesses will be maintained throughout construction. This can be ensured by leaving at least one business access point open to traffic. For businesses with single access points, access may be maintained through the use of temporary detours, steel plates, and half-closures of driveways. Dedicated bicycle lanes potentially affected by work zones may require temporary detours, and will be disclosed as part of a community outreach program prior to construction in those work zones. Attachment B depicts typical work zone and closure scenarios for a three-block segment, and an intersection, for track construction.

The work zone for track installation will likely span several blocks to accommodate rail installation. Cross streets will remain open to traffic while excavation occurs and the rail is installed. Temporary bridging may be required to restore vehicle and pedestrian access across an excavated area prior to rail installation. During rail installation, a cross street may need to be temporarily closed to traffic as rail is pulled and laid across the intersection. These traffic control restrictions, including the possibility of night-time and/or weekend work, will require prior authorization from LABOE, LADOT, and LABSS. To minimize any disruptions to traffic, mitigation of adverse traffic effects and traffic management and traffic control measures would be implemented, with coordination and involvement from the City before construction would occur.

The maintenance of traffic during special trackwork installation will require a larger closure area at the location of the trackwork. Depending on the type of special trackwork, a typical work zone would close two lanes of traffic for several hours, as the trackwork is positioned, installed, and welded into place. One lane may be reopened after the work shift, but the special trackwork itself would remain closed until the concrete is poured and set around the trackwork unit. The work zone would need to be enlarged again to two closed lanes during the concrete pour.

As discussed in Section 4.2 above, the possibility for multi-day closures, including night and weekend closures, exists at any location along the alignment. A request for an extended closure would be made to LADOT, LABSS, and LABOE for approval prior to the start of any extended work. Extended closures would be used for specific circumstances where it is necessary to allow the contractor uninterrupted access to a work zone, such as during a concrete pour for a segment of track or an area of special trackwork.

Remaining civil work, including paving, curbs, and sidewalk ramps, will require a one-lane or two-lane closure to complete the work. Once asphalt and concrete are set for the trackway, roadway, and sidewalks, the lane closures and traffic control devices can be removed for that segment of work and reopened to vehicle traffic. Each segment of work, comprised of the track and paving activities described above, may take anywhere from two to four weeks to complete, depending on how many blocks are included in the segment and the length of each block.

Attachment C depicts specific traffic control and lane closure scenarios for given segments along the system alignment. These scenarios are meant to describe a typical work zone and lane closure scenario for traffic and pedestrians. Detailed traffic control plans will be prepared during the final engineering design phase as described in Section 4.1 above.

4.4 MAINTENANCE OF TRAFFIC DURING SYSTEMS & OTHER WORK

Following the installation of trackwork, paving, and sidewalks, and the reopening of the roadway to traffic, several follow-up construction activities will occur. The installation of OCS poles, traffic signal poles, streetcar stop canopies and amenities, metering cabinets will occur with small and short-duration traffic control zones. There may be periods of single-lane closures or removal of a parking lane for a few hours for these activities.

When the OCS contact and support wires are strung on the OCS poles, the systems contractor may request a one-lane or two-lane closure to provide a safe work zone in the middle of the roadway. Other streetcar projects have performed this work at night to minimize the disruption of traffic. The duration of each closure for this work varies with the amount of OCS equipment to install; generally this work can be accomplished in one week per block.

4.5 HAUL ROUTES

The excavated material of this Project will need to be removed and hauled away to an off-site location. The method of removing the material for hauling away from the job site is a choice to be made by the contractor; generally this involves dump trucks entering the job site empty and exiting with a full load of excavated material. All haul-away material will be tested for contamination and treated, if necessary. Some imported material may have to be trucked to the site if sufficient material is not available or suitable for use. Table 4-1 describes typical volumes to be hauled away from the job site. Actual volumes of material and specific routes would depend on the final engineering design plans and the approval of the demolition and haul permit by LADOT, LABOE, LABSS, and LA Building and Safety.

Table 4-1 – Excavated Material & Haul Quantities

Item	Quantity	Average Trucks/Day	Number of Trucks*
Project Length	3.8 miles 20,000 feet of track		
Track Excavation	9,885 cubic yards	10-15	659 trucks
Utility Excavation	8,897 cubic yards	10-15	593 trucks
Maintenance Facility Excavation	3,333 cubic yards	10-15	222 trucks
Total			**1474 trucks – low end** **1765 trucks – high end (+20% from low end)**

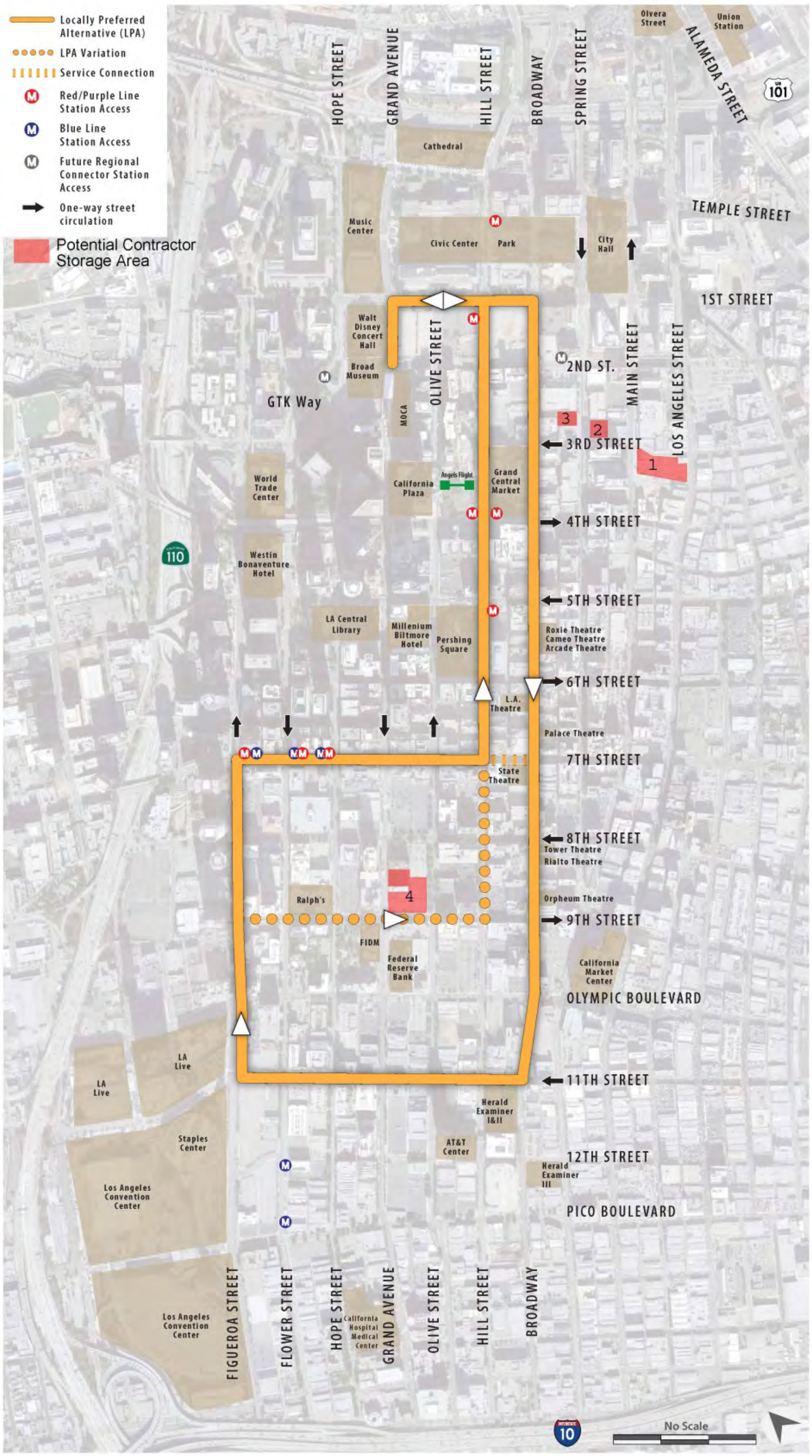
** Number of large dump trucks with 15 cubic-yard capacity*

The City of Los Angeles Bureau of Sanitation has a process to obtain a Construction and Demolition (C&D) Solid Waste Hauler Permit. This process outlines the restrictions and application process for the removal of construction waste from a jobsite. The contractor would be required to follow these requirements when transporting material to and from the study area. Some of the soil would be stockpiled within the Project limits so that it is available to use if fill material is needed. Excess soil would be hauled to an off-site location, where it may be made available for other Projects requiring fill material. Potential haul routes will be identified based on the location of construction with respect to major streets and freeways, and approved by the Sanitation Department via the application process described above.

ATTACHMENT "A"

POTENTIAL LAYDOWN AND STORAGE AREA LOCATIONS

Potential Laydown and Storage Area Locations

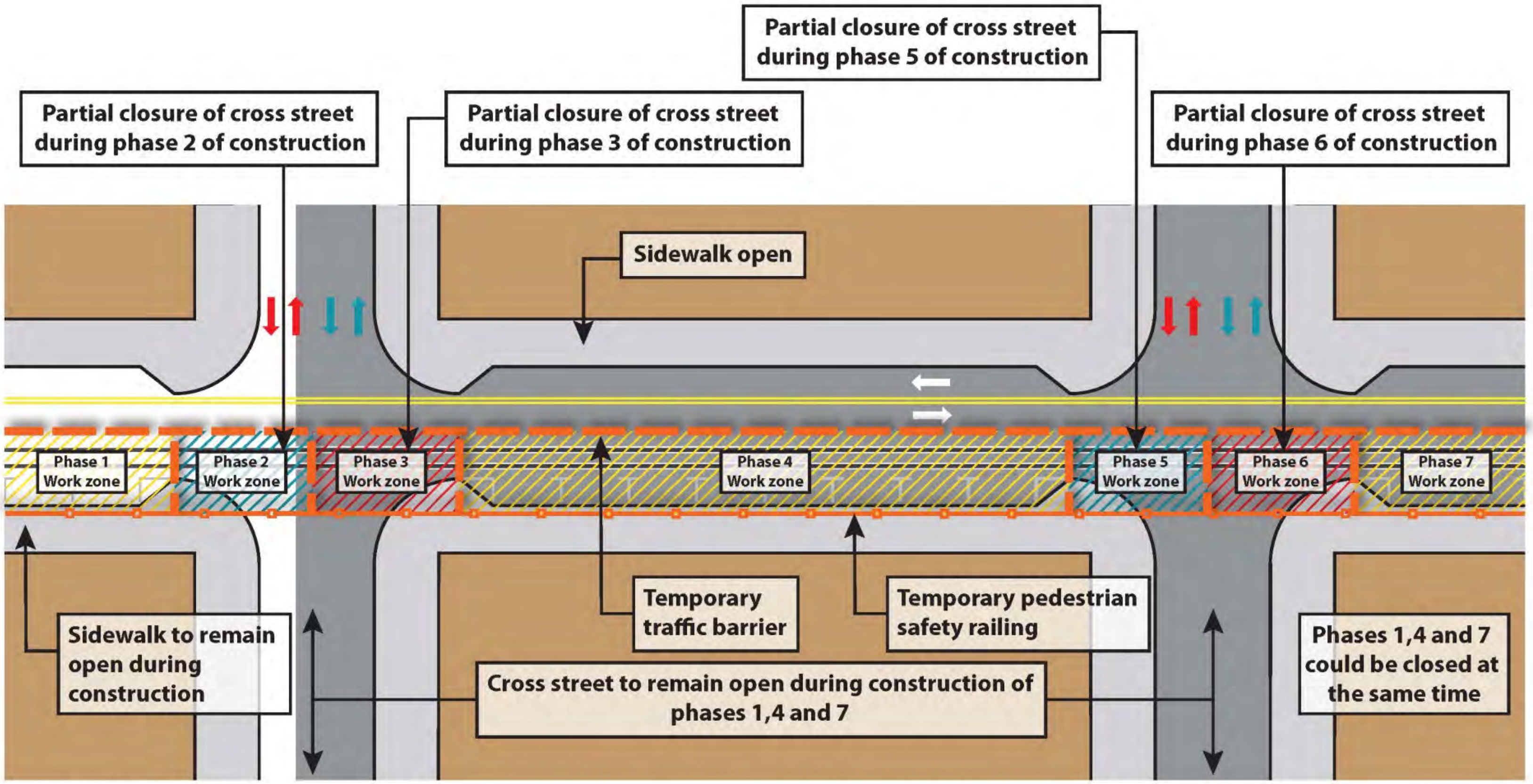


ATTACHMENT “B”

TYPICAL WORK ZONE AND CLOSURE SCENARIOS

Restoration of Historic Streetcar Service in Downtown LA

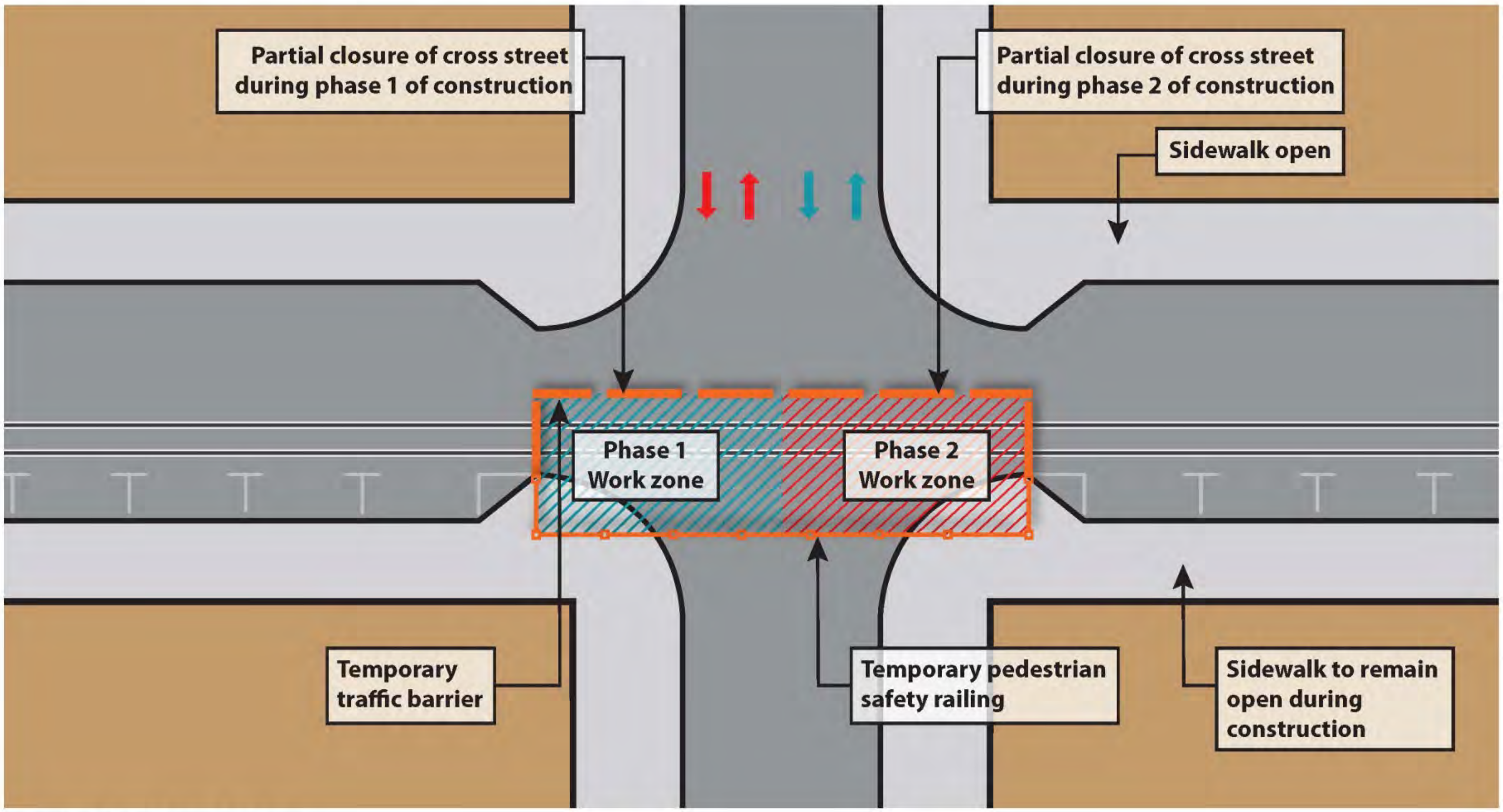
Typical Work Zone & Traffic Control



Typical 3 Block Street Segment

Restoration of Historic Streetcar Service in Downtown LA

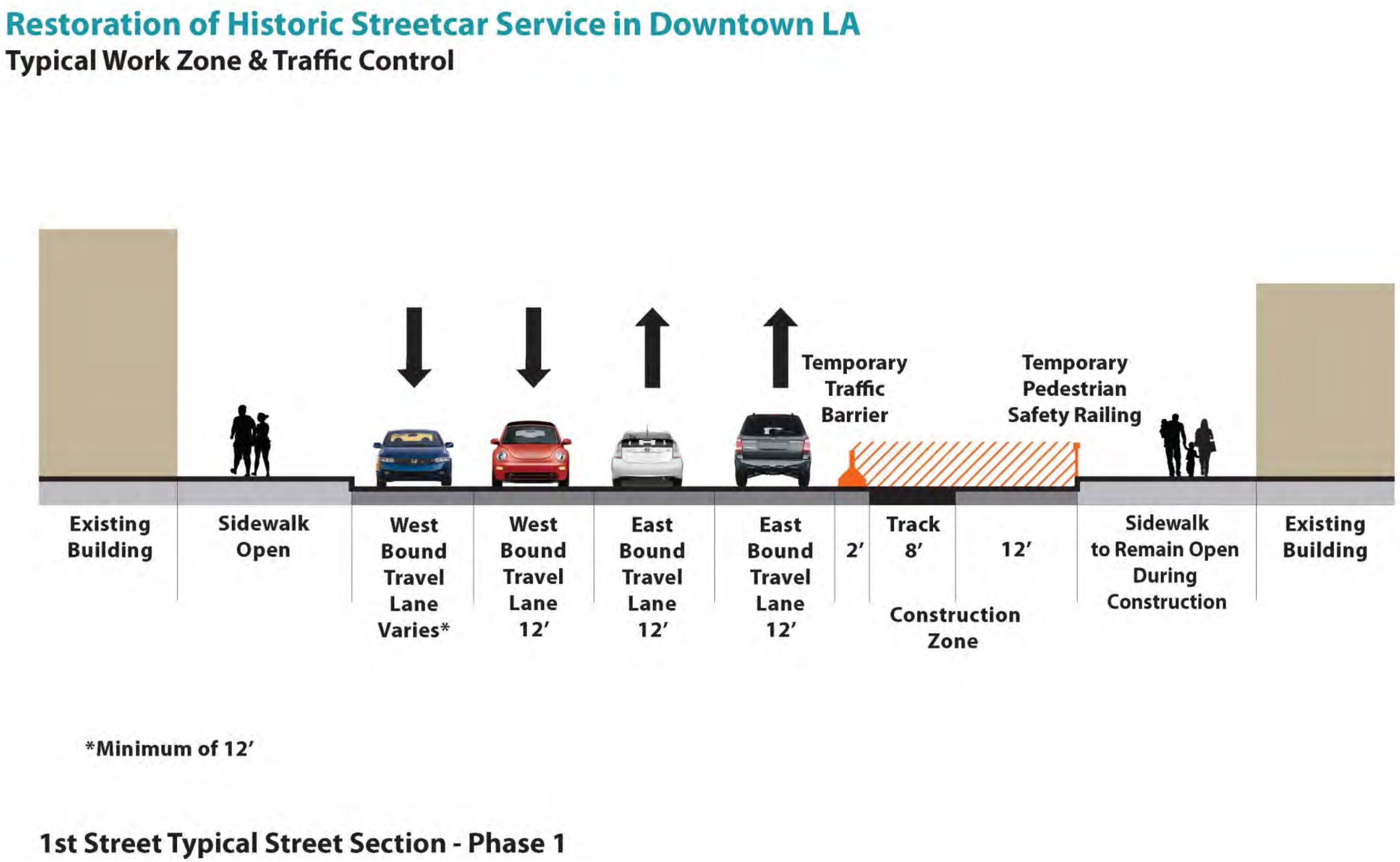
Typical Intersection Work Zone & Traffic Control



Typical Intersection

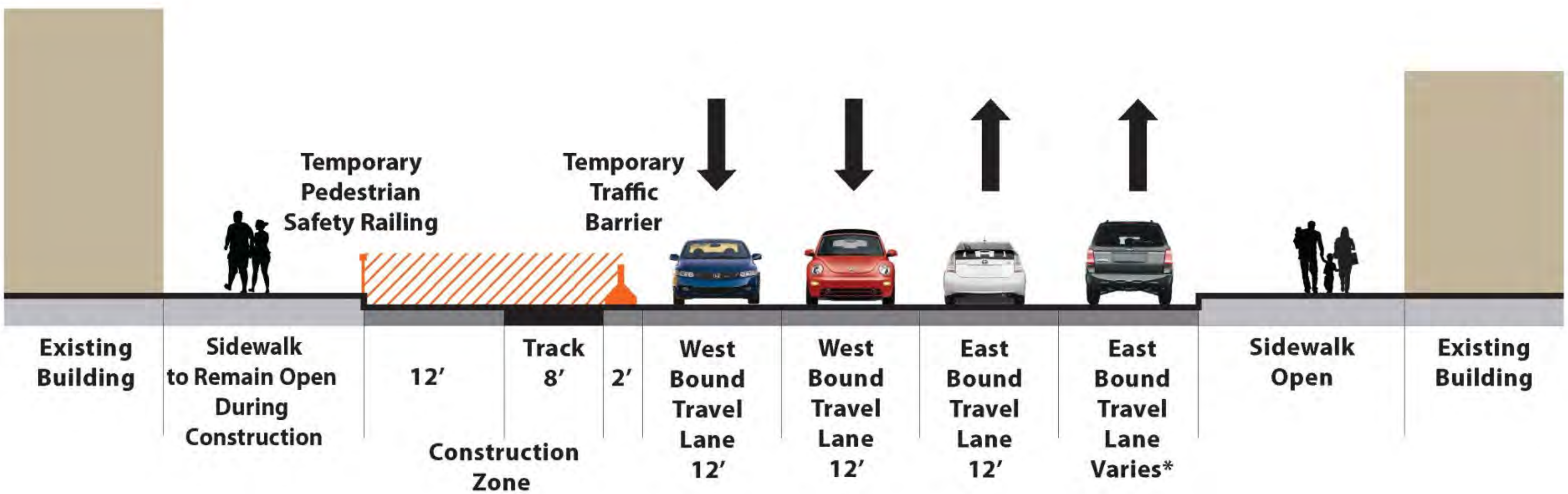
ATTACHMENT "C"

TRAFFIC CONTROL AND LANE CLOSURE SCENARIOS


Restoration of Historic Streetcar Service in Downtown LA
Typical Work Zone & Traffic Control
Temporary Traffic Barrier
Temporary Pedestrian Safety Railing
Existing Building
Sidewalk Open
West Bound Travel Lane Varies*
West Bound Travel Lane 12′
East Bound Travel Lane 12′
East Bound Travel Lane 12′
2′
Track 8′
12′
Construction Zone
Sidewalk to Remain Open During Construction
Existing Building
*Minimum of 12′
1st Street Typical Street Section - Phase 1

Restoration of Historic Streetcar Service in Downtown LA

Typical Work Zone & Traffic Control

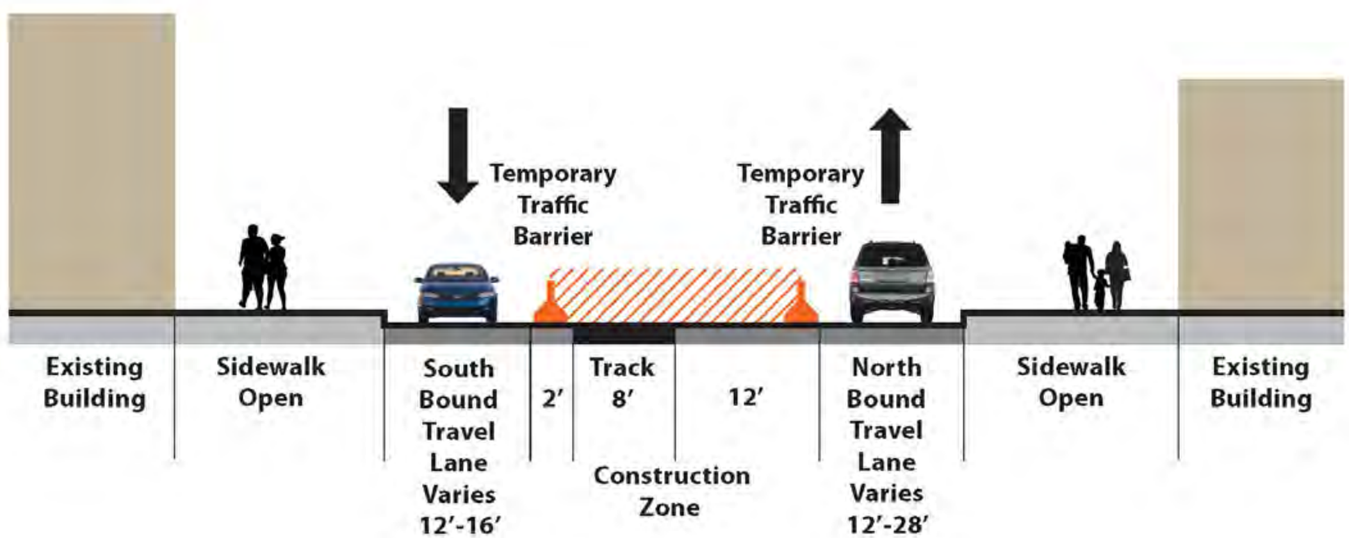


*Minimum of 12′

1st Street Typical Street Section - Phase 2

Restoration of Historic Streetcar Service in Downtown LA

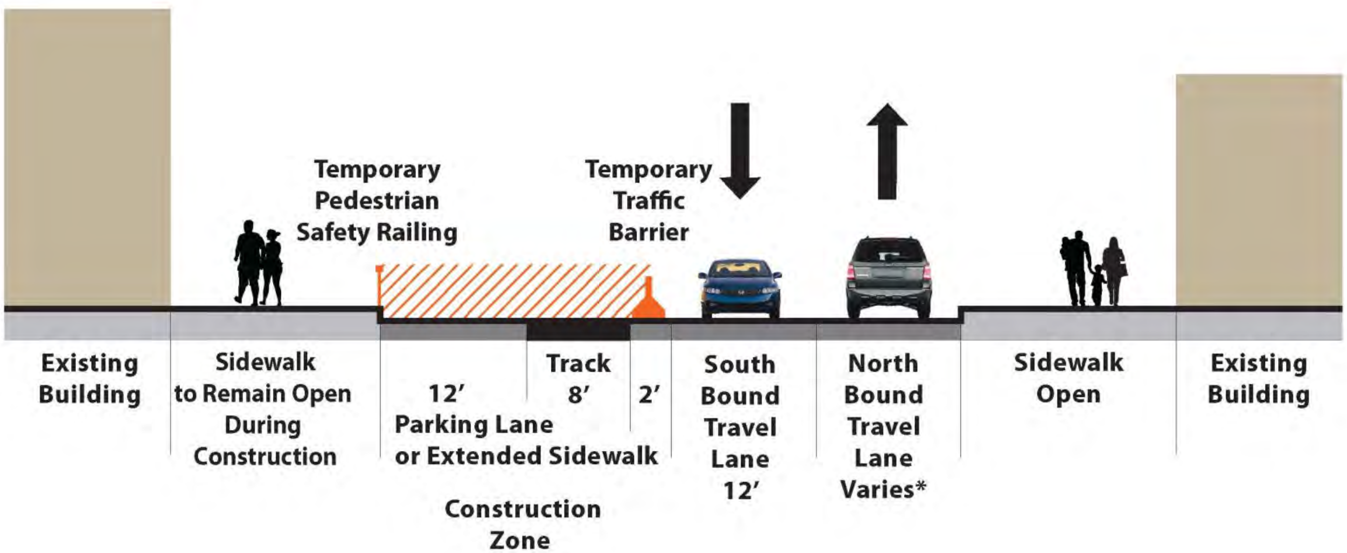
Typical Work Zone & Traffic Control



Grand Avenue Typical Street Section

Restoration of Historic Streetcar Service in Downtown LA

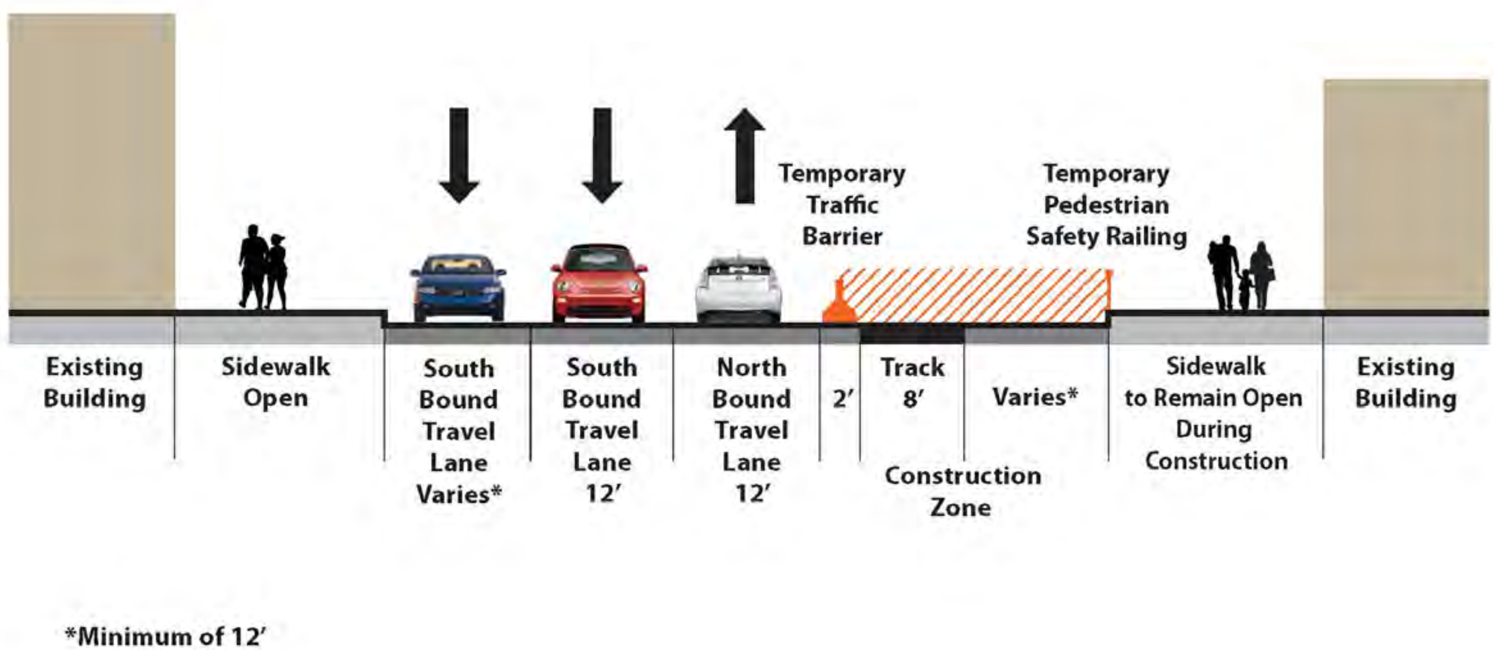
Typical Work Zone & Traffic Control



*Minimum of 12'

Broadway Typical Street Section

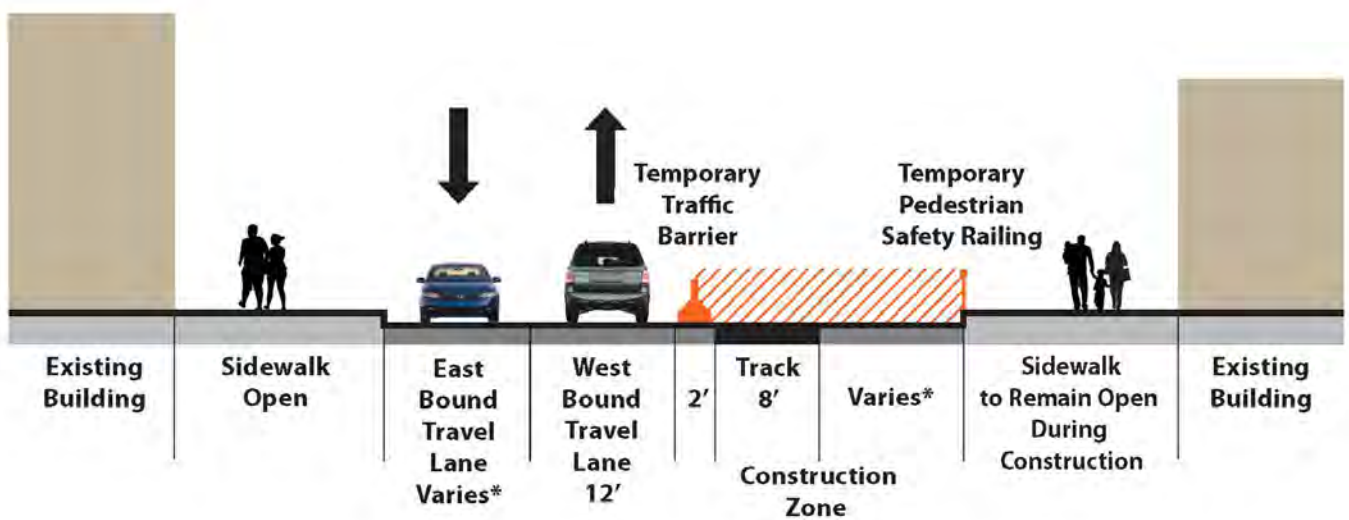
Restoration of Historic Streetcar Service in Downtown LA
Typical Work Zone & Traffic Control



Hill Street Typical Street Section

Restoration of Historic Streetcar Service in Downtown LA

Typical Work Zone & Traffic Control

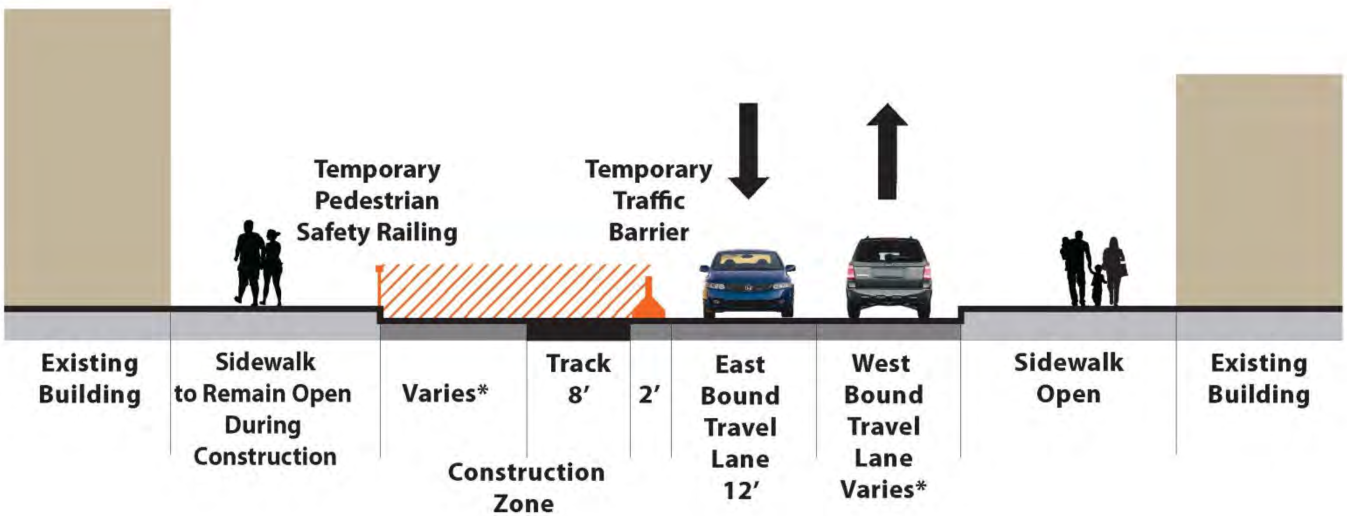


*Minimum of 12′

7th Street Connector Typical Street Section - Phase 1

Restoration of Historic Streetcar Service in Downtown LA

Typical Work Zone & Traffic Control

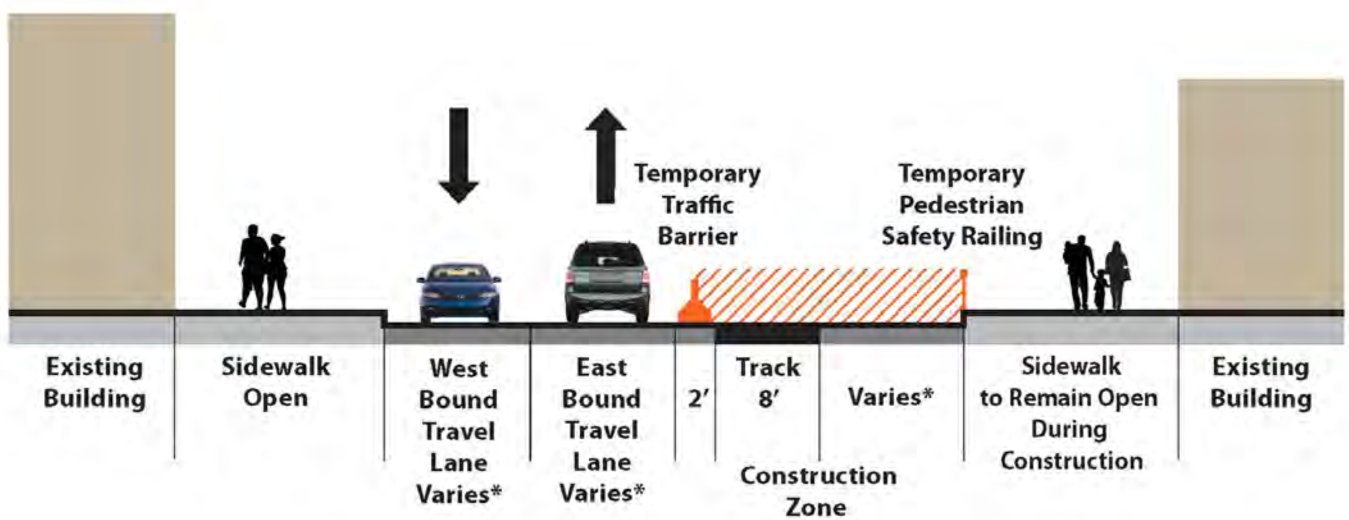


*Minimum of 12′

7th Street Connector Typical Street Section - Phase 2

Restoration of Historic Streetcar Service in Downtown LA

Typical Work Zone & Traffic Control

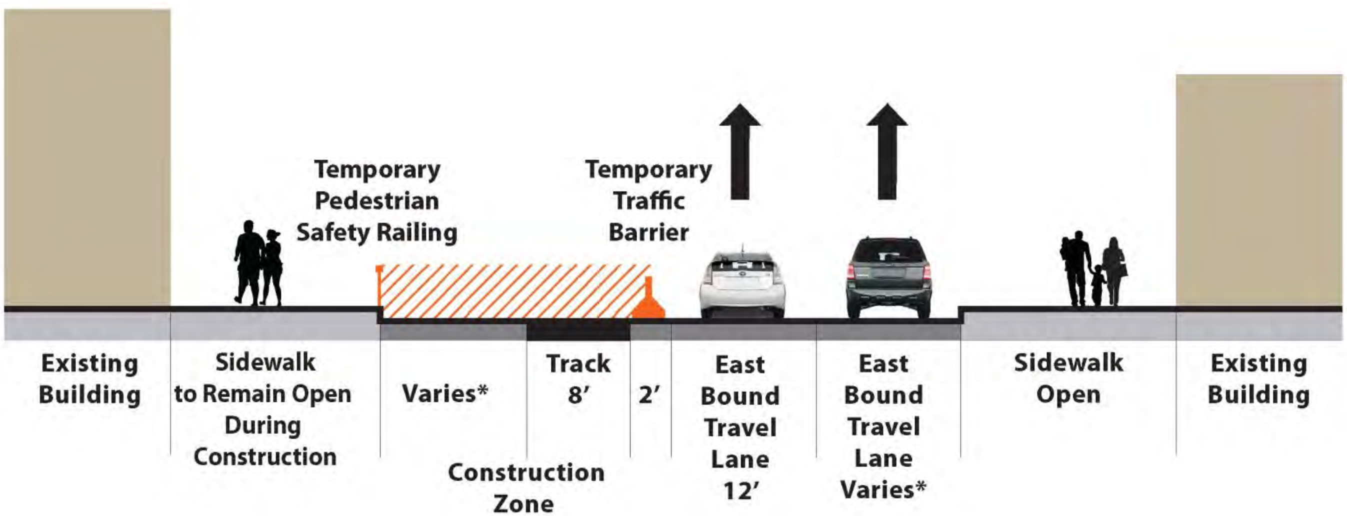


*Minimum of 12′

7th Street Typical Street Section

Restoration of Historic Streetcar Service in Downtown LA

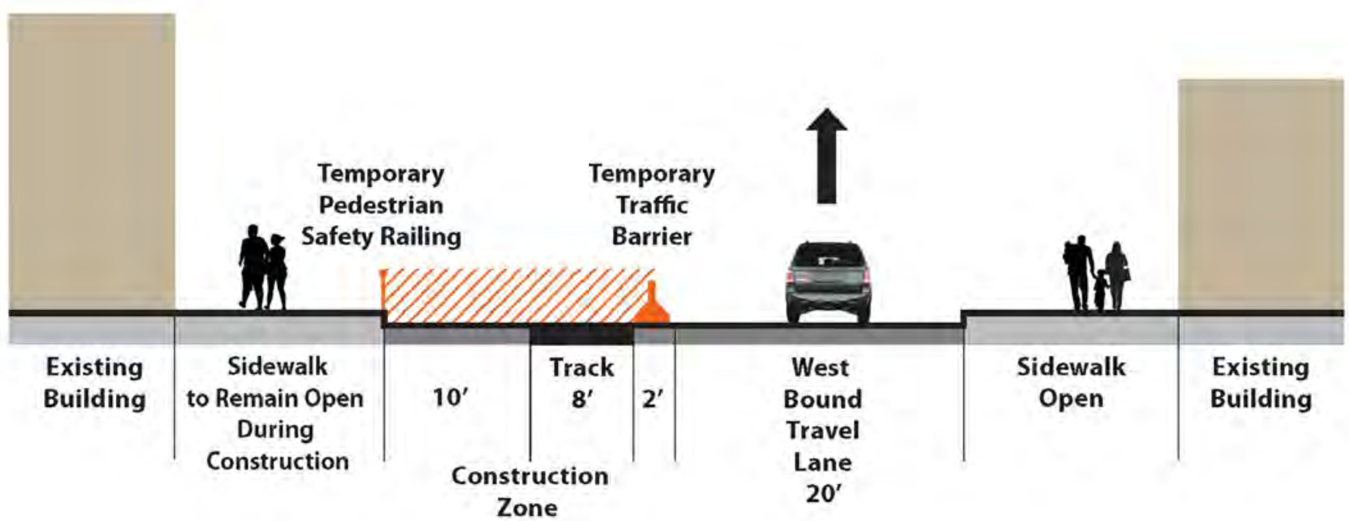
Typical Work Zone & Traffic Control



*Minimum of 12′

9th Street Typical Section

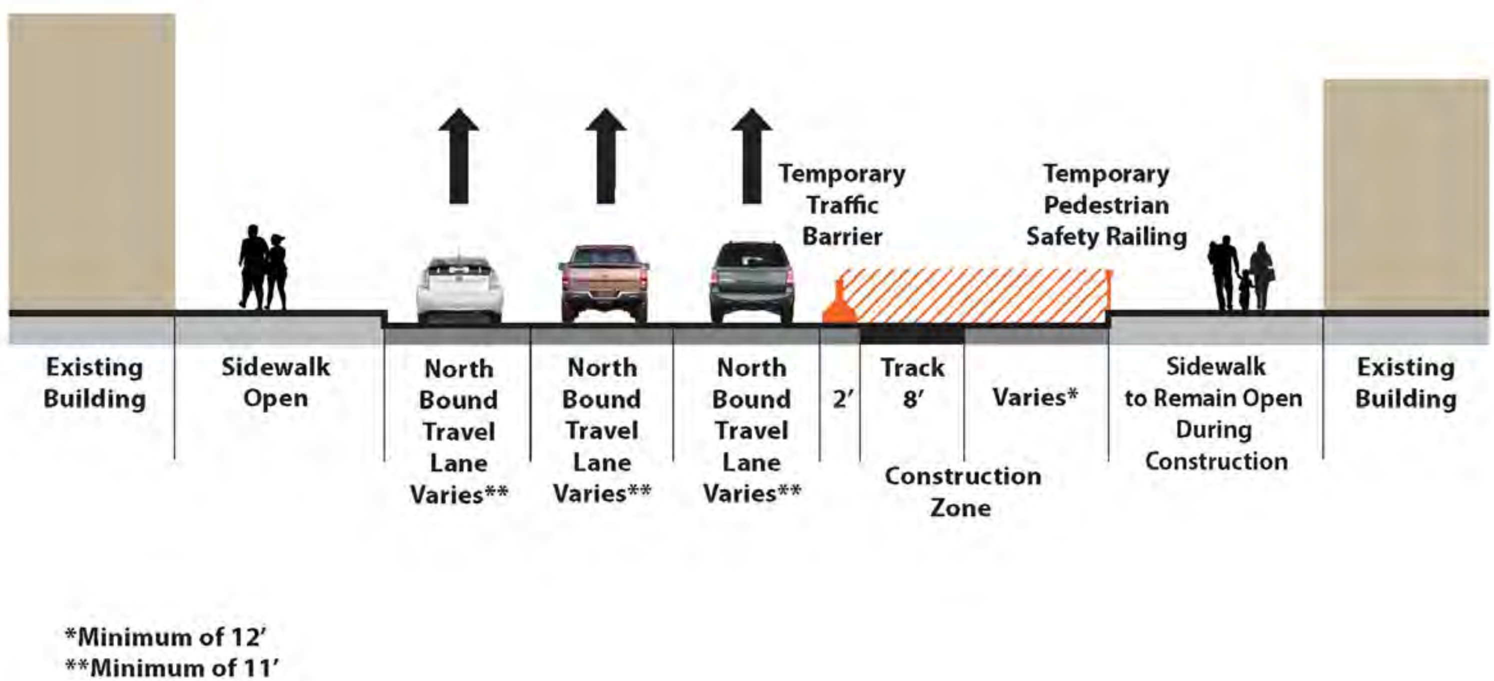
Restoration of Historic Streetcar Service in Downtown LA
Typical Work Zone & Traffic Control



11th Street Typical Street Section

Restoration of Historic Streetcar Service in Downtown LA

Typical Work Zone & Traffic Control



Figueroa Street Typical Street Section

Appendix D
Visual Impact Assessment for the Restoration of Historic Streetcar Service in Downtown Los Angeles

VISUAL IMPACT ASSESSMENT FOR THE RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

PREPARED FOR:

City of Los Angeles Department of Public Works,
Bureau of Engineering
1149 South Broadway, Suite 700
Los Angeles, CA 90015-2213

PREPARED BY:

ICF International
601 West 5th Street, Suite 900
Los Angeles, CA 90071
Contact: Carson Anderson/Andrew Johnson
213.312.1800

June 2016

ICF International. 2016. *Visual Impact Assessment for the Restoration of Historic Streetcar Service in Downtown Los Angeles.* June. (ICF 00646.11.) Los Angeles, CA. Prepared for the City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

List of Tables iii
List of Figures iv
List of Acronyms and Abbreviations v

Introduction S-1

Summary S-1

Chapter 1 Project Description 1-1
Introduction 1-1
Project Alternatives 1-1
Alternative 1: No Project Alternative 1-3
7th Street Alternatives 1-3
9th Street Alternatives 1-3
Elements of the Streetcar Alternatives 1-3
Vehicles 1-4
Platforms 1-4
Support Facilities 1-4
Maintenance and Storage Facility 1-5
Construction Activities 1-5

Chapter 2 Affected Environment 2-1
Regulatory Setting 2-1
Federal 2-1
State 2-2
Local and Regional 2-2
Physical Setting 2-8
Overall Visual Character 2-8
Land Forms 2-9

Chapter 3 Environmental Consequences 3-1
Assessment Methodology 3-1
Evaluative Framework 3-2
Quality and Character of Visual Resources 3-2
Viewer Response 3-3
Key Views 3-4
Thresholds of Significance 3-8
Determining Significance under NEPA 3-8
Determining Significance under City of Los Angeles Guidelines 3-8

Construction-Period Effects 3-9
No Project Alternative (Alternative 1) 3-9
7th Street With Grand Avenue Extension (Alternative 2)..3-9
7th Street Without Grand Avenue Extension (Alternative 3) 3-11
9th Street With Grand Avenue Extension (Alternative 4)..3-11
MSF Options..3-12
Operational-Period Effects 3-13
Visual Effect/Impact at KOP 1: Grand Avenue at 2nd Street 3-13
Visual Effect/Impact at KOP 2: Broadway between 5th and 6th Streets, Looking North 3-21
Visual Effect/Impact at KOP 3: Figueroa Street, Approaching Olympic Boulevard, Looking North 3-27
Visual Effect/Impact at KOP 4: West 7th Street, Approaching Flower Street, Looking East 3-32
Visual Effect/Impact at KOP 5: Hill Street, Approaching West 6th Street, Looking North...........3-36
Visual Effect/Impact at KOP 6: 11th Street at Broadway, Looking West 3-43
Visual Effect/Impact at KOP 7: 11th Street at Grand Avenue, Looking West 3-50
Avoidance, Minimization, and Mitigation Measures 3-55
Cumulative Effects...3-58
Chapter 4 Conclusions 4-1
Chapter 5 References 5-1
Chapter 6 Preparers 6-1

Appendix A Photos of Representative Views
Figure A-1. Photo Locations and Vantages in Downtown Los Angeles for Restoration of Historic Streetcar Service in Downtown Los Angeles Project
Photo 1. Grand Avenue at West 2nd Street, Looking South
Photo 2. Broadway at West 2nd Street, Looking South
Photo 3. Broadway, Approaching West 4th Street, Looking South
Photo 4. Broadway, Mid-block between West 5th and 6th Streets, Looking South
Photo 5. Broadway at West 7th Street, Looking South
Photo 6. Broadway Just South of West 8th Street, Looking North
Photo 7. West 11th Street, Approaching Olive Street, Looking West
Photo 8. West 11th Street, Approaching Figueroa Street, Looking West
Photo 9. Figueroa Street at Olympic Boulevard, Looking North
Photo 10. Figueroa Street, Looking North to West 7th Street
Photo 11. West 7th Street, Approaching Flower Street, Looking East
Photo 12. West 7th Street, Approaching Grand Avenue, Looking East
Photo 13. Hill Street at West 6th Street, Looking North
Photo 14. West 9th Street at Flower Street, Looking East

Tables

1 Existing Visual Quality at Key Observation Points along the Project Alignment Using the FHWA Evaluation Criteria of Vividness, Intactness, and Unity 3-5

2 Visual Impact Ratings Using Viewer Response and Resource Change (per FHWA Guidance) 3-7

3 Viewer Sensitivity and View Duration at All Key Observation Points along the Project Alignment Using the FHWA Evaluation Criteria.......... 3-7

4 Average Visual Quality at Key Observation Points [by Project Alternative/Element).......... 3-17

5 Change from Existing Conditions at Key Observation Points [by Project Alternative/Element] 3-17

6 Visual Quality Rating at Key Observation Points [by Project Alternative/Element] 3-18

Figures

1	Regional Location Map	1-2
2	Proposed Downtown Los Angeles Streetcar Route	1-5
3	Visual Impact Assessment Process (per FHWA Guidance)	3-6
4 (KOP 1)	View along Grand Avenue at 2nd Street, Looking North	3-15
4A (KOP 1)	Simulated View along Grand Avenue at 2nd Street	3-15
5 (KOP 2)	View along Broadway, between 5th and 6th Streets, Looking North	3-23
5A (KOP 2)	Simulated View along Broadway, between 5th and 6th Streets	3-23
6 (KOP 3)	View along Figueroa Street at Olympic Boulevard, Looking North	3-29
6A (KOP 3)	Simulated View, North along Figueroa Street at Olympic Boulevard	3-29
7 (KOP 4)	View along 7th Street at Flower Street, Looking East	3-34
7A (KOP 4)	Simulated View, 7th Street at Flower Street, Looking East	3-34
8 (KOP 5)	View along Hill Street at 6th Street, Looking North	3-39
8A (KOP 5)	Simulated View, Hill Street at 6th Street, Looking North	3-39
9 (KOP 6)	View along 11th Street at Broadway, Looking West	3-46
9A (KOP 6)	Simulated View, 11th Street at Broadway, Looking West	3-46
10 (KOP 7)	View along 11th Street at Grand Avenue, Looking West	3-53
10A (KOP 7)	Simulated View, 11th Street at Grand Avenue, Looking West	3-53
11	Streetcar and Overhead Contact System, Broadway at 9th Street	3-57
12	Streetcar and Overhead Contact System, West 9th Street at Hill Street	3-58

Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BIDs	business improvement districts
BSMP	Broadway Streetscape Master Plan
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
City	City of Los Angeles
CRHR	California Register of Historical Resources
DASH	Downtown Area Short Hop
DC	direct current
DDG	Downtown Design Guide
EIR/EA	Environmental Impact Report/Environmental Assessment
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HCMs	Historic-Cultural Monuments
HDLADG	Historic Downtown Los Angeles Design Guidelines (2002)
KOPs	key observation points
LABOE	City of Los Angeles Department of Public Works, Bureau of Engineering
LADOT	Los Angeles Department of Transportation
LAMC	Los Angeles Municipal Code
LASED	Los Angeles Sports and Entertainment District
LEED	Leadership in Energy and Environmental Design
Metro	Los Angeles County Metropolitan Transportation Authority
MOCA	Museum of Contemporary Art
mph	miles per hour
MSF	Maintenance and storage facility
msl	mean sea level
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places

OCS	overhead contact system
Project	Restoration of Historic Streetcar Service in Downtown Los Angeles
TPSS	traction power substations
USC	U.S. Government Code
VIA	Visual Impact Assessment

Introduction

This report describes the Visual Impact Assessment for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). The lead agency for the Project under the California Environmental Quality Act (CEQA) is the City of Los Angeles (City). The City is a joint lead agency with the Federal Transit Administration (FTA) under the National Environmental Policy Act (NEPA). This visual impact assessment (VIA) was prepared in accordance with the thresholds outlined in both the California Environmental Quality Act (CEQA) and the federal National Environmental Policy Act (NEPA) for determining significant impacts/adverse effects. The Environmental Consequences outlined below in Chapter 3 will be subsequently used to satisfy NEPA requirements and to inform the impact determinations made in the proposed Project's Environmental Impact Report (EIR) to comply with CEQA.

Summary

The purpose of this VIA is to document potential visual impacts caused by the proposed Project and propose measures to lessen any detrimental impacts that are identified. Visual impacts are demonstrated by identifying visual resources in the Project area, measuring the amount of change that would occur as a result of the Project, and predicting how the affected public would respond to or perceive those changes. As mentioned, the proposed Project would be subject to both CEQA and NEPA. As such, this VIA was prepared in accordance with the thresholds outlined in both CEQA and NEPA for determining significant impacts/adverse effects.

The proposed Project consists of the construction and operation of a streetcar system in downtown Los Angeles, California along a 3.8-mile loop. The Project alignment would begin at Hill and 1st Street, run along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide an alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The primary purposes of the Project are to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. By connecting residential and employment hubs, shopping districts, civic resources, cultural institutions, historic landmarks, entertainment venues, and transit services, the Project would increase mobility and accessibility for people who live and work in the downtown area, as well as for visitors.

The build alternatives would not result in substantially adverse effects or significant impacts on visual resources. Visual quality would not be diminished under the build alternatives. Along Broadway and other locations, Project actions, combined with other local design improvement initiatives proposed as part of related projects, are expected to improve visual quality through the implementation of consistent paving, landscaping, and streetscape furniture installations.

Architecturally and historically significant buildings are the primary visual resources in the downtown area. Significant views of historic buildings would not be adversely affected by Project features. The Project improvements would expand existing public transportation facilities on selected local streets by re-establishing an updated and limited version of the extensive streetcar system that once crisscrossed downtown during the first half of the twentieth century. Primary Project components—streetcar platforms, track, and new paving—would be constructed at or near

street level and, consequently, would not obscure views of visual resources. In addition, the overhead streetcar electrification system—or overhead contact system (OCS) would be designed to be consistent with specific downtown design contexts (e.g., Historic Downtown Los Angeles Design Guidelines, Figueroa Corridor Streetscape Project, and Broadway Streetscape Master Plan).

In most instances, installation of the traction power substations (TPSS) would occur on private property, and, in some instances, the TPSS facilities would be located in the public right-of-way. The vehicle maintenance and storage facility (MSF), however, would call for the construction of buildings on private property outside the public right-of-way. Although construction of the vehicle MSF may involve a greater level of temporary disruption to the visual setting than the tracks or platforms for streetcar stops, these proposed buildings and site features would be designed to fit into the surrounding neighborhood in terms of architectural treatment, scale, proportion, materials, texture, and color. Also, through adherence to the pertinent downtown district design guidelines and implementation of the avoidance, minimization, and/or mitigation measures outlined in this report, adverse operational-period effects/impacts on visual resources would be avoided or substantially minimized.

Temporary changes to views as a result of construction-period activities, such as excavation, pouring concrete, paving, streetcar track installation, installing electrification systems, and laydown areas are not considered substantially adverse/significant. Such activities are simply larger-scale expressions of public works activities that have commonly occurred on downtown streets over the years. They also are expected to occur as part of the related design improvement projects downtown, for example, as part of the Figueroa Corridor Streetscape Project and Broadway Streetscape Master Plan (BSMP). Due to its temporary nature, standard best management practices and minimization measures would be sufficient to avoid substantially adverse effects/significant impacts. Impacts would be further reduced because construction would occur sequentially or in a leap-frog manner along affected streets to avoid full street closure (thereby avoiding long areas of continuous visual disruption), and the construction-period activities typically call for construction at or near street level; also, these activities would involve the installation of above-ground aerial elements, such as OCS wires and support poles, platform canopies, and TPSS housings that do not have the potential to cast shadows on shade-sensitive uses nor significantly obscure views of visual resources (e.g., historic buildings).

Chapter 1
Project Description

Introduction

The Project consists of the construction and operation of a streetcar system in downtown Los Angeles, California along a 3.8-mile loop. The Project alignment would run along 1st Street, Broadway, 11th Street, Figueroa Street, alternatively using 7th Street or 9th Street, and Hill Street. An extension to Grand Avenue is also proposed. The project would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would travel through several neighborhoods or districts within the Central City Community Plan area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, and Fashion District. This dense urban area is known to be the region's largest employment center and one of the region's largest tourist destinations, and it has a rapidly growing residential population. Streetcar stops would be located approximately every block in the north/south direction and every other block in the east/west direction. Figure 1 depicts the regional location of the Project.

The track and roadway configuration would allow for a mixed flow of vehicles and a fleet of electrically powered streetcars. Power to the streetcar vehicles would be provided by five TPSS and an OCS. An MSF site would be constructed as part of the Project.

The primary purposes of the Project are to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. By connecting residential and employment hubs, shopping districts, civic resources, cultural institutions, historic landmarks, entertainment venues, and transit services, the Project would increase mobility and accessibility for people who live and work in the downtown area, as well as for visitors.

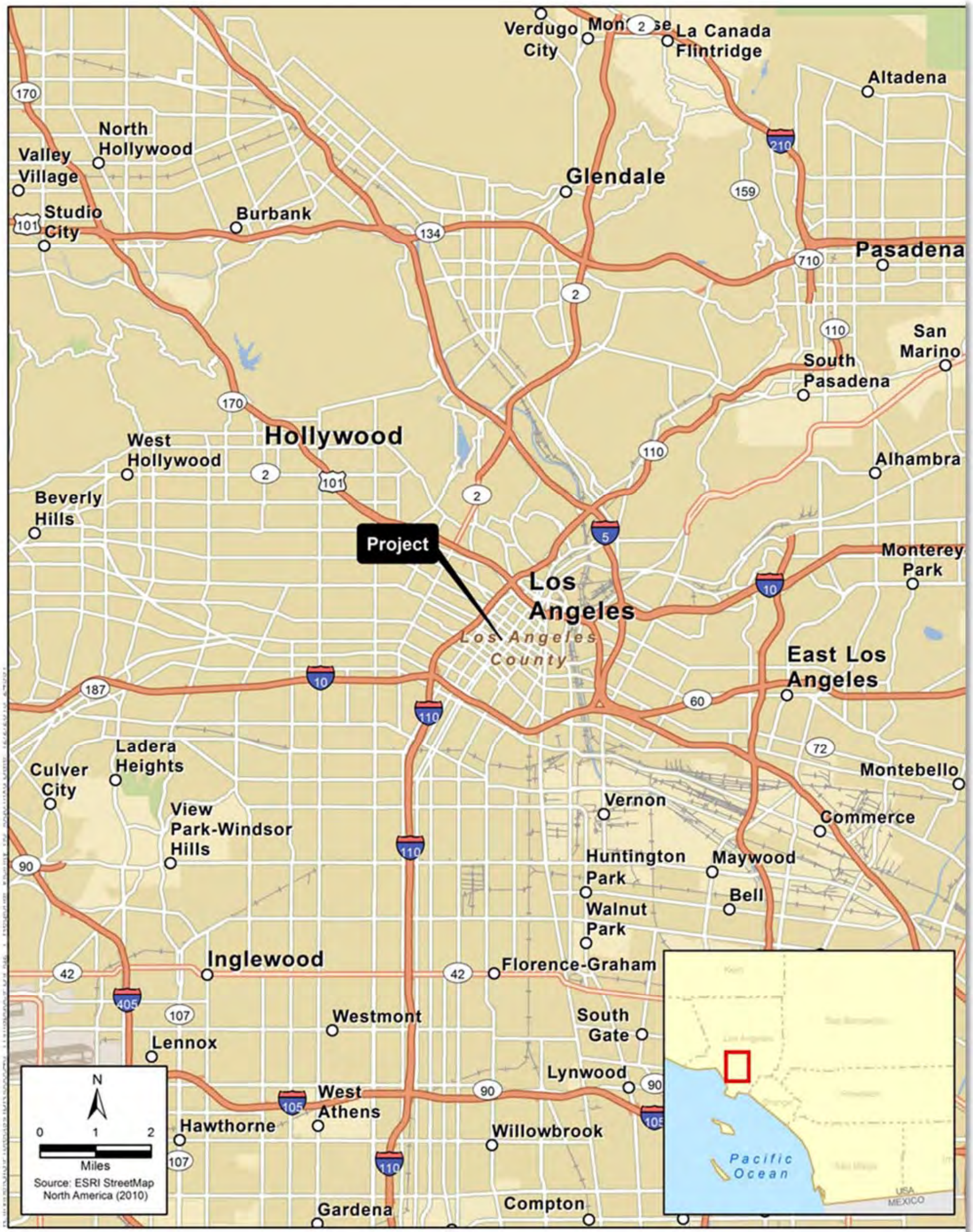
Project Alternatives

Five Project alternatives are being considered. Four build alternatives and a No Project Alternative (Alternative 1) are being studied as part of the EIR and an Environmental Assessment (EA) that are being prepared in compliance with CEQA and NEPA:

- 7th Street with a Grand Avenue Extension (Alternative 2)
- 7th Street without a Grand Avenue Extension (Alternative 3)
- 9th Street with a Grand Avenue Extension (Alternative 4)
- 9th Street without a Grand Avenue Extension (Alternative 5)

These alternatives are described below.

Figure 1. Regional Location Map



Alternative 1: No Project Alternative

The No Project Alternative is required by Section 15126.6(e) of the CEQA Guidelines. The No Project Alternative assumes that the proposed Project would not occur. Existing conditions in the Project study area would remain under this alternative.

7th Street Alternatives

Alternative 2: 7th Street with Grand Avenue Extension

The 7th Street Alternative with the Grand Avenue Extension would construct and implement streetcar service along an alignment that would begin on Grand Avenue just north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue

Alternative 3: 7th Street without Grand Avenue Extension

This Alternative would construct and implement streetcar service along a one-way loop that would begin at 1st and Hill Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street and north along Hill Street.

9th Street Alternatives

Alternative 4: 9th Street with Grand Avenue Extension

The 9th Street Alternative with the Grand Avenue Extension would follow the same alignment as the 7th Street Alternative with the Grand Avenue Extension, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the Project alignment would begin and terminate on Grand Avenue, north of 2nd Street.

Alternative 5: 9th Street without Grand Avenue Extension

This Alternative would follow the same alignment as the 7th Street Alternative without the Grand Avenue Extension, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

Elements of the Streetcar Alternatives

A brief overview of the elements are common to the build alternatives of the Project are presented below.

Vehicles

A fleet of six electrically powered streetcars is currently estimated to be needed to operate at that frequency. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 60 to 80 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. The streetcars would be designed with low floors to be compliant with the *Americans with Disabilities Act* (ADA). Operating speeds for the streetcars would be the maximum posted downtown speed limit, which is currently 25 miles per hour (mph) on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be collected from an overhead catenary wire supported by poles along the streetcar track, or power delivery may be wireless in some segments.

Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the final number, size and placement of platforms will be determined by engineering design. With varying configurations, the platforms would generally consist of a raised concrete pad measuring approximately 8 feet wide and 70 feet long. Some of the streetcar platforms would be shared by Metro, other regional operators, and LADOT DASH buses. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to approximately 70 feet long. The maximum curb height would be approximately 8 to 14 inches. Platforms would be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition to match, or nearly match, the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA access requirements.

The platforms would resemble bus stops, with distinctive signage, and may include amenities such as shelters, benches, signs displaying minutes to train arrival, and kiosks containing information on the route, schedule, and fares. The design and location of the platforms would be consistent with related projects that may construct streetscape elements such as curb extensions, bus stops, or other street amenities along the Project alignment.

Two components of the streetcar support facilities would have physical locations and attributes that are considered individually in this VIA and are described below.

Support Facilities

Two components of the streetcar support facilities would have physical locations and attributes that are considered individually in this VIA and are described below.

Overhead Contact System

There are two potential configurations for the OCS wires, which supply electrical current to the streetcar vehicles. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. OCS suspension at turning locations would be specific to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide direct current (DC) power for the streetcars. Each unit would be a durable structure containing electrical and electronic equipment. The TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. Each TPSS would typically be located within a parking lot or other suitable off-street location. At one location, at 2nd and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way.

Maintenance and Storage Facility

The proposed Project would require a Maintenance and Storage Facility (MSF) to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

The MSF would be located at one of four potential sites: the southwest corner of 11th Street and Olive Street, the southeast corner of 11th Street and Olive Street, the northwest corner of Hill Street and 5th Street, or the west side of Broadway between 2nd and 3rd Streets. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the proposed Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum LEED certification requirements. Streetcars would access the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning and secure storage of streetcar vehicles.

[Figure 2: Proposed Downtown Los Angeles Streetcar Route to be replaced]

Construction Activities

Construction activities associated with the Project would affect portions of Grand Avenue (if the Grand Avenue extension is selected), 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include pavement removal, utility relocation, excavation, construction of track drains, installation of concrete track slab and rails, construction of station platforms, installation of special track work units, reconstruction of ramps and sidewalks, paving, and striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations. The remainder of this section offers a typical description of how the construction process would proceed. It should be noted that the actual construction process and schedule will be determined by the contractor at the time of construction; therefore, the information presented below should be regarded as illustrative of similar typical construction processes.

Construction equipment that may be required for the Project would include backhoes, small cranes, dump trucks, concrete trucks, paving equipment, rail transporters, bulldozers, graders, cranes, compactors, rollers, drill rigs, paving machines, rail welding equipment, concrete mixers, flatbed trucks, dump trucks to haul dirt, rail installation vehicles, and various hand and power tools.

Laydown and storage area(s) for construction would be established near the Project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have been currently identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 Spring Street; and (4) Grand Avenue to Olive Street, between 8th Street and 9th Street. However, these should be regarded as example sites and other locations within the study area may be chosen and become available. All four example locations are currently being used as parking lots adjoining City streets within one block of the Project alignment.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC, LADOT design standards and special provisions, California Manual on Uniform Traffic Control Devices, and all City bureaus' design manuals, special provisions, and standard plans, including the latest Standard Specification for Public Works Construction (SSPWC or GreenBook), the City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE) BrownBook, the Work Area Traffic Control Handbook, and any requirements imposed by FTA.

Chapter 2
Affected Environment

Regulatory Setting

This section provides an overview of the pertinent federal, state, and local policies governing aesthetics. This VIA was prepared in accordance with the Federal Highway Administration's (FHWA's) *Visual Impact Assessment for Highway Projects* by identifying visual resources in the Project area, measuring the amount of change that would occur as a result of the Project, and predicting how the affected public would respond to or perceive those changes. As mentioned, the proposed Project would be subject to both CEQA and NEPA. As such, this VIA was prepared in accordance with the thresholds outlined in both CEQA and NEPA for determining significant impacts/adverse effects, in addition to the other pertinent federal, state, and local policies governing aesthetics described in this section. The Environmental Consequences outlined below in Chapter 3 will be subsequently used to satisfy NEPA requirements and to inform the impact determinations made in the proposed Project's EIR to comply with CEQA.

Federal

Federal Highway Administration Visual Impact Assessment Guidance

The FHWA's *Visual Impact Assessment for Highway Projects* provides an analytical framework for identifying and assessing qualitative changes to the visual environment that could be introduced as part of a transportation project, regardless of whether the project calls for public transit or highway improvements, parkland improvements, or architectural design interventions. The FHWA guidance is widely used by local, regional, state, and federal planning agencies in California to assess the potential of a project to affect visual quality. It is intended to satisfy the provisions of both NEPA and CEQA as they relate to aesthetic impacts. The process used in the VIA generally follows the guidelines outlined in *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1988).

National Environmental Policy Act (NEPA)

Although specific significance thresholds or screening criteria are not provided under NEPA or Council on Environmental Quality (CEQ) regulations, in its Declaration of Purpose, NEPA states that it is the responsibility of the federal government to "… assure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings … and to attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences" (Section 101) (U.S. Government Code [USC], Title42, Section 4331). However, among the 10 types of issues listed in NEPA as important to consider, three touch upon aesthetics indirectly, including the potential to adversely affect the unique character of the affected resource, the potential for controversy, and the potential to violate laws and regulations (Section 1508.27, CEQ: Regulations for Implementing NEPA, Index and Terminology).

State

California Environmental Quality Act (CEQA)

CEQA requires an evaluation of scenic resources when considering project effects on the environment. The evaluation considers site-specific history, context, and area sensitivity, such as whether light and glare, demolition, and new development could potentially change visual character and affect scenic views and natural and human-made visual resources.

Local and Regional

Los Angeles CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide* (2006) is a guidance document that draws together practical information useful to City staff, project proponents, and the public involved in the environmental review of projects in the City of Los Angeles subject to the CEQA. The document is a reference guide that provides information that can assist in the preparation and review of environmental impact analyses. The *L.A. CEQA Thresholds Guide* provides the following screening criteria for determining significant impacts related to visual/aesthetics:

1. The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished;
2. The amount of natural open space to be graded or developed;
3. The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.;
4. The degree of contrast between proposed features and existing features that represent the areas valued aesthetic image;
5. The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements;
6. The degree to which the project would contribute to the area's aesthetic value;
7. Applicable guidelines and regulations;
8. The nature and quality of recognized or valued views (such as natural topography, settings, man-made or natural features of visual interest, and resources such as mountains or the ocean);
9. Whether the project affects views from a designated scenic highway, corridor, or parkway;
10. The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment);
11. The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point;
12. The change in ambient illumination levels as a result of project sources; and
13. The extent to which project lighting would spill off the project site and effect adjacent light-sensitive areas.

The *L.A. CEQA Thresholds Guide* also provides specific guidance for the evaluation of a project's potential for causing shade/shadow impacts. The key screening criterion is whether a project would include light-blocking structures in excess of 60 feet in height above the ground elevation, and located within a distance of three times the height of the proposed structure from a shadow-sensitive use. If so, the project alternatives would cause a significant impact with respect to shade/shadow sensitive uses if they would:

1. Cast shade on shadow sensitive uses for more than three hours between the hours of 9 a.m. and 3 p.m. Pacific Standard Time (between October and early April), or for more than four hours between the hours of 9 a.m. and 5 a.m. Pacific Daylight Time (between early April and late October).

The Winter Solstice (December 22) and Summer Solstice (June 21) represent the times during the calendar year during which the shade/shadow impacts would be greatest.

Los Angeles Municipal Code (LAMC)

The LAMC sets forth regulations and standards regarding the allowable type, density, height, and design of new development projects. In particular, Chapter 1 of the Code, *General Provisions and Zoning*, provides development standards for the various zoning districts in the City of Los Angeles. In addition, the LAMC also sets forth the following specific regulations regarding lighting:

- Chapter 1, Article 2, Section 12.21 General Provisions, paragraph A, Section 5, Park (k) restricts light spill onto adjacent properties and provides minimum luminance levels for safety within and around parking facilities.
- Chapter 1, Article 7, Section 17.08 C states that plans for street lighting shall be submitted to and approved by the Bureau of Street Lighting for subdivision maps.

Citywide General Plan Framework Element

As it relates to the evaluation of aesthetics and views, the General Plan Framework's Urban Form and Neighborhood Design Chapter establishes a goal of creating a livable city for existing and future residents with interconnected, diverse neighborhoods (Goal 5A). Also within the General Plan Framework, the Open Space and Conservation chapter calls for the use of open space to enhance community and neighborhood character (Objective 6.2). The policies in this chapter recognize that there are communities where open space and recreational resources are currently in short supply and, therefore, suggests that pedestrian-oriented streets and small parks, where feasible, might serve as important resources for meeting the open space and recreation needs of residents (Policy 6.2.1).

Applicable objectives from the Urban Form and Neighborhood Design chapter and the Open Space and Conservation chapter address such issues as pedestrian activity and orientation, transitions in building height, landscaping and landscape buffers, ground floor uses, sidewalks and other streetscape elements, and open space.

Furthermore, the General Plan's Mobility Element, also known as the *Mobility Plan 2035*, provides a roadmap for achieving a transportation system that balances the needs of all road users. As an update to the City's General Plan Transportation Element (last adopted in 1999), *Mobility Plan 2035* incorporates "Complete Streets" principles and lays the policy foundation for how future generations of Angelenos interact with their streets. Complete Streets aims to provide safe and efficient transportation for pedestrians, bicyclists, transit riders, and car/truck drivers. Mobility Plan 2035 prioritizes the implementation of various actions (funding and staff permitting) and the Complete Street Manual describes and identifies implementation procedures for the City's expanded Street Standards and Guidelines. The manual includes information on the roadway, intersections, pedestrian crossings, sidewalks, bus stops, and other placemaking elements. The 2010 Bicycle Plan was integrated into the Complete Street Manual so technical design information for all modes is in one document.

Central City Community Plan

The Central City Community Plan is part of the 2009 *Los Angeles General Plan Framework.* As part of the City of Los Angeles General Plan, the Central City Community Plan, among other purposes, guides development within the Project area aimed at creating a healthful and pleasant environment. Chapter III, *Land Use Policies and Programs*, serves as the land use element of the General Plan for the downtown area. It includes a number of objectives and policies that address the visual aspects of new development. Chapter V, *Urban Design*, of the Community Plan acknowledges that the design of the buildings in the downtown area has not adequately addressed the planning concepts of well-designed streets, squares, and parks that are essential for a pedestrian-friendly city. The Community Plan provides broad urban design objectives for each district in the Community Plan area. It provides urban design objectives for the revitalization of Broadway as a regional-scale, nighttime entertainment district that promotes the preservation and reuse of its rare collection of historic theaters in the downtown area.

City of Los Angeles Walkability Checklist

The 2008 Walkability Checklist for Entitlement Review was developed by the City Planning Department's Urban Design Studio to encourage City planning staff, project proponents, and community stakeholders to pursue high quality urban design that provides enhanced pedestrian movement, access, comfort, and safety, both in the public right-of-way and on private properties. It specifies urban design guidelines that are generally applicable to all projects requiring discretionary approval for new construction. The Walkability Checklist consists of objectives, goals, and implementation strategies regarding various design elements that are intended to improve the pedestrian environment, protect neighborhood character, and promote high quality urban form. Such topics as sidewalks, crosswalks/street crossings, on-street parking, utilities, building orientation, off-street parking and driveways, onsite landscaping, building façades, and building signage and lighting are addressed and should be considered in the design of a project.

Citywide Design Guidelines

The 2011 Citywide Design Guidelines were adopted by the City Planning Commission for use in reviewing applications for commercial, multi-family, mixed use, and industrial projects. The Commercial Guidelines, dated May 2011, serve to implement the 10 Urban Design Principles, a part of the Framework Element. The first two principles deal with mobility and transit access in the public right-of-way. These principles, listed below, are a statement of the City's vision for the future of Los Angeles, providing guidance for new development and encouraging projects to complement existing urban form in order to enhance the built environment in Los Angeles. The 10 Principles of Urban Design listed in the Citywide Design Guidelines are as follows:

1. Develop inviting and accessible transit areas.

2. Reinforce walkability, bikeability, and wellbeing.
3. Nurture neighborhood character.
4. Bridge the past and the future.
5. Produce great green streets.
6. Generate public open space.
7. Stimulate sustainability and innovation in our city.
8. Improve equity and opportunity.
9. Emphasize early integration, simple processes, and maintainable solutions.
10. Ensure connections.

The Commercial Citywide Design Guidelines also set forth six objectives that are applicable to the Project:

Objective 1: Consider neighborhood context and linkages in building and site design.

Objective 2: Employ high quality architecture to define the character of commercial districts.

Objective 3: Augment the streetscape environment with pedestrian amenities.

Objective 4: Minimize the appearance of driveways and parking areas.

Objective 5: Include open space to create opportunities for public gathering.

Objective 6: Improve the streetscape by reducing visual clutter.

Downtown Design Guide

With the exception of the Historic Downtown District, which is governed by the *Historic Downtown Los Angeles Design Guidelines* (2002), the *Downtown Design Guide* (DDG) (City of Los Angeles 2009) provides guidelines for all of downtown. Its overarching goal is to create a better and more livable downtown, in part by promoting sustainable development with a focus on walkability and the formation of great streets, neighborhoods, and districts offering good connections to transit. Implemented by the City's Planning, Transportation, and Public Works departments, the DDG is tailored to protect and enhance the character of downtown's streetscapes, while respecting the contributions to those streetscapes made by historically significant districts and buildings (namely, massing, scale, and design context). Outside the Historic Downtown District, DDG guidance has primacy with respect to other potentially conflicting downtown design policies. It is intended for application in conjunction with the City's new street standards and emphasizes mobility alternatives to the automobile.

The DDG contains 11 topic areas: sidewalks and setbacks, ground floor treatment, parking access, massing and streetwall, onsite open space, architectural detail, streetscape improvements, signage, sustainable design, public art, and civic and cultural life.

Historic Downtown Los Angeles Design Guidelines

The purpose of the *Historic Downtown Los Angeles Design Guidelines* (2002) (HDLADG) is to aid downtown business improvement districts (BIDs), the Los Angeles Conservancy, government agencies, building owners, developers, and architects in implementing effective preservation and adaptive reuse projects that protect, highlight, and promote downtown's historic character. Based on the Secretary of the Interior's Standards for the Treatment of Historic Properties, the HDLADG apply to properties located along portions of Main, Spring, Broadway, and Hill Streets, loosely between 3rd Street on the north and 9th Street on the south. This district contains a significant concentration of historic office buildings, department store buildings, and the largest collection of movie palaces (i.e., early twentieth-century cinemas of elegant architectural design that emulated the theaters and opera houses of large European cities) anywhere in the United States—possibly anywhere in the world. It also contains a significant collection of buildings with architectural terra cotta cladding.

Although focused almost entirely on building design, retrofit, maintenance, appropriate building addition design and integration, and signage design, HDLADG guidance is premised on the eventual reintroduction of streetcars and/or trolley lines in the Historic Downtown neighborhood.

Broadway Streetscape Master Plan

The BSMP provides a vision for design improvements along Broadway, a menu of design tools and streetscapes, and other design criteria germane to design within individual street blocks. It presents eight overarching design principles intended to:

- Keep new streetscape elements simple, with clean lines and materials;
- Avoid historic recreations;
- Preserve views to key historic buildings;
- Promote clear pedestrian connections;
- Enhance the perception of public safety;
- Promote environmentally responsible design;
- Stimulate private investment; and
- Create a sense of timelessness through the use of flexible and/or modular construction premised on serving current and future needs.

The BSMP also prioritizes pedestrian and public transit circulation over the private auto. Under its provisions, street curb extensions, crosswalk and street paving, transit stop locations, and all signage (including wayfinding and informational signage) require review by the City Planning Department. Such approval was granted by the Planning Commission during early 2013. Under the BSMP, LADOT also reviews all street right-of-way changes to median strips, crosswalks, bus stop locations, directional and informational signage, bicycle facilities, and any changes to the standard LADOT menu of hardware, colors, and materials.

The BSMP calls for several additional major design interventions along Broadway that would be implemented separately from the Project. These include a reduction of automobile traffic lanes from four to two, installation of tree and understory landscaping, street furniture and kiosks, additional street lighting, paving, and wayfinding signage.

Although there are numerous non-historic replacement streetlight poles along Broadway, the surviving so-called "Broadway Rose" streetlight bases, while not considered historic elements, are considered worthy of retention as part of the streetscape proposed under the BSMP. These bases and historic terrazzo sidewalk installations, historic sidewalk vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers are itemized in the BSMP, and are considered character-defining historic fabric.

City of Los Angeles Tree Preservation Ordinance

City Ordinance number 177404 (2006), as amended, regulates the removal of Southern California native tree species commonly found in the City of Los Angeles when those trees measure four inches or more in cumulative diameter, or four and one - half feet above the ground level at the base of the tree. Protected tree species include: nearly all indigenous oak trees of the genus Quercus; Black Walnut (Juglans californica); California Sycamore (Platanus racemosa), and California Bay trees (Umbellularia californica). Removal or relocation of protected trees requires a permit from the Board of Public Works. Removal or relocation are defined as "any act that will cause a protected tree to die, including but not limited to acts that inflict damage upon the root system or other part of the tree by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the drip line area around the trunk." A protected tree report must be submitted to the Board of Public Works to apply for a tree removal permit.

City of Los Angeles Tree Preservation Policy

The City of Los Angeles Department of Recreation and Parks established the Tree Preservation Policy as a regulatory tool to provide additional protections to urban forest trees within parks beyond the protections regulated by the City of Los Angeles Tree Preservation Ordinance. In addition to the trees protected by the Tree Preservation Ordinance, the Tree Preservation Policy regulates protection of Heritage, Special Habitat Value, and Common Park trees. The definitions of each are included below:

- Heritage trees are individual trees of any size or species that are specifically designated as heritage because of their historical, commemorative, or horticultural significance. Before a Heritage tree is pruned, damaged, relocated, or removed, recommendations from Department of Recreation Parks staff arborists must be obtained. The Forestry Arborist makes a recommendation to the General Manager of Recreation and Parks for removal. The General Manager or designee must make the final approval before the tree(s) can be removed.
- Special Habitat Value trees include three of the tree species covered under the City of Los Angeles Tree Preservation Ordinance, including California Black Walnut (*Juglans californica*), California Sycamore (*Platanus racemosa*) and California Bay (*Umbellaria californica*), as well as other shrubs and trees, such as Toyon (*Heteromeles arbutifolia*), Hollyleaf Cherry (*Prunus ilicifolia*), Catalina Cherry (*Prunus lyonii*), Fremont Cottonwood (*Populus fremontii*), and at least four species of willow (*Salix sp.*). Before a Special Habitat Value tree is pruned, damaged, relocated, or removed, recommendations from Department of Recreation Parks staff arborists must be obtained. The Forestry Arborist makes a recommendation to the General Manager for removal. The General Manager or designee must make the final approval before the tree(s) can be removed.
- Common Park Trees provide aesthetic, sentimental, economical, and environmental value. Every tree in the city of Los Angeles' parks is recognized as a valuable asset and must be protected.
- Department of Public Works policy on trees and landscaping within the public right-of-way. Any mature trees removed would have to be replaced on a 2 for 1 basis.

Physical Setting

Overall Visual Character

As defined in the DDG, the Project alignment falls within, or borders, six contiguous design districts. These include Civic Center, Civic Center South, Bunker Hill, Historic Downtown, South Park, and Financial Core. In its alignment along Figueroa Street, between 11th Street and Olympic Boulevard, the Project also borders the Los Angeles Sports and Entertainment District (LASED)/Convention Center design district. Although office uses with ground-floor retail predominate, the setting is a densely developed urban area containing a range of land uses and building types and supports a growing residential population.

The Civic Center/Civic Center South are located in the northern part of downtown Los Angeles, bordering Bunker Hill, Little Tokyo, Chinatown, and the Historic Core of Downtown. The Civic Center and Civic Center South design districts extend south from the Hollywood Freeway (US-101) to a staggered boundary along 1st and 2nd Streets, terminating at Alameda Street on the east and the Harbor Freeway (I-110) on the west. These districts have a large concentration of government employees and are home to Union Station, Walt Disney Concert Hall, the Dorothy Chandler Pavilion, the Mark Taper Forum, and the Ahmanson Theater.

Bunker Hill is located in the northern and central parts of downtown Los Angeles, bounded by 1st Street to the north, Hill Street to the east, and the I-110 freeway to the west, sharing its southern border with the Financial Core. This area has music and art centers, office buildings and living spaces, and is home to the Bunker Hill Steps and Los Angeles Central Public Library.

The Financial Core, like Bunker Hill, is bounded on its west by the I-110 freeway and shares central Downtown with the Center City/Historic Core. This area is the corporate center for downtown Los Angeles and has skyscrapers, office buildings, hotels, banks, law firms, and real estate companies, amongst other related services.

South Park is bounded by the I-10 freeway to the south, Main Street to the east and shares its borders with the Financial Core and LASED/Convention Center. South Park, like the LASED/Convention Center districts, attracts visitors for sports and entertainment events, meeting facilities, conventions, and trade shows.

The DDG defines the Historic Downtown design district as being bounded by Hill Street on the west, 1st Street on the north, Los Angeles Street on the east, and 11th Street on the south. The streets of Historic downtown Los Angeles include two nationally registered historic districts: the Broadway Theater District, which includes the remnants of 12 theaters within 7 blocks, and the Old Spring Street Financial District. Several photographs are included as Appendices to help contextualize the analysis of Environmental Consequences presented in Chapter 3 and to give the reader a sense of the visual quality and character throughout the Project corridor.

In visual terms, 2nd Street east of Broadway serves as a clear demarcation line between the grouping of large-scaled federal, state, and local government office and civic buildings that occupy entire city blocks and feature landscaped grounds with park-like attributes—such as expanses of lawn, landscaped parterres (level space occupied by an ornamental arrangement of flower beds) and fountains to the north (e.g., County Administrative/Courts complex)—and more typical zero-front-setback office buildings with ground-floor retail uses on smaller, more typical urban commercial lots located to the south in Historic Downtown (Appendix A, Photos 2 and 3).

The cultural institutions comprising the Music Center—including Disney Concert Hall (to the south, across 1st Street)—are part of a large campus located between Grand Avenue and Hope Street (on the east and west, respectively) and Temple and 2nd Streets (on the north and south, respectively). This civic cultural complex includes four theaters/auditoriums housing theatrical, concert, and opera productions; restaurants; and a partially below-ground parking garage. Adjoining Disney Hall on the south, between 2nd and 3rd Streets on Grand Avenue, and within the Bunker Hill design district, are the Colburn School of Performing Arts, Museum of Contemporary Art (MOCA), the Broad (a new, public museum of contemporary art), and high-rise apartment buildings (Appendix A, Photo 1).

Along Broadway and portions of Hill Street, large department store and retail uses housed in early twentieth-century buildings, as well as historic movie theaters, are the dominant uses, with newer but intermittent residential uses occurring above the ground-floor levels (Appendix A, Photos 4 through 6). Along 7th and Figueroa Streets, large office buildings are dominant, with ground-floor restaurants and retail uses (Appendix A, Photos 9 through 12). Large retail centers and hotels occur on 7th Street at Figueroa (FIGat7th; Wilshire Grand Redevelopment Project), and at 7th and Flower Streets (The Bloc). By contrast, along 11th Street, in the South Park design district there is a blend of light industrial, office, and loft residential uses housed in a range of contemporary and early-twentieth century buildings ranging in height from low-rise (1- and 3-story) to tall (10-story or more), with large surface parking lots occasionally separating the uses (Appendix A, Photo 7).

The Central City Community Plan classifies a majority of the land within the Project alignment as commercial; significantly smaller portions of the land area are designated for residential multiple family and public facilities uses.

Land Forms

In topographic terms, downtown occurs on an alluvial outwash of the main channel of the Los Angeles River in the northeastern portion of the Los Angeles Basin. It is also defined by the Elysian Hills on the western and northwestern edges of downtown. One prominent feature associated with the Elysian Hills is Bunker Hill—an area that loosely extends east from the Harbor Freeway to Hill Street, north of 5th Street. Due to its geomorphology as an alluvial outwash, as well as the presence of the Elysian Hills and Bunker Hill, the topography within the Civic Center slopes downward in a southeasterly direction towards the Los Angeles River and Interstate 10. From its highest elevation adjoining Temple Street and Grand Avenue, at 391 feet above mean sea level (msl), the terrain drops approximately 50 feet between Grand Avenue and Spring/Temple Streets to 339 feet above msl. East of Los Angeles Street, and extending south to Broadway and 5th Street, the terrain appears to be essentially flat to casual observers, at approximately 260 to 267 feet above msl.

Broadway Theatre and Commercial Historic District

A portion of Broadway, loosely bounded by 3rd Street on the north and 9th Street on the south, is listed on the National Register of Historic Places (NRHP) as part of the Broadway Theatre and Commercial Historic District. The historic district, which includes properties on both the east and west sides of the street, was listed on the NRHP in 1979, with a subsequent boundary expansion in 2001. It comprises some 60 contributing and 38 non-contributing resources, as well as non-building objects, such as surviving sidewalk elements (e.g., terrazzo in front of some theaters and store fronts and sidewalk vault lights) (Chattel Architecture, Planning and Preservation 2010:1).

In addition to the Broadway Theatre and Commercial Historic District, there are numerous other properties within Historic Downtown and elsewhere within downtown, which have been deemed eligible for, or that have been listed, on the California Register of Historical Resources (CRHR) and/or the NRHP, both individually and as part of historic district groupings. Other properties also have received official historic landmark recognition as City of Los Angeles Historic-Cultural Monuments (HCMs). Because historic resources are often visual resources for the purposes of CEQA and NEPA, those properties, as well as other character-defining, non-building features within the historic district, such as terrazzo sidewalk displays and the bases of historic streetlights, should be considered visual resources. Among the more architecturally noteworthy historic resources adjoining the Project alignment outside the Broadway Theatre and Commercial Historic District are the Herald-Examiner Building (1111 South Broadway), the Fine Arts Building (811 West 7th Street), the Music Center (135 North Grand Avenue), and the County Hall of Administration and Stanley Mosk Courthouse campus (1st to Temple Streets, between Hill Street and Grand Avenue).

Figueroa Corridor Streetscape Project

The Figueroa Corridor Streetscape Project calls for a series of design elements along Figueroa, extending between Martin Luther King Jr. Boulevard and West 7th Street and along 11th Street between Figueroa and Broadway. Goals include providing infrastructure to support new housing development; implementing the City of Los Angeles 2010 Bicycle Master Plan; creating a distinctive paving and landscape palette along Figueroa and West 11th Streets; clearer marking of and design enhancement of public transit stops; establishing landscaped medians; planting new sidewalk trees; creating park-like environments at event destinations, such as LASED; adding sidewalk lighting; and providing unique public art opportunities (often at public transit stops).

Specific design interventions include creating protected bike lanes (separated from vehicle traffic by curbs) connected to local bikeways along Martin Luther King Jr. Boulevard, Jefferson Boulevard, and 11th and 7th Streets; reducing vehicle traffic lanes from six to four, and retaining existing curbs, gutters, and most sidewalks along Figueroa Street; and installing retrofitted LED streetlights. Bikeway improvements along 7th Street that will be implemented as part of the City of Los Angeles 2010 Bicycle Master Plan will interface with, and supplement, the bikeway components proposed as part of the Figueroa Corridor Streetscape Project.

.

Chapter 3
Environmental Consequences

Assessment Methodology

The process used for the analysis presented in this section generally follows the guidelines outlined in the *Visual Impact Assessment for Highway Projects* (FHWA 1988), which are considered an industry standard for evaluating the visual implications of highway, railroad, and a wide range of non-transportation–related projects. As mentioned, the general methodological approach involves identifying visual resources in the Project area, measuring the amount of change that would occur as a result of the Project, and predicting how the affected public would respond to or perceive those changes. Visual resources of the Project setting are defined and identified by assessing the visual character and visual quality throughout the Project corridor. Resource change is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the Project corridor before and after the construction of the proposed Project. The resource change assessment incorporates the anticipated viewer response, based on the potentially affected viewer groups and their relative exposure and sensitivity.

The basic components of the FHWA methodology are as follows:

- Define the project setting and viewshed;
- Identify key views for visual assessment;
- Assess existing visual resources and viewer response;
- Depict the visual appearance of project alternatives;
- Assess changes to visual resources and predict viewer response to those changes;
- Assess the visual impacts of project alternatives; and
- Propose methods to mitigate adverse visual impacts.

Consistent with FHWA guidance, the following steps have been taken:

- The visual environment and existing landscape characteristics within the Project alignment have been defined and documented. The visual environment has been evaluated for both the existing condition and the future planned condition.
- Applicable planning documents (e.g., general plans, planning and zoning codes, etc.) have been reviewed for pertinent policy and guidance information.
- Major viewer groups have been identified, and anticipated viewer responses have been documented.
- Typical views for the visual assessment have been identified, based on the actual and anticipated responses of representative viewers.
- Review of the Project description and conceptual design plans took place, and the type and degree of visual changes expected to result in the visual resources study area have been documented.
- Design recommendations for specific Project features and locations were reviewed to enhance the visual environment for stationary and transient viewers.
- Appropriate mitigation measures have been identified.

A number of variables affect the degree of visibility, visual contrast, and the ultimate impact of a project. Such variables include the scale and size of facilities, distances and viewing angles, color and texture, and the influences of adjacent scenery or land uses. Even where visible, viewer response and sensitivity vary depending on viewer attitudes and expectations. There is a range in the level of viewer sensitivity among motorists and commuters, and in adjacent cultural/recreational, commercial and office areas, and residential areas. The last group, residential viewers, is generally considered to have the highest potential for sensitivity, while the first several viewer groups generally possess low levels of sensitivity. It should be noted that viewer activities can either encourage a viewer to observe the surrounding area more closely (e.g., driving for pleasure) or discourage close observation (e.g., employees in work environments, drivers commuting in heavy traffic). All of these viewer elements are considered when evaluating expected viewer response.

Evaluative Framework

The analysis in this visual impact assessment has been shaped by both FHWA and CEQA guidelines, because the CEQA guidelines incorporate topics that are not explicitly referenced by NEPA or the FHWA guidelines. These include the introduction of substantial light or glare, and impacts on scenic vistas, historic buildings, and natural resources along scenic highways. The *City of Los Angeles CEQA Thresholds Guide* (2006) was also employed as part of the evaluative framework for this analysis. The *Thresholds Guide* identifies additional factors to consider when determining the significance of impacts with respect to aesthetics, including view obstruction, nighttime illumination, and shade and shadow impacts.

The FHWA guidelines' evaluative framework defines the visual setting in terms of landscape units and/or key views. The key view approach is often adopted for railroad and highway improvement projects proposed in a densely urbanized and developed setting. Due to the densely built-up character of the *viewshed* and the constrained sight lines from one portion of the study area to other portions, this assessment uses a key view approach in lieu of the landscape unit approach.

A *viewshed* comprises all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views from the Project and build alternatives. The viewshed also accounts for the locations of viewers likely to be affected by visual changes brought about by the Project.

Within the evaluative framework, changes in the quality and character of visual resources in the viewshed are assessed with respect to viewer response, as discussed in the following sections.

Quality and Character of Visual Resources

Visual Character

The *visual character* of a view is described by the topography, land uses, scale, form, and natural resources depicted in the view. The assessment of the visual character is intended to be descriptive rather than evaluative, and is based on defined attributes, such as physical traits—including form, color, line, and texture (pattern elements)—as well as pattern character traits—the dominance, scale, and diversity or continuity of visual elements.

Visual Quality

Visual quality refers to the aesthetics of a view. Determining the quality of a view can be subjective because it is based in part on the viewer's values and notions about what constitutes a quality setting. In an effort to establish a more objective framework, this assessment applies the evaluative criteria (i.e., vividness, intactness, and unity) and qualitative rankings (low, medium, and high) presented in the FHWA guidelines. This method should correlate with public judgments of visual quality well enough to predict those judgments. This approach to evaluating visual quality can also help identify specific methods for mitigating each adverse impact that may occur as a result of a project. The three criteria for evaluating visual quality can be defined as follows:

- *Vividness* is the visual power or memorability of landscape components as they combine in distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. It can be present in well-kept urban and rural landscapes, as well as in natural settings.
- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual human-made components in the landscape.

As a general rule, views of high quality are found to have topographic relief, a variety of vegetation, rich colors, impressive scenery, and unique natural and/or built features. In addition to their use as descriptors, vividness, unity, and intactness are used more objectively as part of a rating system to assess a landscape's visual quality. Visual quality is evaluated using the following equation, provided in the FHWA guidelines:

$$\text{Visual Quality} = \frac{\text{Vividness + Intactness + Unity}}{3}$$

Utilizing a rating scale from 0 through 7, with 0 representing very low visual quality and 7 representing very high visual quality, high visual quality is equivalent to visual quality rating numbers 5.5 through 7. In contrast with the descriptors of high visual quality described above, views of medium quality may have interesting but minor landforms, some variety in vegetation and color, and/or moderate scenery (equivalent to visual quality rating numbers 3.5 through 5.4). Views of low quality have uninteresting features, little variety in vegetation and color, uninteresting scenery, and/or common elements (equivalent to visual quality rating numbers 0 through 3.4).

Viewer Response

Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how the public might react to visual changes brought about by a development project.

Viewer exposure is typically assessed by measuring the number of viewers exposed to the resource change, type of viewer activity, duration of their view, speed at which the viewer moves, and position of the viewer. High viewer exposure heightens the importance of early consideration of design, art, and architecture and their roles in managing the visual resource effects of a project. Because objects in the foreground have more detail, views from nearby locations are more detailed compared to objects that are indistinguishable in the distance. Viewers would experience visibility of a proposed project to varying degrees in a particular viewshed, depending on distance or other intervening structures or obstacles.

Viewer sensitivity is defined both as the viewer's concern for scenic quality and the viewer's response to change in the visual resources that make up the view. Local values and goals may confer visual significance on landscape components and areas that would otherwise appear unexceptional in a visual resource analysis. The sensitivity of viewers in their perception of visual quality, as well as their sensitivity to changes in visual quality, varies based on familiarity with the view, as well as their sense of ownership of the view, and the nature of their activity while receiving the view. In turn, these considerations determine how much attention the receptor focuses on the view.

Residential viewers typically have a high sensitivity to visual quality and changes in visual quality because of their familiarity with the view over a period of time, investment in the area, and sense of ownership of the view. In a way, the view from residences represents a visual extension of residents' property, and noticeable changes in this view can result in strong positive or negative reactions. Other viewers, with exceptions, usually have a low or average sensitivity to visual quality or change. These include people on the local roadway system, such as commuting motorists and pedestrians. If they are traveling simply to get from one place to another for work reasons or while doing errands, their sensitivity would normally be average. However, when motorists are traveling for pleasure, it is likely that they would be somewhat more sensitive to their surroundings. The level of sensitivity increases based upon the level of familiarity the person has with the visual setting and the viewer's concern for scenic quality (e.g., downtown residents who regularly walk downtown).

Key Views

Because it is not feasible to analyze all the potential views of the Project, it is necessary to select a number of key viewpoints that would most clearly display the visual effects of the Project at representative locations along its alignment. Key views also represent the primary viewer groups that would potentially be affected by the Project.

For purposes of this analysis, a view is considered key if at least one of the following circumstances applies:

- Visual resources are present, regardless of the quality of the view. The sensitivity of the affected viewer group is moderate or high, and the duration of the view is long-term.
- The quality of the view is moderate or high, regardless of whether visual resources are present. The sensitivity of the viewer group is moderate or high, and the duration of the view is long-term.
- The view is distinct, clear, and unobstructed from the street to adjacent businesses and is viewed regularly by a large number of commuters. In this case, the viewer sensitivity is moderate, and the view is long-term.

Key observation points (KOPs) identify key views that document the visual character and quality of the corridor in highly representative ways, or from the perspective of sensitive viewers (e.g., residents). The analysis identified seven such specific views that could be altered to some degree by the Project.

These KOPs document key views at the following vantages:

- KOP 1: Grand Avenue, near 2nd Street, looking north to 1st Street. Iconic Disney Concert Hall is in the foreground of the view on the left. The view documents the streetcar terminus adjoining key downtown cultural institutions, including the Music Center, Disney Hall, Colburn School of Performing Arts, MOCA, and the Broad.
- KOP 2: Broadway between 5th and 6th Streets, looking north, documents a representative section of this heavily traveled retail shopping street framed by historic commercial buildings and a noteworthy collection of historic movie theaters. Broadway draws large numbers of pedestrians.
- KOP 3: Figueroa Street, looking north to Olympic Boulevard, documents the streetscape adjoining the LASED and defined north of Olympic Boulevard by highly varied architectural design. Figueroa Street is a highly trafficked thoroughfare and is familiar to many LASED and downtown visitors and commuting motorists.
- KOP 4: West 7th Street at Flower Street, looking east, documents a representative section of the street framed by historic commercial buildings of comparable height that form a strongly defined streetwall. West 7th Street marks the southern boundary of the Financial District and is a major transit transfer location for Metro trains and buses, as well as DASH. It features large numbers of pedestrians.
- KOP 5: Hill Street at 6th Street, looking north. Pershing Square, a well-known downtown visual landmark, appears as a vivid visual element at middle ground, framed by tall buildings of highly varied design.
- KOP 6: West 11th Street at Broadway, looking west. The Herald-Examiner Building, which is an architectural and historic landmark, appears in the foreground portion of the view on the left.
- KOP 7: West 11th Street between Hope and Flower Streets, looking west. The view documents the dense cluster of high-rise residential development that exists along this segment of 11th Street east of the LASED.

Appendix A includes 14 photos used in this assessment to document the visual setting. The photos in Appendix A show representative views along the Project corridor by the location and direction of view, and supplement the seven KOP photos in this chapter.

Table 1 presents the visual quality ratings at the seven KOPs.

Table 1. Existing Visual Quality at Key Observation Points along the Project Alignment Using the FHWA Evaluation Criteria of Vividness, Intactness, and Unity

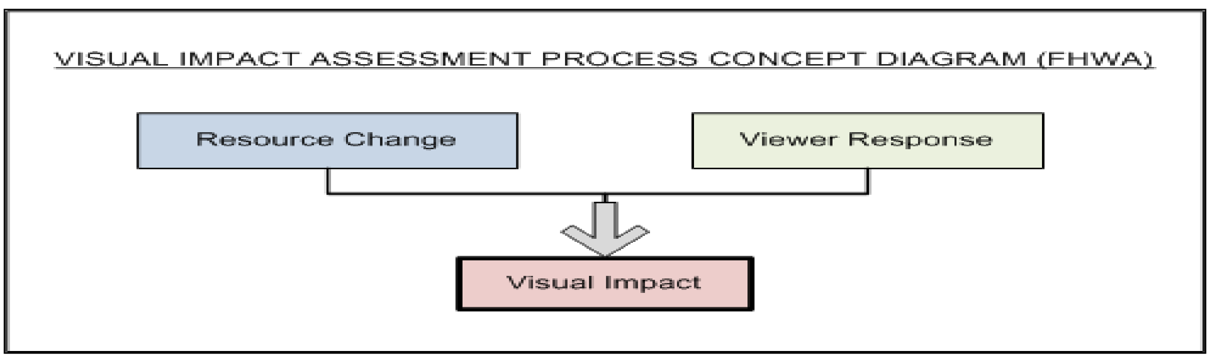
Key Observation Points	Vividness	Intactness	Unity	Average (V+I+U/3)	Visual Quality Rating
KOP 1	7	5	4	5.3	Moderately High
KOP 2	5	4	5	4.7	Moderately High
KOP 3	5	4	3	4.0	Moderate
KOP 4	5	5	5	5.0	Moderately High
KOP 5	5	4	3	4.0	Moderate
KOP 6	5	4	3	4.0	Moderate
KOP 7	5	5	3	4.3	Moderate

Impacts are characterized by their potential levels of significance. Generally, a reduction in the visual quality ratings from one degree of significance to another is considered a significant visual impact.

- *Low*—Minor adverse change to the existing visual resource, with low viewer response to change in the visual environment. Unlikely to require mitigation.
- *Moderate-Low*—Minor adverse change to the existing visual resource, with low viewer response to change in the visual environment. May or may not require mitigation.
- *Moderate*—Moderate adverse change to the visual resource with moderate viewer response. Impact can be mitigated within 5 years using conventional practices.
- *Moderate-High*—Moderate adverse visual resource change with high viewer response or high adverse visual resource change with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than 5 years to mitigate.
- *High*—High level of adverse change to the resource or a high level of viewer response to visual change such that architectural design and landscape treatment cannot mitigate the impacts. Viewer response level is high. An alternative Project design may be required to avoid highly adverse impacts.

Viewer sensitivity or concern is based on the visibility of resources in the landscape, the proximity of viewers to the visual resource, the relative elevation of viewers to the visual resource, the frequency and duration of views, the number of viewers, and the types and expectations of individuals and viewer groups (Figure 3).

Figure 3. Visual Impact Assessment Process (per FHWA Guidance)



Source: California Department of Transportation Landscape Architecture Division 2015.

Table 2 provides a reference for determining levels of visual impact by combining resource change and viewer response.

Table 2. Visual Impact Ratings Using Viewer Response and Resource Change (per FHWA Guidance)

	Viewer Response (VR)				
Resource Change (RC)	**Low (L)**	**Moderate-Low (ML)**	**Moderate (M)**	**Moderate-High (MH)**	**High (H)**
Low (L)	L	ML	ML	M	M
Moderate-Low (ML)	ML	ML	M	M	MH
Moderate (M)	ML	M	M	MH	MH
Moderate-High (MH)	M	M	MH	MH	H
High (H)	M	MH	MH	H	H

Source: California Department of Transportation Landscape Architecture Division 2015.

The criteria for identifying the importance of views are related in part to the position of the viewer relative to the resource. An area of the landscape that is visible from a particular location (e.g., views to a park or a visual landmark) or series of points (e.g., views along a street) is defined as a *viewshed*. To identify the importance of views of a resource, a viewshed may be broken into distance zones of foreground, middle ground, and backdrop. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Although distance zones in viewsheds may vary among different geographic regions or types of terrain, a commonly used set of criteria developed by the U.S. Department of Agriculture Forest Service (1995) identifies the foreground distance zones as being within the first 0.25 to 0.5 mile from the viewer. However, within downtown Los Angeles, views are often highly constrained by densely placed tall buildings. In order to more appropriately define the distance zones, foreground distances are defined as being within 500 feet from the viewer, with the middle ground zone extending from the foreground zone to 0.5 mile from the viewer. The backdrop zone is defined as extending from the middle ground zone to the limits of sightlines. Within the densely developed context of downtown, sightlines typically extend 1.0 mile. Beyond that distance, most human-made design features, as well as mature trees, become indistinct in visual terms, and only especially large, tall buildings and landforms such as the local hills and mountains can be clearly seen.

Visual sensitivity also depends on the number and type of viewers and the frequency and duration of views. Generally, visual sensitivity increases with an increase in total number of viewers, frequency of viewing (e.g., daily or seasonally), and duration of views (i.e., how long a scene is viewed). Also, visual sensitivity is higher for views seen by people driving for pleasure (e.g., sightseers); people engaging in recreational activities such as running, biking, or walking; and homeowners (see Table 3).

Table 3. Viewer Sensitivity and View Duration at All Key Observation Points along the Project Alignment Using the FHWA Evaluation Criteria

Viewing Group	Viewer Sensitivity	View Duration
Commuting Motorists	Low	Short-term
Motorists Driving for Pleasure/Sightseers	Moderate	Long-term
Businesses/Workplace Employees	Moderate	Long-term
Pedestrians	Moderate to High	Long-term
Residents	High	Long-term

Thresholds of Significance

This section lists the thresholds used to conclude whether an impact has the potential to be substantial. Because evaluating visual impacts is inherently subjective, federal and professional standards of visual assessment methodology have been used to determine potential impacts on aesthetic values of the study area.

Determining Significance under NEPA

NEPA criteria for determining significance are listed in Code of Federal Regulations Title 40, Section 1508.27, but are considered broader and less stringent than CEQA criteria, described below. Furthermore, the CEQA criteria incorporate NEPA standards. For these reasons, identification of impacts as significant under CEQA is treated herein as sufficient for identifying effects considered substantial under NEPA. Mitigation measures set forth to minimize CEQA significant impacts are presumed also to mitigate adverse effects under NEPA. These assumptions are made only for the purpose of identifying the magnitude of particular impacts.

Determining Significance under City of Los Angeles Guidelines

The *City of Los Angeles CEQA Thresholds Guide* (2006) identifies the following factors to consider when determining the significance of impacts under CEQA with respect to aesthetics, view obstruction, shading, and nighttime illumination:

1. The amount or relative proportion of existing features or elements that substantially contribute to the valued visual character or image of a neighborhood, community, or localized area, which would be removed, altered, or demolished.
2. The amount of natural open space to be graded or developed.
3. The degree to which proposed structures in natural open space areas would be effectively integrated into the aesthetics of the site, through appropriate design, etc.
4. The degree of contrast between proposed features and existing features that represent the area's valued aesthetic image.
5. The degree to which a proposed zone change would result in buildings that would detract from the existing style or image of the area due to density, height, bulk, setbacks, signage, or other physical elements.
6. The degree to which the project would contribute to the area's aesthetic value.
7. Applicable guidelines and regulations.
8. The nature and quality of recognized or valued views (such as natural topography, settings, human-made or natural features of visual interest, and resources such as mountains or the ocean).
9. Whether the project affects views from a designated scenic highway, corridor, or parkway.
10. The extent of obstruction (e.g., total blockage, partial interruption, or minor diminishment).
11. The extent to which the project affects recognized views available from a length of a public roadway, bike path, or trail, as opposed to a single, fixed vantage point.

12. The change in ambient illumination levels as a result of project sources.
13. The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.
14. Whether shadow-sensitive uses would be shaded by project-related structures for more than 3 hours between 9 a.m. and 3 p.m. Pacific Standard Time (between late October and early April), or for more than 4 hours between 9 a.m. and 5 p.m. Pacific Daylight Time (between early April and late October).

Construction-Period Effects

No Project Alternative (Alternative 1)

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no construction-period effects would occur under this alternative.

7th Street with a Grand Avenue Extension (Alternative 2)

Under Alternative 2, construction of the Project would be expected to occur over a 24-month period. Construction would occur in a manner that would help to maintain circulation along affected roadways as much as possible, and construction activities may partially overlap during the course of the 24-month overall construction period. All Project engineering and construction would be completed in conformance with applicable City, state, and federal regulations and standards, including, but not limited to, the Los Angeles Municipal Code Noise Ordinance Section 112.05, *LADOT Traffic Control Handbook and Traffic Manual*, California Public Utilities Commission Regulations, California Building Code, American Railway Engineering and Maintenance of Way Association Standards, and national stormwater pollution discharge regulations.

Construction-period effects/impacts would include below-ground utility relocation and protection activities along Project alignment streets, as well as related trenching, possible soil remediation, and the installation of barricading and street circulation-related detours. In order to avoid the complete shutdown of traffic, or the constriction of traffic along substantial portions of the corridor at one time, these activities would occur either sequentially or on a leap-frog basis. Additionally, as a result of project construction, some mature trees, as well as younger trees (with trunk diameters of 5 inches or less) may have the potential to be trimmed or removed. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. Replacement trees would be placed as near their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The removal of trees may slightly alter the visual character along the proposed alignment. The project's compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy would ensure that any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term, significant effects/impacts related to trees are expected.

Construction-period effects/impacts also would include excavation in Project alignment streets, the installation of new drainage systems, the pouring of concrete for station platforms, and the installation of new sidewalk paving where curbs are proposed for extension, as well as paving to match existing road surfaces. These activities would necessitate the narrowing or closing of segments of alignment streets. Intersection construction associated with this component of the construction process would potentially take place during either daytime or nighttime hours.

If construction occurs during nighttime hours, in addition to reducing traffic impacts, nighttime construction would also typically serve to further minimize visual effects because potentially far fewer visually sensitive viewers, such as pedestrians who are shopping or visiting downtown for business purposes, would be present along some portions of the alignment. In other segments of the alignment adjoining residential uses, views of visual resources would typically be accessible but far less discernible to sensitive viewing groups at night, because the dark reduces the ability of the human eye to capture much of the detail found in outdoor objects. With the exception of nighttime skyline views across the downtown—views that draw their power from nighttime lighting against dark silhouetted buildings—most ordinary views that can be acquired during daylight hours would be far less detailed and vivid at nighttime. Thus, construction activities undertaken during the evening hours, and on a temporary basis, featuring limited lighting that is directed on site and shielded from adjoining properties, are expected to be less than significant in the way they potentially affect visual resources (e.g., views of architectural or historical resources). Notwithstanding, in those areas where nighttime entertainment venues are clustered, such as along portions of Broadway and Figueroa Street adjoining the LASED, temporary visual impacts during the construction period could be greater at night as a result of the Project.

Station platform construction would take place at more than one point during the construction period. In order to minimize the effect/impact, construction would occur on either a leap-frog or sequential basis to avoid closing large segments of affected streets in the alignment simultaneously.

Construction may occur during daytime or nighttime hours. In general, Project construction activities would typically take place between the hours of 7 a.m. and 9 p.m. in accordance with LAMC 41.40(a). In addition, to expedite construction activities and reduce the duration of associated potential impacts, certain construction activities may occur during peak hours in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406. In addition, construction activities may occur during nighttime, weekends, and holidays with the approval of the City's Police Commission.

The OCS, TPSS, streetcar control and communication systems, related traffic signal improvements, ventilation testing activities, and OCS pole installation would occur during the construction period. Installation and testing of the wiring for TPSS buildings and communication systems would also continue. Construction of these elements would generally take place during non-peak hours to minimize the effect/impact.

Further testing of streetcar operational systems and training streetcar system personnel would occur as the Project nears completion. With a focus on training and the testing of systems already in place, such activities would result in negligible effects/impacts on visual resources.

Related logistical support activities would include establishing a staging area for the laydown and storage of construction materials—including concrete forms, pipes, pipe accessories, concrete vaults, manholes, and station furnishings—and for overnight parking of construction equipment. Such staging areas would range in size and would be located adjacent to other compatible industrial or commercial land uses or on large surface parking lots to the extent practicable. Potential locations under consideration include between Grand Avenue and Olive Street between 8th and 9th Streets (a large surface parking lot), and between Grand Avenue and Olive Street between 12th and 11th Streets (a large surface parking lot with some adjacent light industrial uses as well as nearby residential uses). Actual laydown area locations will be determined prior to initiating construction.

The active construction areas are primarily within street rights-of-way and would have construction signs and barricades to delineate the work zone.

In order to minimize views of stockpiled materials and idle construction equipment at the MSF and in staging areas, and to reduce visual clutter and disorder, Project construction staging areas would be enclosed or screened from view at the street level with appropriate screening materials. The contractor would provide daily visual inspections to ensure the immediate surroundings of construction staging areas are free from construction-related clutter and to maintain the areas in a clean and orderly manner throughout the construction period.

Utility relocation and protection would likely be one of the first work tasks to be performed on the Project. To the extent possible, the Project's streetcar trackway would be located to avoid or minimize conflict with existing utilities. In certain cases, however, existing utilities would be relocated, modified, or protected in place, including, but not limited to, storm drains, sanitary sewers, water and power lines, gas pipelines, electrical duct banks, lighting cables, fiber optic cables, telephone cable lines, and underground conduits for traffic signals and roadway lighting. Once utility relocations and/or protection have been completed within a segment, trackwork would commence.

Track construction within the existing street would call for the use of embedded track. Trackway construction would include the demolition of the roadway section to accommodate the guideway, preparation of the track bed, construction of the supporting track slab, and the laying of rails. In most areas, the sub-grade would be prepared and graded. If rebar is designed into the track slab, it would be installed once the grade is prepared. Rail would then be pulled into place and set to final grade on steel ties and plates. Once the rail is established, concrete would be poured around the rail and rebar to form the concrete trackway.

Establishment of the staging area, utility relocation, and track construction activities would be of temporary duration and would be governed by City, state, and federal regulations and standards designed to minimize their potential to affect adjacent sensitive uses in significantly adverse ways.

7th Street without a Grand Avenue Extension (Alternative 3)

Under Alternative 3, projected related construction-period effects would be similar to those outlined above under Alternative 2. Since Alternative 3 does not include the proposed Grand Avenue extension, disruptions to visual resources would be reduced slightly as this alternative does not include construction activities south of 1st Street along Grand Avenue (between 1st and 2nd Street[s]) or west of Hill Street along 1st Street.

9th Street with a Grand Avenue Extension (Alternative 4)

Under Alternative 4, the same construction-period actions would occur as under Alternative 2, with the alignment including a 9th Street route segment in lieu of a route along 7th Street. The actions would occur over the same overall 24-month construction period, with similar overlapping construction-related actions, and would primarily call for work at and below street level, with little potential to disrupt views of visual resources. Work in the affected streets would take place either sequentially or on a leap-frog basis, and would occur during either daytime or nighttime hours. In addition, some construction activities may occur during nighttime, weekends, and holidays with the approval of the City's Police Commission to both expedite the construction process and to help minimize the effect/impact.

Due to the presence of fewer early twentieth-century buildings along the 9th Street alignment, the porous streetwall, and the presence of large surface parking lots, the potential for temporary minor disruptions of sight lines to visual resources would be reduced slightly compared to Alternatives 2 and 3. To ensure that the Project features are built with sensitivity to the visual environment, Alternative 4 would employ the same avoidance, minimization, and/or mitigation measures as are proposed under Alternative 2.

9th Street without a Grand Avenue Extension (Alternative 5)

Under Alternative 5, projected related construction-period effects would be similar to those outlined above under Alternative 4. Since Alternative 5 does not include the proposed Grand Avenue extension, disruptions to visual resources would be reduced slightly as this alternative does not include construction activities south of 1st Street along Grand Avenue (between 1st and 2nd Street[s]) or west of Hill Street along 1st Street.

Traction Power Substations

As mentioned, the proposed streetcar would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. Each would be placed at a parking lot, placing structures on private property outside the public right-of-way (except for one). As with the other proposed Project elements, in order to avoid the constriction of traffic along substantial portions of the corridor at one time, construction activities would occur either sequentially or on a leap-frog basis. In general, Project construction activities would typically take place between the hours of 7 a.m. and 9 p.m., with the potential for nighttime construction. Project construction staging areas would be enclosed or screened from view at the street level with appropriate screening materials, to the extent practicable.

Substations could be prefabricated in metal boxes or built in place in a small building. The substations would be relatively small in size and given an architectural design treatment that would be compatible with adjacent architecturally/historically significant buildings. Through adherence to pertinent downtown design guidelines and the proposed avoidance, minimization, and/or mitigation measures, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, given the relative size of the TPSS units, their proposed location(s), and the temporary nature of construction activities, construction-period effects/impacts associated with the TPSS would be less than significant.

Maintenance and Storage Facilities

Construction of a maintenance and storage facility would require the establishment of a staging area and other construction activities that would be of temporary duration and would be governed by City, state, and federal regulations and standards designed to minimize their potential to affect adjacent sensitive uses in significantly adverse ways, such as the enclosure and/or screening of Project construction staging areas. Construction of the MSF may involve a greater level of disruption on a temporary basis than the tracks or platforms for streetcar stops (e.g., excavation; soil remediation, if necessary; street closures; construction staging areas; traffic control; utility issues), though it would be designed to fit into and complement the surrounding buildings and neighborhood. Larger scale expressions of public works activities have commonly occurred along downtown streets over the years and are expected to be a part of the related downtown improvement projects, including the Figueroa Corridor Streetscape Project and BSMP.

Though temporary visual disruptions are expected, contractors would use best management practices to further reduce and/or avoid significant aesthetics impacts during construction. Construction contractors would use appropriate screening (i.e. temporary fencing with opaque materials) to buffer views of construction equipment as well as materials and soil in construction staging areas. Site managers would conduct regular site inspections to ensure that staging areas are clean and orderly, to the extent practicable, and that construction debris is removed from public rights of way and adjacent properties/roadways. In compliance with the Los Angeles Municipal Code, any graffiti would be removed from the construction site and staging areas within 24 hours, where possible. Through the implementation of best management practices associated with general construction and adherence to pertinent downtown design guidelines (such as the Historic Downtown Los Angeles Guidelines and Downtown Design Guide and other applicable regulations, including but not limited to, the Los Angeles Municipal Code, *LADOT Traffic Control Handbook and Traffic Manual* and California Building Code) to ensure the proposed project elements would conform to their unique visual environments, adverse construction-period effects/impacts on visual resources would be avoided or substantially minimized. Moreover, since temporary changes to views as a result of construction-period activities are not considered adverse/significant, effects/impacts on visual resources as a result of construction would not be adverse/significant.

Operational-Period Effects

Visual Effect/Impact at KOP 1: Grand Avenue at 2nd Street

Existing Condition

The streetwall, which refers to one of the long side boundaries of a street formed by its buildings, hedges, and other visual elements, is porous at this key view and is characterized by architecturally distinguished buildings that are spatially separate from one another, as well as a blend of vertical and horizontal line elements (see Figure 4). The view is vivid due to the varied architectural expression and contrasting vertical, horizontal, and curvilinear line elements. Due to its highly animated, sculptural form, Disney Concert Hall is the key visual resource in the view, with the County Hall of Administration and Stanley Mosk Courthouse campus and the Music Center forming architectural backdrop elements in the middle ground portion of the view. Directly across Grand Avenue to the south is a large parking structure on sloping terrain. The change in topography, along with continuous screening fencing (along Grand Avenue) planted with vines, serves to obscure views of this structure along Grand Avenue.

The view is also relatively free of obtrusive elements, such as business signage and clutter on building façades; traffic signage and signal equipment also is minimally evident. The roadway and sidewalk paving are dominant in the view, in terms of line, color, and texture, and add a strong element of unity. Off-white coloration seen on middle ground buildings, the silver color of Disney Concert Hall, and the gray color of the road pavement and sidewalks are dominant, and, along with street trees and other landscape elements outside the public right-of-way, further unify the view.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

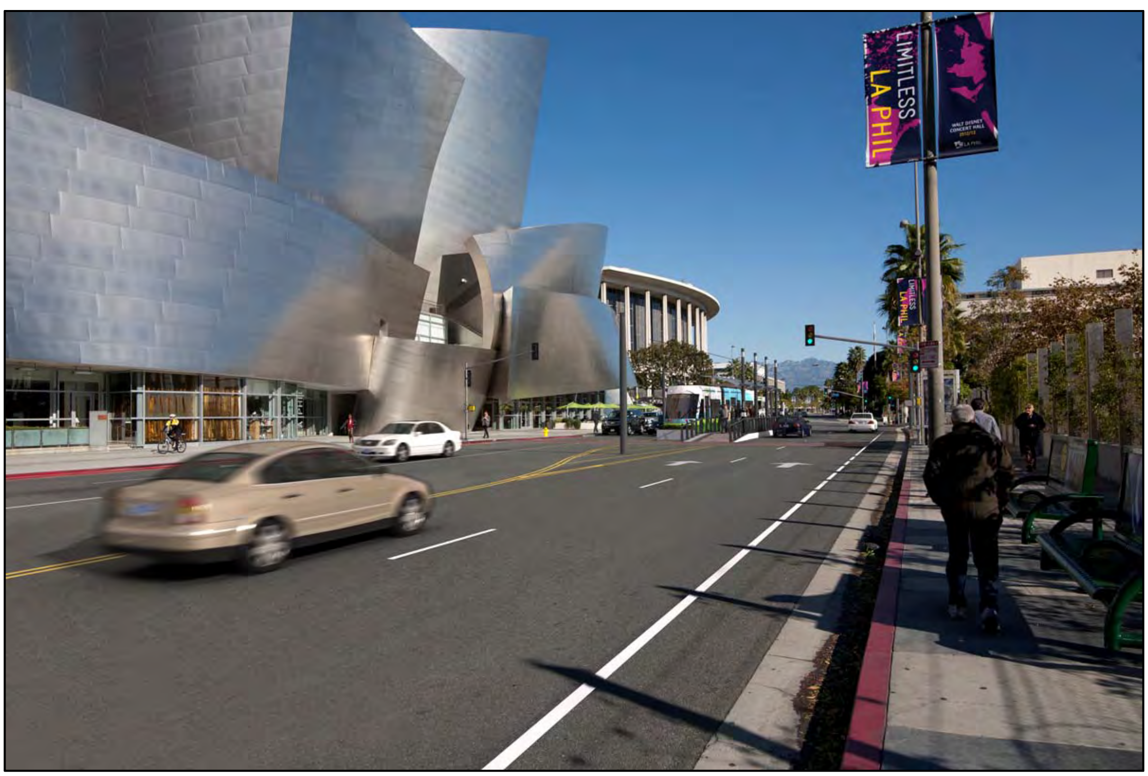
7th Street with a Grand Avenue Extension (Alternative 2)

Resource Change under the Project

As is shown in Figures 4 and 4A, installation of tracks and new paving along the track path, construction of a concrete station platform in the center of Grand Avenue, with metal railings and platform light standards and signage, as well as the OCS system, read as extensions of current public transit features such as bus stops and would be minimally noticeable. A more noticeable element

Figure 4 (KOP 1). View along Grand Avenue at 2nd Street, Looking North

Figure 4A (KOP 1). Simulated View along Grand Avenue, North of 2nd Street



would be a concrete plinth, or possibly a concrete planter, that is likely to be placed at the end of the track to prevent trains from accidentally running off the end of the track. The exact design of such a feature, however, is as yet undetermined. Furthermore, trees have the potential to be removed along the project alignment. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected.

OCS electrical wiring would include several components. Consistent with other segments of the alignment, there are two potential configurations for the OCS wires. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. As discussed in Chapter 2, OCS poles would be approximately 25 to 30 feet tall and are typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way. Unique to this location as the streetcar terminus, a high-tension contact wire with a down-guy, or some form of diagonal termination—along with support poles—would be installed.

Tables 4 through 6 document the changes in visual quality under the Project.

Viewer Response

The Project does not include development of natural open space and would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its features would be at, or slightly above, street level, and they are not opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar-related platforms and platform shelters would not be of sufficient scale or bulk that they would cast shadows of sufficient size to affect shade-sensitive uses. Nor would these features significantly alter ambient illumination levels or result in spill light impacts on surrounding uses. The streetcar trains would be lighted in a manner that would minimize the potential for spill light effects and would not generate more nighttime light on the streets than existing downtown buses generate.

The Project would occur within the viewshed of Disney Concert Hall. Although no officially recognized scenic views occur in this setting, views of the building are considered important due to its design quality. Notwithstanding placement of the station stop adjacent to the iconic Disney Concert Hall, because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit system, visual quality would remain moderate, and viewer response is expected to be minimal.

7th Street without a Grand Avenue Extension (Alternative 3)

Resource Change under the Project

Under Alternative 3, the Grand Avenue Extension is not included as a part of the proposed Project alignment. Therefore, under this alterative, proposed changes associated with the Project would not occur within KOP 1. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, under this alterative, proposed changes associated with the Project would not occur within KOP 1. As a result, no new visual elements would be introduced and no viewer response would occur.

Table 4. Average Visual Quality at Key Observation Points [by Project Alternative/Element]

Key Observation Point	Vivid-ness	Intact-ness	Unity	Existing Average (from Table 1)	Average Under Proposed Conditions (V+I+U/3)									
					Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	TPSS	MSF A	MSF B	MSF C	MSF D
KOP 1	7	5	4	5.3	5.3	5.0	5.3	5.0	5.3	5.3	5.3	5.3	5.3	5.3
KOP 2	5	4	5	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
KOP 3	5	4	3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
KOP 4	5	5	5	5.0	5.0	4.7	4.7	4.7	4.7	5.0	5.0	5.0	5.0	5.0
KOP 5	5	4	3	4.0	4.0	3.7	3.7	3.7	3.7	4.0	4.0	4.0	4.0	4.0
KOP 6	5	3	4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
KOP 7	5	4	4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3

Source: ICF International, 2015.

Table 5. Change from Existing Conditions at Key Observation Points [by Project Alternative/Element]

Key Observation Point	Change from Existing Conditions									
	Alt. 1	Alt. 2	Alt 3.	Alt. 4	Alt. 5	TPSS	MSF A	MSF B	MSF C	MSF D
KOP 1	0.0	-0.3	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
KOP 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KOP 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KOP 4	0.0	-0.3	-0.3	-0.3	-0.3	0.0	0.0	0.0	0.0	0.0
KOP 5	0.0	-0.3	-0.3	-0.3	-0.3	0.0	0.0	0.0	0.0	0.0
KOP 6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KOP 7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: ICF International, 2015.

Table 6. Visual Quality Rating at Key Observation Points [by Project Alternative/Element]

Key Observation Point	Visual Quality Rating									
	Alt. 1	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**TPSS**	**MSF A**	**MSF B**	**MSF C**	**MSF D**
KOP 1	No Change	Moderately high	No Change	Moderately high	No Change	Low	No Change	No Change	No Change	No Change
KOP 2	No Change	Moderately high	Moderately high	Moderately high	Moderately high	Low	Low	No Change	No Change	No Change
KOP 3	No Change	Moderate	Moderate	Low	Low	Low	No Change	No Change	No Change	No Change
KOP 4	No Change	Moderate	Moderate	No Change	No Change	No Change	No Change	No Change	No Change	No Change
KOP 5	No Change	Moderate	Moderate	Moderate	Moderate	Low	Low	Low	No Change	No Change
KOP 6	No Change	Moderate	Moderate	Moderate	Moderate	No Change	No Change	No Change	Low	Low
KOP 7	No Change	Moderate	Moderate	Moderate	Moderate	No Change	No Change	No Change	No Change	No Change

Source: ICF International, 2015.

9th Street with a Grand Avenue Extension (Alternative 4)

Resource Change under the Project

Under Alternative 4, proposed changes associated with the Project would be similar to those described above under Alternative 2. The Project would occur within the viewshed of Disney Concert Hall. Although no officially recognized scenic views occur in this setting, views of the building are considered important due to its design quality. Notwithstanding placement of the station stop adjacent to the iconic Disney Concert Hall, because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit system and though visual quality would decrease slightly, it would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. Viewer response is expected to be minimal.

9th Street without a Grand Avenue Extension (Alternative 5)

Resource Change under the Project

As with Alternative 3, the Grand Avenue Extension is not included as a part of the proposed Project alignment under Alternative 5. Therefore, under this alternative, proposed changes associated with the Project would not occur within KOP 1. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would not occur within KOP 1. As a result, no new visual elements would be introduced and no viewer response would occur.

Traction Power Substations

Resource Change under the Project

As mentioned, the proposed streetcar would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. One of the proposed TPSS locations is within the public ROW on the southeast corner of the Grand Avenue and 2nd Street intersection. Large areas are available where a TPSS could be placed without interfering with loading docks or parking structure entrances. Another alternative is to place the TPSS at the northeast corner of Grand Avenue and 2nd Street, which would place the TPSS below street elevation, hidden behind an existing landscaped fence. From KOP 1, TPSS siting locations at these sites would be very difficult to detect.

As mentioned, the substations would be relatively small in size and given an architectural design treatment that would be compatible with adjacent buildings and neighborhood character. Their design, through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG and other applicable regulations such as the *Los Angeles Municipal Code, Section 62.08*, would minimize their presence in visual terms. As a result, adverse effects/impacts on visual resources due to the TPSS would be avoided or substantially minimized and resource change would be low.

Viewer Response

Under this alternative, viewer response associated with the Project would be similar to Alternative 2. Viewer response is expected to be minimal.

Maintenance and Storage Facilities

Resource Change under the Project

The proposed MSF siting locations occur outside the viewsheds within KOP 1. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, as mentioned, construction of an MSF would not occur within KOP 1. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 2: Broadway between 5th and 6th Streets, Looking North

Existing Condition

The streetwall on both sides of Broadway is unbroken, framing both south- and north-facing views down the street at this vantage point (see Figure 5).[1] The rectilinear forms of the buildings and the consistent, classically inspired architectural language, architectural cladding materials, and coloration (e.g., tan, gray, off-white) create strong visual interest (vividness) as well as strong visual unity. However, the large quantity of business signs and conflicting sign treatments, placements, colors and patterns, combined with traffic signal lighting, diminishes the intactness of the view. The gray roadway and sidewalk paving are dominant in terms of line, color, and texture, and add a strong element of unity to the view.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for

[1] Note that the existing view of Broadway depicted in Figure 7 does not include the approved BSMP project improvements.

construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

Build Alternatives

From KOP 2, Alternatives 2 through 5 would include the same proposed project elements. As a result, the build alternatives would result in similar visual impacts. Thus, they are analyzed conjointly below.

Resource Change under the Project

As shown in Figures 5 and 5A, Project features include installation of tracks, new paving along the track path, and new accent paving that would be consistent in its gray coloration with the existing sidewalks. Slight changes to the simulated view along Broadway, as shown in Figure 5A, could occur, depending on the final alternative selection. For the purposes of this VIA, the simulation, as presented, best represents the potential visual changes that could occur under the proposed project's build alternatives. The bulk of design changes in this viewshed would not be made as part of the Project, but rather, as part of the BSMP—a related project in visual terms; only the streetcar-specific elements, such as the streetcar platforms, are part of the Project. BSMP improvements would include widening the sidewalks along Broadway and adding station shelters for waiting passengers. These shelters would incorporate benches and wayfinding signage beneath translucent roofs into single structures with very limited elements that have the potential to obscure views. Reconfiguring the sidewalks along the west side of Broadway, installing street furniture, and adding landscaping in above-ground planters and trees in wells protected by black metal grates are also proposed as part of the related BSMP, scheduled for implementation prior to the Project. As mentioned, trees have the potential to be removed along the project alignment. In compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected.

As part of the Project, OCS electrical wiring would be included. There are two potential configurations for the OCS wires, which supply electrical current to the streetcar vehicles. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. OCS suspension at turning locations would be more specialized and specific to each location, possibly requiring a combination of wire-mounting configurations. Despite the extensive nature of the design interventions along Broadway proposed as part of the Project and BSMP, these combined elements would read as extensions of current public transit features and would add visually unifying elements to the view. The change in visual quality would be noticeable but would seem appropriate in scale and in keeping with the historic design character of Broadway. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderately high.

Viewer Response

The Project does not include development of natural open space and would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its features would be at, or slightly above, street level, small in mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar-related platforms and platform shelters would not be of sufficient scale or bulk to cast shadows of sufficient size to affect shade-sensitive uses. Nor would these features significantly alter ambient illumination levels or result in spill light impacts on surrounding uses. The streetcar trains would be lighted in a manner that would minimize the potential for spill light effects and would not generate more nighttime light on the streets than existing downtown buses.

The Project would occur within the Broadway Theatre and Commercial Historic District. Although no officially recognized scenic views occur in this setting, views along Broadway are considered important due to the concentration of architectural/historical resources. However, because the Project features within the public right-of-way read as extensions of the street and of the downtown public transit system and would seem appropriate to the setting in scale and design terms, viewer response is expected to be moderate and positive, for both sensitive viewers (e.g., sightseers and other viewers traveling for pleasure) and less-sensitive viewers.

Figure 5 (KOP 2). View along Broadway, between 5th and 6th Streets, Looking North

Figure 5A (KOP 2). Simulated View along Broadway, between 5th and 6th Streets

Traction Power Substations

Resource Change under the Project

As mentioned, the proposed streetcar would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. One of the proposed TPSS locations is on 208 S. Broadway, as the Regional Connector Station lot is currently being designed and the potential for a TPSS therein is being assessed by Metro and property owner to determine feasibility and capacity. A nearby alternative, on 229 S. Broadway, is also being considered. The 229 S. Broadway site is a parking lot on the west side of the street that has the possibility of serving both the Broadway and Hill Street alignments. From KOP 2, TPSS at these sites would be very difficult to detect.

As mentioned, the substations would be relatively small in size and given an architectural design treatment that would be compatible with adjacent buildings and neighborhood character. Their design, through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, would minimize their presence in visual terms. As a result, adverse effects/impacts on visual resources under this alternative would be avoided or substantially minimized and resource change would be low.

Viewer Response

Under this alternative, viewer response associated with the Project would be low.

Maintenance and Storage Facilities

Broadway and 2nd Street

Resource Change under the Project

As mentioned, under Option A, the MSF would be located on the west side of Broadway between 2nd and 3rd Street(s) and would consist of an enclosed building and an outdoor area where routine inspections, maintenance work and light repairs could be performed. From KOP 2, this MSF siting location would be very difficult to detect. The proposed location is in an existing parking lot between 2nd and 3rd Streets and Broadway and Hill Streets, and would abut La Catedral De Los Angeles Wedding Chapel, Guadalupe Wedding Chapel, the Office of Child Care and several other institutional and retail-oriented establishments such as the Max Electronics Center, the Learning Rights Law Center, and Civic Center Studios, among others. The area around the site is in a built up urban environment and contains a variety of land uses, including residential. South of 3rd Street are popular attractions such the Grand Central Market and the Bradbury Building. The MSF facility would replace the existing parking lot and, in accordance with the Downtown Design Guidelines, would provide a continuous landscaped parkway next to the curb and would line the property with an attractive façade (no chain link or barbed wire) [City of Los Angeles, 2009]. Therefore, it would improve the quality of the surrounding viewshed and, as a public facility amongst a mix of land uses, would not disrupt the visual character of the project area. Since the MSF site would be two or three stories high, due to the existing variety of building sizes and architectural elements, the scale and size of the proposed MSF would not substantially alter or degrade existing views. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature of the proposed site, its surrounding land uses, and the varying size of the neighboring buildings, high-rises and residences, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Similarly, due to its relative size, the MSF facility would not compromise views to and/or from neighboring facilities along 2nd, 3rd, Broadway, and Hill Streets. Thus, MSF Option A would not degrade the visual character of the area, degrade open space elements, create an unacceptable degree of contrast, or compromise the nature and quality of key views within the project area. Rather, with its landscaped parkway and attractive façade, it would improve visual quality in the surrounding area.

Furthermore, the MSF would be designed to fit into and complement the surrounding buildings and neighborhood. Through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, and California Building Code, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, the change in visual quality would be noticeable, but would seem appropriate in scale and in keeping with the historic design character of Broadway. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderately high.

Viewer Response

As mentioned, the MSF would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the option's degree of view obstruction would be very low. In addition, the MSF would not block informal views. Although no officially recognized scenic views occur in this setting, views along Broadway are considered important due to the concentration of architectural/historical resources. However, because the MSF features would adhere to pertinent downtown design guidelines and other applicable regulations, they would seem appropriate to the setting in scale and design terms. Viewer response would be minimal.

Other Locations

Resource Change under the Project

Under the remaining proposed MSF siting locations at Hill & 5th Street, 11th & Olive Street (East), and 11th & Olive (West), the MSF would be constructed outside the viewsheds within KOP 2. As a result, no new visual elements would be introduced and no resource change would occur under those options.

Viewer Response

Again, under these options, construction of the MSF would not occur within KOP 2. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 3: Figueroa Street, Approaching Olympic Boulevard, Looking North

Existing Condition

Dramatic and highly varied architectural forms, with divergent architectural cladding, textures, and coloration characterize this view (see Figure 6).[2] Many of the buildings are high-rise structures, producing a series of individuated vertical line elements in the view that are moderately powerful in visual terms, and vivid. The verticality is contrasted at the first floor–level of the buildings by rectilinear architectural features that are more horizontal in alignment than vertical. Also, due to their curvilinear form, evergreen color, and texture, the street trees (*Ficus* spp.) are a noteworthy visual element of secondary importance that contrasts with the pronounced verticality of the architectural forms. The horizon serves as the focal point in the backdrop of the view.

The streetwall on both sides of Figueroa Street is porous, only partially framing views down the street at this vantage point. The gaps between buildings, and the highly varied architectural design and heights of the buildings, create moderate visual interest (vividness) while conveying only a moderately low degree of visual unity (due to the highly varied architectural detail, color, building placements, and heights). The gray roadway and sidewalk paving is dominant in the view in terms of line, color, and texture, and offers both a contrasting and visually unifying element.

The view is largely free of distracting, cluttering elements, such as traffic light/signage, and building signage is subdued and fitted to the architectural forms of the buildings, thereby conveying a moderate degree of intactness.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

[2] Note that the existing view along Figueroa Street shown in Figure 8 does not depict the proposed Figueroa Corridor project improvements.

7th Street with a Grand Avenue Extension (Alternative 2)

Resource Change under the Project

Design changes in this viewshed would include those made as part of the Project as well as those of the Figueroa Corridor Streetscape Project—a related project in visual terms. Figueroa Corridor Streetscape Project improvements would include a bikeway (already in place and delineated with striping), landscaping, and some reconfiguration of driving lanes. As shown in Figures 6 and 6A, installation of tracks and new paving along the track path, accompanied by street restriping to demarcate the shared bus, motor vehicle, and streetcar right-of-way, bikeway, and reconfigured drive lanes, would read as extensions of the street and current public transit features, such as bus stops, and would add visually unifying elements to the view. OCS electrical wiring would include several components, based on which of the two potential configurations is selected. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Furthermore, trees have the potential to be removed along the project alignment. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected. The change as a result of the Project and the related Figueroa Corridor Streetscape Project, whether considered separately or together, would be slightly noticeable on this wide, heavily trafficked thoroughfare and would introduce nominal changes to its design setting. Visual quality would remain moderate. As mentioned, Tables 4 through 6 document the changes in visual quality under the Project.

Viewer Response

The Project does not include the development of natural open space and would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its features would be at, or slightly above, street level, small in mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar-related platforms and platform shelters would not be of sufficient scale or bulk to cast shadows of sufficient size to affect shade-sensitive uses. Nor would

Figure 6 (KOP 3). View along Figueroa Street at Olympic Boulevard, Looking North

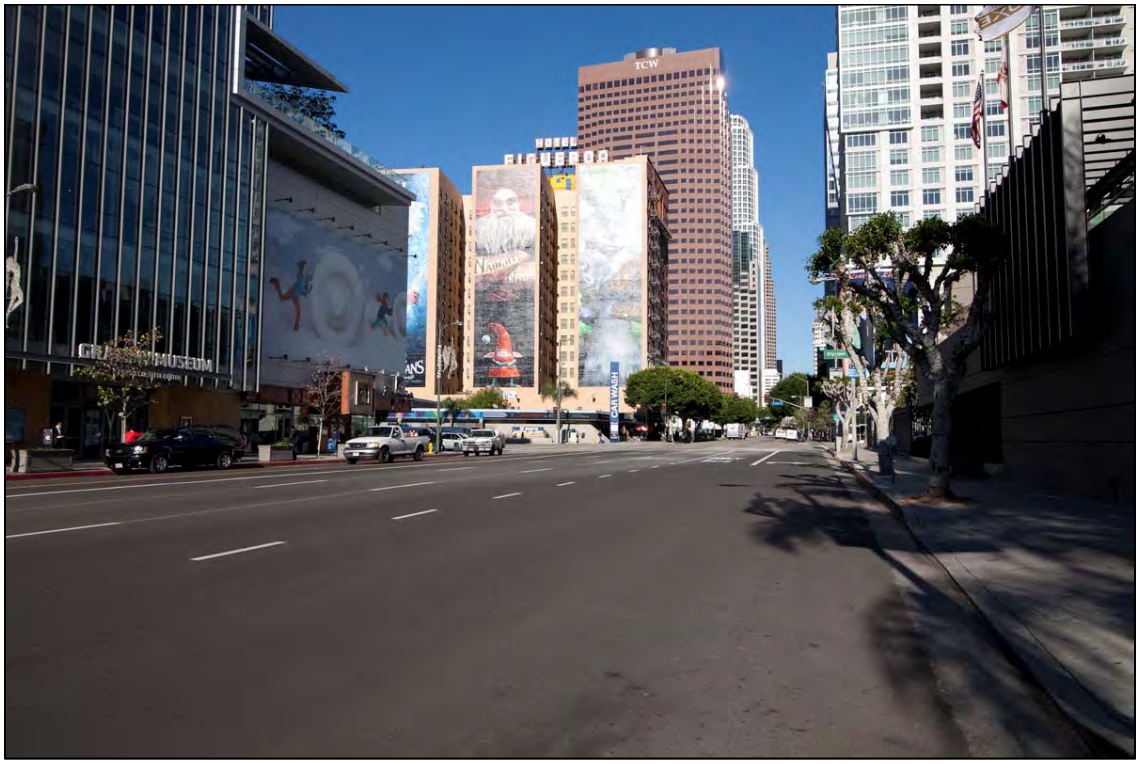


Figure 6A (KOP 3). Simulated View, North along Figueroa Street at Olympic Boulevard

these features significantly alter ambient illumination levels or result in spill light impacts on surrounding uses. The streetcar trains would designed and lighted in a manner that would minimize the potential for spill light effects and would not generate more nighttime light on the streets than existing downtown buses.

The Project would occur as part of a heavily trafficked thoroughfare and in a design setting where no officially recognized scenic views or noteworthy informal views are present. Moreover, because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit elements and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

7th Street without a Grand Avenue Extension (Alternative 3)

Resource Change under the Project

Under Alternative 3, proposed changes associated with the Project would be the same as those described above under Alternative 2. The change as a result of the Project under this alternative would be slightly noticeable on a wide, heavily trafficked thoroughfare and would introduce nominal changes to its design setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. The Project would occur in a design setting where no officially recognized scenic views or noteworthy informal views are present. Because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit elements and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

9th Street with a Grand Avenue Extension (Alternative 4)

Resource Change under the Project

Under Alternative 4, proposed changes associated with the Project would be similar to those described above under Alternative 2. However, under this alternative, impacts would be slightly less, as changes throughout the Project alignment would begin at 9th Street. Therefore, the foreground depicted in KOP 3, between Olympic Boulevard and 9th Street, would remain unchanged. Thus, the changes as a result of the Project under this alternative would also be slightly noticeable on a wide, heavily trafficked thoroughfare and would introduce nominal changes to its design setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2, though slightly less. The Project would occur in a design setting where no officially recognized scenic views or noteworthy informal views are present. Since much of KOP 3 would remain unchanged and because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit elements and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

9th Street without a Grand Avenue Extension (Alternative 5)

Resource Change under the Project

Under Alternative 5, proposed changes associated with the Project would be the same as those described above under Alternative 4. The change as a result of the Project under this alternative would be slightly noticeable on a wide, heavily trafficked thoroughfare and would introduce nominal changes to its design setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be the same as those described above under Alternative 4. The Project would occur in a design setting where no officially recognized scenic views or noteworthy informal views are present. Because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit elements and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

Traction Power Substations

Resource Change under the Project

As mentioned, the proposed streetcar would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. One of the proposed TPSS locations is on 928 Figueroa Street, which is on Figueroa Street, south of 9th Street, in a small parking lot. From KOP 3, this TPSS siting location would be very difficult to detect. As mentioned, the substations would be relatively small in size and given an architectural design treatment that would be compatible with adjacent buildings and neighborhood character. Their design, through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, would minimize their presence in visual terms. As a result, adverse effects/impacts on visual resources due to the TPSS would be avoided or substantially minimized and resource change would be low.

Viewer Response

Under this alternative, viewer response associated with the Project would be low.

Maintenance and Storage Facilities

Resource Change under the Project

The proposed MSF siting locations occur outside the viewsheds within KOP 3. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, as mentioned, construction of an MSF would not occur within KOP 3. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 4: West 7th Street, Approaching Flower Street, Looking East

Existing Condition

The streetwall on both sides of 7th Street is unbroken, framing both west- and east-facing views down the street at this vantage point (see Figure 7). The rectilinear forms of the buildings and the consistent, classically inspired architectural language, architectural cladding materials, and coloration (e.g., tan, gray, brown) create strong visual interest (vividness) as well as strong compositional unity. With its horizontal line pattern, texture, and gray coloration, the roadway and sidewalk paving serve to strongly focus the view and provide one element of contrast to the dominant vertical line components conveyed by the architectural forms. Also, due to their curvilinear form, evergreen color, and texture, the *Ficus* street trees are a noteworthy visual element of secondary importance that contrasts with the dominant rectilinear character of the architectural forms.

The view is largely free of distracting, cluttering elements, such as traffic light/signage, and building signage is subdued and fitted to the architectural forms of the buildings, thereby conveying a moderately high degree of intactness. The view is dynamic due to the balance of unifying design elements, subtly differentiated design features, and the moderately strong tree canopy.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

7th Street with a Grand Avenue Extension (Alternative 2)

Resource Change under the Project

Design changes in this viewshed would include those made as part of the Project, as well as those of the City of Los Angeles 2010 Bicycle Master Plan, the primary improvements of which would be the delineation of a bikeway (created through restriping) and the reconfiguration of driving lanes. The Project would include paving along the streetcar track path, restriping, and installation of an OCS electrical wiring support system. As shown in Figures 7 and 7A, installation of tracks and new paving along the track path, accompanied by street restriping to demarcate the shared bus, motor vehicle, and streetcar lane, bikeway, and reconfigured drive lanes, would read as extensions of the street and of current public transit features, such as bus stops, that exist within the public right-of-way, and would add visually unifying elements to the view. The change would be slightly noticeable on this heavily trafficked thoroughfare and would introduce nominal changes to its design setting, including station platforms, railings, and OCS electrical wiring, which could include two potential configurations, both of which would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Furthermore, trees have the potential to be removed along the project alignment. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected. Visual quality would remain moderate. Tables 4 through 6 document the changes in visual quality under the Project.

Viewer Response

The Project does not include the development of natural open space and would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its

Figure 7 (KOP 4). View along 7th Street at Flower Street, Looking East

Figure 7A (KOP 4). Simulated View, 7th Street at Flower Street, Looking East

features would be at, or slightly above, street level, small in mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar-related platforms and platform shelters would not be of sufficient scale or bulk to cast shadows of sufficient size to affect shade-sensitive uses. Nor would these features significantly alter ambient illumination levels or result in spill light impacts on surrounding uses. The streetcar trains would be lighted in a manner that would minimize the potential for spill light effects and would not generate more nighttime light on the streets than the existing downtown bus fleet.

The Project would occur within a viewshed characterized by a large concentration of architectural/historical resources marked by a strongly defined streetwall that possesses a moderately high level of visual quality. Although no officially recognized scenic views occur in this setting, views along 7th Street are considered important due to the concentration of architectural/historical resources. However, because the Project features proposed within the public right-of-way read as extensions of the street and of extant downtown roadway and public transit elements, and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

7th Street without a Grand Avenue Extension (Alternative 3)

Resource Change under the Project

Under Alternative 3, proposed changes associated with the Project would be the same as those described above under Alternative 2. The changes would be slightly noticeable on this heavily trafficked thoroughfare and would introduce nominal changes to its design setting, including station platforms, railings, and OCS electrical wiring as well as guide wires that could be suspended from solitary catenary poles, potentially incorporating decorative streetlights consistent with the streetscape along 7th Street. Visual quality would remain moderate. As mentioned, Tables 4 through 6 document the changes in visual quality under the Project.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. The Project would occur in a design setting where no officially recognized scenic views or noteworthy informal views are present. Because the Project features proposed within the public right-of-way would read as extensions of the street and of the downtown public transit elements and would seem appropriate to the setting in scale and design terms, viewer response is expected to be minimal.

9th Street with a Grand Avenue Extension (Alternative 4)

Resource Change under the Project

Under Alternative 4, proposed changes associated with the Project would not occur within KOP 4 as the alignment would occur along 9th Street rather than 7th Street. As a result, no new visual elements would be introduced under this alternative and no resource change would occur.

Viewer Response

Again, under this alterative, proposed changes associated with the Project would not occur within KOP 4. As a result, no new visual elements would be introduced and no viewer response would occur.

9th Street without a Grand Avenue Extension (Alternative 5)

Resource Change under the Project

As in Alternative 4, proposed changes associated with the Project would not occur within KOP 4 under this alternative as the alignment would occur along 9th Street rather than 7th Street. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would not occur within KOP 4. As a result, no new visual elements would be introduced and no viewer response would occur.

Traction Power Substations

Resource Change under the Project

The TPSS would be constructed outside the viewsheds within KOP 4. As a result, no new visual elements would be introduced and no resource change would occur due to the TPSS.

Viewer Response

TPSS would not be constructed within KOP 4. As a result, no new visual elements would be introduced and no viewer response would occur.

Maintenance and Storage Facilities

Resource Change under the Project

The proposed MSF siting locations occur outside the viewsheds within KOP 4. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, as mentioned, construction of an MSF would not occur within KOP 4. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 5: Hill Street, Approaching West 6th Street, Looking North

Existing Condition

The visual elements that make up the view are highly varied in terms of building architectural design, height, and exterior cladding materials (e.g., glass skin, brick, concrete, terra cotta). Vertical line elements are dominant, and the degree of contrast, due to differentiation in size, placement, and architectural design detail, is high (Figure 8). The streetwall on both sides of Hill Street is porous, only partially framing north- and south-facing views down the street at this vantage. Because of the moderately dense clustering of trees and understory landscaping along the west side of Hill Street, Pershing Square, with its curvilinear form, evergreen color, and texture, provides a significant and vibrant contrasting component to the strongly individualized building forms. The rectilinear forms of the buildings and the non-continuous, classically inspired architectural language, architectural cladding materials, and differentiation in coloration (e.g., tan, brown, gray, green-blue, off-white) create moderate visual interest (vividness) as well as moderately low visual unity. The gray roadway and sidewalk paving are dominant in the view in terms of line, color, and texture and add a strong element of unity.

The view is relatively free of distracting, cluttering elements, such as traffic lights/signage. Building signage is subdued and fitted to the architectural forms of the buildings, thereby conveying a moderately high degree of intactness.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

Build Alternatives

From KOP 5, Alternatives 2 through 5 would include the same proposed project elements. As a result, the build alternatives would result in similar visual impacts. Thus, they are analyzed conjointly below.

Resource Change under the Project

As is shown in Figures 8 and 8A, the installation of tracks and new paving along the track path, accompanied by street restriping to demarcate the shared streetcar/bus/motor vehicle lane and reconfigured drive lanes, would read as an extension of current public transit features, such as bus stops, that occur within the existing public right-of-way. OCS electrical wiring would include several components, based on which of the two potential configurations is selected. Both of these configurations would use decorative poles consistent with the streetscape along Hill Street, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Furthermore, trees have the potential to be removed along the project alignment. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected. The change would be slightly noticeable on this thoroughfare and would introduce nominal changes to a design setting, which possesses only moderate visual quality. Table 4 documents the change in visual quality under the Project.

Viewer Response

The Project does not include the development of natural open space. It would be integrated into its design setting, with only a minor degree of contrast. No designated scenic corridors occur in the viewshed. The Project's degree of view obstruction would be very low given that most of its features would be at street level or slightly above, small in terms of mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar platforms and shelters would not cast shadows that would affect shade-sensitive uses, nor would these features significantly alter ambient illumination

Figure 8 (KOP 5). View along Hill Street at 6th Street, Looking North

Figure 8A (KOP 5). Simulated View, Hill Street at 6th Street, Looking North

levels or result in impacts on surrounding uses related to spill light. The streetcar trains would be lighted in a manner that would minimize the potential for spill light. They would not generate more nighttime light than existing downtown buses.

The Project would occur in a setting that is characterized by a mix of both new, non-historic buildings and older architectural/historical resources, including Pershing Square, the visual centerpiece. Although no officially recognized scenic views occur in this setting, views to and from Pershing Square is considered important because of its role as a key downtown park and its design as landscaped open space. However, because Project features would read as extensions of the street and extant downtown public transit elements and seem appropriate in terms of scale and design to their setting adjoining Pershing Square, viewer response is expected to be minimal.

Traction Power Substations

Resource Change under the Project

As mentioned, the proposed streetcar would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment and would measure approximately 17 feet long by 11 feet wide by 11 feet high, or of sufficient size to house the TPSS equipment. One of the proposed TPSS locations is on 431 Hill Street, which is located west of Hill Street between 4th and 5th Streets. Alternatively, a TPSS may be sited at 628 S. Hill Street. Currently, there is a privately owned small parking lot on the east side of Hill Street, south of 6th Street. There is also a small jewelry store on the site. In the case that this site is selected, the TPSS would be built behind the store, which would prevent the unit from being an obstruction. From KOP 5, these TPSS siting locations would be very difficult to detect. As mentioned, the substations would be relatively small in size and given an architectural design treatment that would be compatible with adjacent buildings and neighborhood character. Their design, through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, would minimize their presence in visual terms. As a result, adverse effects/impacts on visual resources due to the TPSS would be avoided or substantially minimized and resource change would be low.

Viewer Response

Under this alternative, viewer response associated with the Project would be low.

Maintenance and Storage Facilities

MSF Option: Broadway and 2nd Street

Resource Change under the Project

As mentioned, one potential siting location for the MSF is on the east side of Broadway between 2nd and 3rd Street(s) and would consist of an enclosed building and an outdoor area where routine inspections, maintenance work and light repairs could be performed. From KOP 5, this MSF siting location would be very difficult to detect. The MSF would be designed to fit into and complement the surrounding buildings and neighborhood. Since the MSF site would be two or three stories high, due to the existing variety of building sizes and architectural elements, the scale and size of the proposed MSF would not substantially alter or degrade existing views. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature of the proposed site, its surrounding land uses, and the varying size of the neighboring buildings, high-rises and residences, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code and California Building Code, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, the change in visual quality would be noticeable, but would seem appropriate in scale and in keeping with the scale and setting surrounding the site. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderate.

Viewer Response

As mentioned, the MSF would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the option's degree of view obstruction would be very low. In addition, the MSF would not block informal views. Due to its relative size, the MSF facility would not compromise views to and/or from neighboring facilities along 2nd, 3rd, Broadway, and Hill Streets. Although no officially recognized scenic views occur in this setting, views to and from Pershing Square are considered important because of its role as a key downtown park and its design as landscaped open space. However, because the MSF features would adhere to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations, they would seem appropriate to the setting in terms of scale and design. Viewer response is expected to be minimal.

MSF Option: Hill Street and 5th Street

Resource Change under the Project

As mentioned, another potential siting location for the MSF is on the northwest corner of Hill Street and 5th Street and, like the other MSF options, would consist of an enclosed building and an outdoor area where routine inspections, maintenance work and light repairs could be performed. From KOP 5, this MSF siting location would be difficult to detect. The proposed location is in an existing parking lot between 4th and 5th Streets and Hill and Olive Streets, and would abut Metro 417 Apartments. The area around the site is in a built up urban environment and contains a variety of land uses, including residences, restaurants, retail outlets, offices and hotels. Being situated closer to Los Angeles's Central Business District, the proposed site is in proximity of various skyscrapers and high-rise buildings that are afforded views of the lot, such as the Southern California Gas Company building and the Millennium Biltmore Hotel, amongst others. Pershing Square is one block southwest, between 5th and 6th Streets and Hill and Olive Streets. Under Option B, the proposed changes associated with operation of the MSF facility would be similar to those described above under Option A. The MSF facility would replace an existing parking lot and, in accordance with the Downtown Design Guidelines, would provide a continuous landscaped parkway next to the curb and would line the property with an attractive façade (no chain link or barbed wire) (City of Los Angeles, 2009). Therefore, it would improve the quality of the surrounding viewshed and, as a public facility amongst a mix of land uses, would not disrupt the visual character of the project area. Since the MSF site would be two or three stories high, due to the existing variety of building sizes and architectural elements, particularly skyscrapers, high-rises and other tall buildings in the Central Business District, the scale and size of the proposed MSF would not substantially alter or degrade existing views. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature of the proposed site, its surrounding land uses, and the varying size of the neighboring buildings in the Central Business District, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Nor would it compromise views to and/or from neighboring facilities along 4th, 5th, Hill, and Olive Streets. Residents at Metro 417 Apartments would be able to see the MSF, though, these residents would be accustomed to dynamic, urban cityscape views, would not substantially change the visual setting for these viewer groups. Thus, this MSF option would not degrade the visual character of the area, degrade open space elements, create an unacceptable degree of contrast, or compromise the nature and quality of key views within the project area. Rather, in compliance with DDG, its landscaped parkway and attractive façade would help improve visual quality in the surrounding area.

Furthermore, the MSF would be designed to fit into and complement the surrounding buildings and neighborhood. Through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, and California Building Code, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, the change in visual quality would be noticeable, but would seem appropriate in scale and in keeping with the scale and setting surrounding Pershing Square. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderate.

Viewer Response

As mentioned, the MSF would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the option's degree of view obstruction would be very low. In addition, the MSF would not block informal views. Although no officially recognized scenic views occur in this setting, views to and from Pershing Square are considered important because of its role as a key downtown park and its design as landscaped open space. However, because the MSF features would adhere to pertinent downtown design guidelines and other applicable regulations, they would seem appropriate to the setting in terms of scale and design to their setting adjoining Pershing Square. Viewer response is expected to be minimal.

Other Locations

Resource Change under the Project

If placed at either 11th & Olive Street (East) or 11th & Olive Street (West), the MSF would be constructed outside the viewsheds within KOP 5. As a result, no new visual elements would be introduced and no resource change would occur under these options.

Viewer Response

Again, under these option, construction of the MSF would not occur within KOP 5. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 6: 11th Street at Broadway, Looking West

Existing Condition

The streetscape at this location is characterized by highly varied architectural forms, with divergent building heights, architectural cladding, textures, and coloration (see Figure 9).[3] Because of the presence of large high-rise buildings in the mid-frame and far-off portions of the view—including the 54-story portion of the Ritz Carlton and Residences complex and the Elleven Lofts and Luma South condominium buildings (19 stories and 13 stories, respectively)—the dominant line pattern in the view is vertical. However, the low-rise buildings in the foreground, along with the road pavement, provide a contrasting horizontal line pattern of secondary importance. These contrasting vertical and horizontal line elements in the view are only moderately powerful and vivid, with the architectural elements within the LASED—roughly 0.5 mile to the west—forming the backdrop to the view.

In the foreground, framing the view on the left, is the Herald-Examiner building, an architectural/historical landmark and an important visual resource along both Broadway and 11th Street. Among the distinctive Mission Revival features of the Herald-Examiner building are its yellow, blue, and white ceramic-clad domes; mission-style tiled roof; arched openings; and decorative metal balcony railings.

Although they form a discontinuous line along 11th Street, the yew (*Podocarpus macrophyllus*) street trees are a noteworthy visual element of secondary importance. Their curvilinear form, evergreen color, and texture contrast with the architectural forms.

A range of colors can be seen in this view. These include the pale pink-beige color of the Herald-Examiner building, off-white and beige coloration of some of the mid-frame buildings, the light gray-blue of the high-rise Ritz Carlton and Residences complex, and a range of brown shades, from light to dark. The green color of the street trees and the gray asphalt paving provide contrast.

The streetwall on both sides of 11th Street is porous, only partially framing views down the street from this vantage. The gaps between the buildings provide views of asphalt-paved surface parking lots. Considered together with the highly varied architectural design and the heights of the buildings, these elements create moderate visual interest (vividness) while conveying only a moderately low degree of visual unity (due to the highly varied architectural detail, color, building placements, and heights).

The view has a few distracting, cluttering elements, such as billboards and traffic lights or signage. Building signage is generally subdued and fitted to the architectural forms of the buildings, giving the view a moderate degree of intactness.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for

[3] Please note that the view along 11th Street shown in Figure 11 does not depict the proposed Figueroa Corridor Streetscape Project improvements.

construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

7th Street with a Grand Avenue Extension (Alternative 2)

Resource Change under the Project

Design changes in this viewshed would include those made as part of the Project and those that would be part of the Figueroa Corridor Streetscape Project—a related project in visual terms. The Project would reconfigure driving lanes, and the Figueroa Corridor Streetscape Project would provide a bikeway along 11th Street, groundcover parkway landscaping, and supplemental street trees. As is shown in Figures 9 and 9A, planting a large number of new trees with a dense and consistent placement would add a visually unifying element to the view. The tracks and new paving along the track path, accompanied by street restriping to demarcate the shared motor vehicle lane/streetcar right-of-way and the bikeway, would read as an extension of the street. These would also be visually unifying elements.

Because this vantage depicts the streetcar at a location where it would turn from one street to another, the OCS electrical wiring would several components, based on which of the two potential configurations is selected. Both of these configurations would use decorative poles consistent with the streetscape along 11th Street and Broadway, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Furthermore, trees have the potential to be removed along the project alignment. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected. The change as a result of the Project and the related Figueroa Corridor Streetscape Project, whether considered separately or together, would clearly be noticeable, particularly along 11th Street, which is a fairly narrow thoroughfare. The large number of OCS-related guy wires associated with the train where it would turn the corner would also be noticeable. Nonetheless, the degree of change, in terms of scale and design, would seem appropriate in relation to the setting. Features proposed as part of the Figueroa Corridor Streetscape Project, such as additional street trees and continuous parkway groundcover planting, would add greater visual cohesion and potentially enhance intactness. Visual quality would remain moderate. Table 4 documents the change in visual quality under the Project.

Figure 9 (KOP 6). View along 11th Street at Broadway, Looking West

Figure 9A (KOP 6). Simulated View, 11th Street at Broadway, Looking West

Viewer Response

The Project does not include the development of natural open space. It would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its features would be at street level or slightly above street level, small in terms of mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar platforms and shelters would not cast shadows that would affect shade-sensitive uses, nor would these features significantly alter ambient illumination levels or result in impacts on surrounding uses related to spill light. The streetcar trains would be lighted in a manner that would minimize the potential for spill light. They would not generate more nighttime light than existing downtown buses.

The Herald-Examiner building is the key architectural/historical resource in the viewshed. The Ritz Carlton serves as a visual landmark and focal point in the backdrop of the view. No officially recognized scenic views or noteworthy informal views are present within the design setting.

Viewer response is expected to be minimal because Project features would read as extensions of the street as well as extant downtown public transit elements and seem appropriate to the setting in terms of scale and design. The OCS wires at this location would be more noticeable than they would be at other locations along the alignment; however, the degree of change in the view would still be quite minor. Outside of the intersection of 11th Street and Broadway, no views of architectural resources, such as the Herald-Examiner building, would be impaired. In addition, Figueroa Corridor Streetscape Project landscape features (e.g., supplemental street trees and parkway groundcover plantings) would add a degree of visual cohesiveness to the view.

7th Street without a Grand Avenue Extension (Alternative 3)

Resource Change under the Project

Under Alternative 3, proposed changes associated with the Project would be similar to those described above under Alternative 2. The proposed changes as a result of the Project under this alternative, such as the OCS electrical wiring and related support elements, would be noticeable. Nonetheless, the degree of change, in terms of scale and design, would seem appropriate in relation to the setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. No officially recognized scenic views or noteworthy informal views are present within the design setting, though, the Herald-Examiner building is the key architectural/historical resource in the viewshed. The Ritz Carlton also serves as a visual landmark and focal point in the backdrop of the view. The Project's degree of view obstruction would be very low given that most of its features would be at street level or slightly above street level, small in terms of mass, and generally non-opaque. Aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Viewer response is expected to be minimal because Project features would read as extensions of the street as well as extant downtown public transit elements and seem appropriate to the setting in terms of scale and design. The OCS wires at this location would be more noticeable than they would be at other locations along the alignment; however, the degree of change in the view would still be quite minor.

9th Street with a Grand Avenue Extension (Alternative 4)

Resource Change under the Project

Under Alternative 4, proposed changes associated with the Project would be similar to those described above under Alternative 2. The proposed changes as a result of the Project under this alternative would be noticeable, however, the degree of change, in terms of scale and design, would seem appropriate in relation to the setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. Viewer response is expected to be minimal because Project features would read as extensions of the street as well as extant downtown public transit elements and seem appropriate to the setting in terms of scale and design.

9th Street without a Grand Avenue Extension (Alternative 5)

Resource Change under the Project

Under Alternative 5, proposed changes associated with the Project would be similar to those described above under Alternative 2. The proposed changes as a result of the Project under this alternative would be noticeable, however, the degree of change, in terms of scale and design, would seem appropriate in relation to the setting. Visual quality would remain moderate.

Viewer Response

Again, under this alternative, proposed changes associated with the Project would be similar to those described above under Alternative 2. Viewer response is expected to be minimal because Project features would read as extensions of the street as well as extant downtown public transit elements and seem appropriate to the setting in terms of scale and design.

Traction Power Substations

Resource Change under the Project

The TPSS would be constructed outside the viewsheds within KOP 6. As a result, no new visual elements would be introduced and no resource change would occur under this option.

Viewer Response

Construction of the TPSS would not occur within KOP 6. As a result, no new visual elements would be introduced and no viewer response would occur due to the TPSS.

Maintenance and Storage Facilities

MSF Option: 11th Street and Olive Street (East)

Resource Change under the Project

As mentioned, a potential location for the MSF is on the southeast corner of 11th Street and Olive Street and would consist of an enclosed building and an outdoor area where routine inspections, maintenance work and light repairs could be performed. From KOP 6, this MSF siting location would be very difficult to detect. The proposed location would house the MSF in an existing parking lot between 11th and 12th Streets and Olive and Grand Streets, which would abut two parcels, which contain various entities, including a restaurant (facing Olive Street, away from the proposed MSF site) and an insurance broker. The area around the site is in a built up urban environment and contains a variety of land uses. The Herald-Examiner building is an architectural/historical landmark and an important visual resource along both Broadway and 11th Streets. The MSF facility would replace an existing parking lot and, in accordance with the Downtown Design Guidelines, would provide a continuous landscaped parkway next to the curb and would line the property with an attractive façade (no chain link or barbed wire) (City of Los Angeles, 2009). Therefore, it would improve the quality of the surrounding viewshed and, as a public facility amongst a mix of land uses, would not disrupt the visual character of the project area. Since the MSF site would be two or three stories high, due to the existing variety of building sizes and architectural elements, particularly skyscrapers, high-rises and other tall buildings, the scale and size of the proposed MSF would not substantially alter or degrade existing views. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature of the proposed site, its surrounding land uses, and the varying size of the neighboring buildings, high-rises and residences, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Similarly, due to its relative size, the MSF facility would not compromise views to and/or from neighboring facilities along 11th, 12th, Olive, and Grand Streets or to and/or from the Herald-Examiner building.

Furthermore, the MSF would be designed to fit into and complement the surrounding buildings and neighborhood. Through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, and California Building Code, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, the change in visual quality would be noticeable, but would seem appropriate in scale and in keeping with the scale and setting along 11th Street. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderate.

Viewer Response

As mentioned, the MSF would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors or officially recognized scenic views occur in this setting, though, the Herald-Examiner building is the key architectural/historical resource and the Ritz Carlton also serves as a visual landmark and focal point. The degree of view obstruction under this option would generally be very low, and the MSF would not block informal views. Because the MSF features would adhere to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations, they would be appropriate to the setting in terms of scale and design to their setting along 11th Street. Viewer response is expected to be minimal.

MSF Option: 11th Street and Olive Street (West)

Resource Change under the Project

As mentioned, a potential siting location for the MSF would be located on the southwest corner of 11th Street and Olive Street and, like the other MSF options, would consist of an enclosed building and an outdoor area where routine inspections, maintenance work and light repairs could be performed. From KOP 6, this MSF siting location would be very difficult to detect. The MSF facility would replace an existing parking lot and, in accordance with the Downtown Design Guidelines, would provide a continuous landscaped parkway next to the curb and would line the property with an attractive façade (no chain link or barbed wire) (City of Los Angeles, 2009). Therefore, it would improve the quality of the surrounding viewshed and, as a public facility amongst a mix of land uses, would not disrupt the visual character of the project area. Since the MSF site would be two or three stories high, due to the existing variety of building sizes and architectural elements, particularly skyscrapers, high-rises and other tall buildings, the scale and size of the proposed MSF would not substantially alter or degrade existing views. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature of the proposed site, its surrounding land uses, and the varying size of the neighboring buildings, high-rises and residences, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Similarly, due to its relative size, the MSF facility would not compromise views to and/or from neighboring facilities along 11th, 12th, Olive, and Grand Streets or to and/or from the Herald-Examiner building. Thus, this MSF siting location would not degrade the visual character of the area, degrade open space elements, create an unacceptable degree of contrast, or compromise the nature and quality of key views within the project area. Rather, with its landscaped parkway and attractive façade, it would improve visual quality in the surrounding area.

Furthermore, the MSF would be designed to fit into and complement the surrounding buildings and neighborhood; therefore, the final design would vary depending on the site selection. Through adherence to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations such as the Los Angeles Municipal Code, and California Building Code, adverse effects/impacts on visual resources would be avoided or substantially minimized. Thus, the change in visual quality would be noticeable, but would seem appropriate in scale and in keeping with the scale and setting along 11th Street. Tables 4 through 6 document the change in visual quality under the Project. Visual quality would remain moderate.

Viewer Response

As mentioned, the MSF would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors or officially recognized scenic views occur in this setting, though, the Herald-Examiner building is the key architectural/historical resource and the Ritz Carlton also serves as a visual landmark and focal point. The degree of view obstruction under this option would generally be very low, and the MSF would not block informal views. Because the MSF features would adhere to pertinent downtown design guidelines (i.e. HDLADG and DDG) and other applicable regulations, they would be appropriate to the setting in terms of scale and design to their setting along 11th Street. Viewer response is expected to be minimal.

Other Locations

Resource Change under the Project

Under the remaining proposed MSF siting locations at Broadway & 2nd Street and Hill & 5th Street, the MSF would be constructed outside the viewsheds within KOP 6. As a result, no new visual elements would be introduced and no resource change would occur under those options.

Viewer Response

Again, under these options, construction of the MSF would not occur within KOP 6. As a result, no new visual elements would be introduced and no viewer response would occur.

Visual Effect/Impact at KOP 7: 11th Street at Grand Avenue, Looking West

Existing Condition

The streetscape at this location is characterized by varied architectural forms, including a range of building heights, architectural cladding, textures, and coloration (see Figure 10).[4] The dominant line pattern in the view is vertical because of the presence of large high-rise buildings in the foreground and mid-frame portions of the view—including the 54-story portion of the Ritz Carlton and Residences complex in mid-frame (right) and the Elleven Lofts and Luma South condominium buildings (19 stories and 13 stories, respectively) in the foreground (left). Medium-rise buildings, such as the Desmond's warehouse, occur in the foreground (right) and at mid-frame (left and right). Combined with the road pavement, these elements provide a contrasting horizontal line pattern of secondary importance. The contrasting vertical and horizontal line elements in the view are moderately powerful and vivid, with the architectural elements within the LASED forming the backdrop to the view.

Although they are non-uniform in their placement and shape, the yew street trees and the taller, more broadly silhouetted Tipu (*Tipuana tipu*) trees along 11th Street are noteworthy visual elements of secondary importance; their curvilinear form, evergreen color, and texture contrast with the architectural forms.

There is little continuity in the range of colors seen in this view. Colors include the pale gray/beige-pink tone of the Elleven condominiums buildings, the brown-gray color of the adjoining Luma South Building, the beige and brown brick coloration of some of the mid-frame buildings, and the light gray-blue of the high-rise Ritz Carlton and Residences complex. The green color of the street trees, as well as the gray asphalt paving, provides some limited contrast in terms of form, coloration, and texture.

The streetwall on both sides of 11th Street is porous because of the varying building heights and at least one surface parking lot. It only partially frames views down the street at this vantage. Considered together with the highly varied architectural design and heights of the buildings, the

[4] Please note that the view along 11th Street shown in Figure 12 does not depict the proposed Figueroa Corridor Streetscape Project improvements.

elements combine to evoke only moderate visual interest (vividness). They convey only a moderately low degree of visual unity because the highly varied architectural detail, color, building placements, and heights diminish the sense of cohesiveness.

The view has only a few distracting, cluttering elements, such as traffic lights and signage, including temporary street construction signage. Building signage is generally subdued and fitted to the architectural forms of the buildings, giving the view a moderate degree of intactness.

No Project Alternative (Alternative 1)

Resource Change under the Project

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and no resource change would occur under this alternative.

Viewer Response

Under the No Project Alternative, no new construction or building would take place within the Project area, aside from projects that are currently under construction or funded and approved for construction and operation. As a result, no new visual elements would be introduced and there would be no viewer response.

Build Alternatives

From KOP 7, Alternatives 2 through 5 would include the same proposed project elements. As a result, the build alternatives would result in similar visual impacts. Thus, they are analyzed conjointly below.

Resource Change under the Project

Design changes in this viewshed would include those made as part of the Project and those that would be part of the Figueroa Corridor Streetscape Project—a related project in visual terms. The Figueroa Corridor Streetscape Project would provide a bikeway along 11th Street, groundcover parkway landscaping, and supplemental street trees. As is shown in Figures 10 and 10A, planting a large number of new trees with a dense and consistent placement would add a visually unifying element to the view. Trees have the potential to be removed along the project alignment as a result of the proposed build alternatives. As mentioned in the discussion of construction-related effects/impacts, in compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy, any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term significant visual effects/impacts related to trees are expected. Additionally, the proposed Project would provide tracks and new paving along the track path, accompanied by street restriping to demarcate the shared motor vehicle lane/streetcar right-of-way and the bikeway, which would read as an extension of the street.

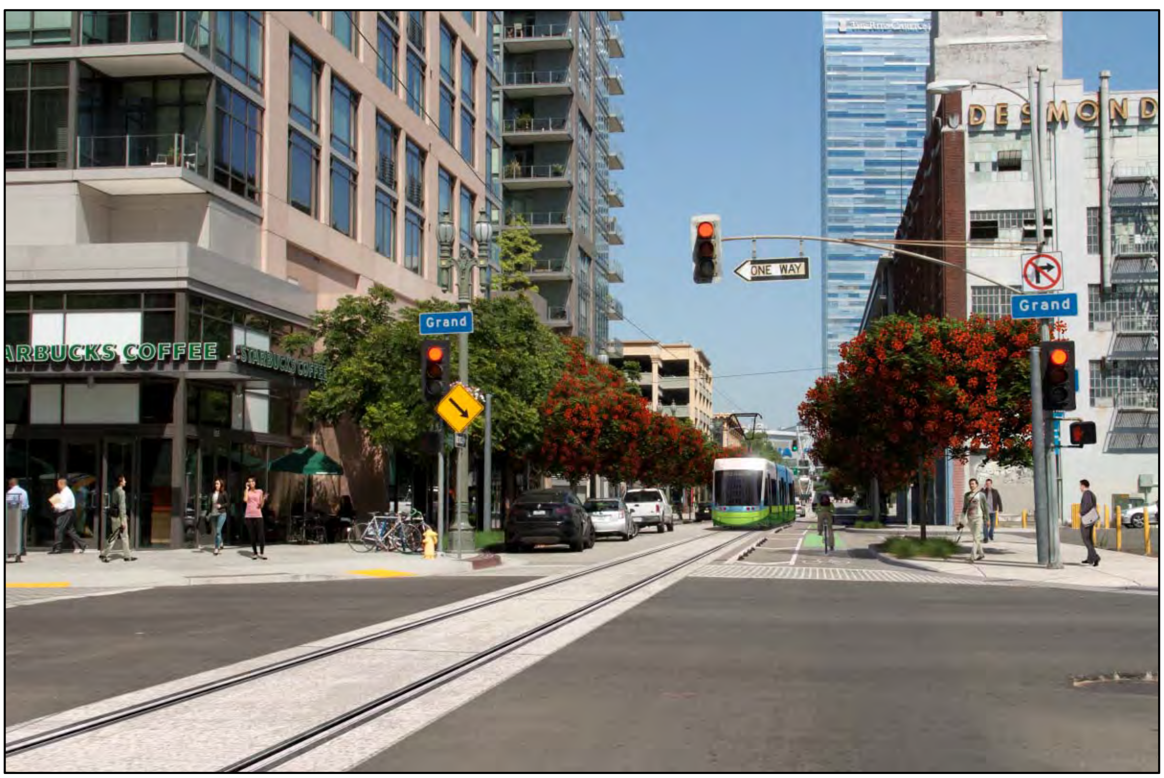
The change as a result of the Project and the related Figueroa Corridor Streetscape Project, whether considered separately or together, would clearly be noticeable, particularly along 11th Street, which is a fairly narrow thoroughfare. Nonetheless, the degree of change, in terms of scale and design, would seem appropriate in relation to the setting. Also, features proposed as part of the Figueroa Corridor Streetscape Project, such as additional street trees and continuous parkway groundcover planting, could enhance intactness—one of the measures of visual quality—by adding greater visual cohesion. Visual quality, however, would remain moderate. Table 4 documents the change in visual quality under the Project.

Viewer Response

The Project does not include the development of natural open space. It would be integrated into its design setting with a very minor degree of contrast. No designated scenic corridors occur in the viewshed, and the Project's degree of view obstruction would be very low given that most of its features would be at street level or slightly above street level, small in terms of mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be

Figure 10 (KOP 7). View along 11th Street at Grand Avenue, Looking West

Figure 10A (KOP 7). Simulated View, 11th Street at Grand Avenue, Looking West



minimally apparent and would not block informal views. Streetcar platforms and shelters would not cast shadows that would affect shade-sensitive uses, nor would these features significantly alter ambient illumination levels or result in impacts on surrounding uses related to spill light. The streetcar trains would be lighted in a manner that would minimize the potential for spill light. They would not generate more nighttime light than existing downtown buses.

As is shown in Figures 10 and 10A, the tracks and new paving along the track path, accompanied by street restriping to demarcate the shared streetcar/motor vehicle lane and reconfigured drive lanes, would read as extensions of the current public street infrastructure that occurs within the existing public right-of-way. OCS electrical wiring would include several components, based on which of the two potential configurations is selected. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Viewer response is expected to be minimal because the Project features would read as extensions of the street infrastructure and seem appropriate to the setting in terms of scale and design. Accordingly, the degree of change in view would be negligible. Informal views across the viewshed of key buildings (e.g., Desmond's warehouse; Ritz Carlton) would not be impaired because all streetcar infrastructure, with the exception of the OCS system and catenary poles, would be at street level and would not affect views of key buildings. Because of their limited presence, OCS wires and catenaries would have a less-than-significant effect on views across the viewshed. Finally, Figueroa Corridor Streetscape Project landscape features (e.g., supplemental street trees and parkway groundcover plantings) would add a small degree of visual cohesiveness to the view.

Traction Power Substations

Resource Change under the Project

The TPSS would be constructed outside the viewsheds within KOP 7. As a result, no new visual elements would be introduced and no resource change would occur under this option.

Viewer Response

Again, under this option, construction of the TPSS housings would not occur within KOP 7. As a result, no new visual elements would be introduced and no viewer response would occur.

Maintenance and Storage Facilities

Resource Change under the Project

The proposed MSF siting locations occur outside the viewsheds within KOP 7. As a result, no new visual elements would be introduced and no resource change would occur.

Viewer Response

Again, as mentioned, construction of an MSF would not occur within KOP 7. As a result, no new visual elements would be introduced and no viewer response would occur.

Avoidance, Minimization, and Mitigation Measures

No mitigation measures are required under either the 7th Street Alternative or the 9th Street Alternatives with or without the Grand Avenue extension because none of those alternatives would substantially alter the visual character of the Project viewshed. However, avoidance and minimization measures and other best management practices are suggested below to ensure that Project design components are built with sensitivity to the visual environment. Notwithstanding the moderate to moderately high visual quality found along the Project alignment, no effects/impacts on visual resources are expected to occur that would be considered adverse/significant under NEPA/CEQA. The Project improvements would expand existing public transportation facilities on selected local streets by providing an updated, but limited version of the extensive streetcar system that once crisscrossed downtown during the first half of the twentieth century (Figure 11). The primary Project components—streetcar platforms, track, and new paving—would be constructed at or near street level and, consequently, would not obscure views. In addition, the OCS system would be supported either by a contact wire with a span wire between two poles perpendicular to the streetcar track or by a contact wire supported from cantilever arms on a single catenary pole. Both would be designed to be consistent with specific downtown design contexts (e.g., Historic Downtown Los Angeles Design Guidelines, Figueroa Corridor Streetscape Project, and Broadway Streetscape Master Plan). Design and installation of the OCS poles would be consistent with the surrounding design context. Another option previously under consideration but now deemed infeasible was to affix the OCS wires to eyehooks attached to adjacent non-historic buildings, per practice downtown during the first half of the twentieth century (Figure 12).

Figure 11. Streetcar and Overhead Contact System, Broadway at 9th Street, Looking North. Circa 1937

Photo shows both the presence of large streetcars in the center of the street and the then-prevailing overhead streetcar electrification system, which was suspended from building walls. Source: Los Angeles Public Library, Herman Schultheis Photo Collection.

As previously discussed, some mature trees, as well as younger trees (with trunk diameters of 5 inches or less) may have the potential to be trimmed or removed. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. Replacement trees would be placed as near their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The project's compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy would ensure that any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios.

Figure 12. Streetcar and Overhead Contact System, West 9th Street at Hill Street, Looking East. Circa 1937.

Photo shows the streetcar system along both 9th and Hill Streets and the overhead electrification system. Source: Los Angeles Public Library, Herman Schultheis Photo Collection

Construction of the TPSS and MSF buildings would call for placing structures on private property outside the public right-of-way. Although construction of the MSF may involve a greater level of disruption on a temporary basis than the tracks or platforms for streetcar stops (e.g., excavation; soil remediation, if necessary; street closures; construction staging areas; traffic control; utility issues), both support structures, as well as all proposed streetcar design elements, would be designed in accordance with the design guidelines set forth in the *Historic Downtown Los Angeles Design Guidelines* and *Downtown Design Guide* to fit into and complement the surrounding neighborhood. Thus, in consideration of the surrounding design context, the architectural treatment of the MSF building would be appropriate with respect to scale, proportion, detail, materials, texture, articulation, and color. Additionally, the MSF facility would also provide a continuous landscaped parkway next to the curb and would line the property with an attractive façade (no chain link or barbed wire) (City of Los Angeles, 2009).

Similarly, all TPSS structures would be designed to minimize their presence in visual terms. Where the site and design allow, they would incorporate setbacks from adjoining street frontages, screening, and/or an architectural treatment that would be appropriate to the design setting visible from the public right-of-way at street level. Should a TPSS be located within the public right-of-way, it would be designed in conformance with the "Los Angeles Aboveground Facility" regulations contained in Section 62.08 of the Los Angeles Municipal Code. Substations could be prefabricated in metal boxes or built in place in a small building. The substations would be small in size (i.e., 11 feet tall or less) and given an architectural design treatment that would be compatible with adjacent architecturally/historically significant buildings. Through adherence to pertinent downtown design guidelines (such as HDLADG and DDG), and the avoidance and minimization measures regarding the design and placement of the TPSS buildings, adverse effects/impacts on visual resources would be avoided or substantially minimized. The effects/impacts would be less than significant.

The Project components proposed under the build alternatives would not have the potential to result in significant shade/shadow impacts on shade-sensitive viewers at any one of the potential locations currently under consideration. MSF structures do not possess shade-/shadow-casting characteristics (i.e., height, bulk, density of built structural elements) that could adversely affect shade-/shadow-sensitive viewers. The largest building proposed as part of the MSF would not have an envelope that would be more than 25 feet high, thereby providing opportunities to provide open space for adjoining shade-sensitive uses. Thus, the MSF would not have the potential to significantly affect nearby shade-sensitive viewers, such as residents, because most downtown residents typically occupy units in multi-story buildings in which the lower floors are devoted to commercial uses rather than housing.

Other Project-related buildings, such as the TPSS buildings, would also be designed to be compatible with their design settings rather than prefabricated building units. By virtue of their low height (approximately 11 feet), massing, and siting, the TPSS buildings would not possess architectural design characteristics that would cast shade/shadow on shade-sensitive viewing groups.

All Project engineering and construction would be completed in conformance with applicable City, state, and federal regulations and standards, including, but not limited to, the Los Angeles Municipal Code, Noise Ordinance, Historic Downtown Los Angeles Design Guidelines, Downtown Design Guide, Section 112.05; *LADOT Traffic Control Handbook and Traffic Manual*; California Public Utilities Commission regulations; California Building Code; American Railway Engineering and Maintenance of Way Association Standards; and national stormwater pollution discharge regulations. Although such standard design minimization measures would be incorporated as part of the Project and normally would be enough to ensure that visual resource effects/impacts would be avoided (e.g., through conformance with all applicable laws, regulations, ordinances, and formally adopted city standards as well as special district master plans, such as the BSMP), to ensure that adverse effects on visual character and quality under NEPA and significant impacts under CEQA would be avoided, the avoidance and minimization measures recommended in this section would ensure that Project design components would be built with sensitivity to the visual environment.

Temporary construction fencing would be placed along the periphery of active construction areas to screen as much of the construction activity as possible from view at the street level. To minimize views of stockpiled materials and idle construction equipment in staging areas, as well as visual clutter and disorder, Project construction staging areas would be enclosed or screened from view at the street level with appropriate screening materials. The contractor would provide daily visual inspections to ensure that the immediate surroundings of the construction staging areas are free from construction-related clutter and maintain the areas in a clean and orderly manner throughout the construction period. In compliance with the Los Angeles Municipal Code, any graffiti would be removed from the construction site and staging areas within 24 hours, where possible. Temporary changes to views as a result of construction-period activities, such as excavating, pouring concrete, paving, or installing streetcar electrification systems, are not considered adverse/significant. Such activities are simply larger scale expressions of public works activities that have commonly occurred along downtown streets over the years and are expected to be a part of the related downtown improvement projects, including the Figueroa Corridor Streetscape Project and BSMP. Construction would occur in stages, sequentially, or in a leap-frog manner along affected streets to avoid full street closures. As a result, and because construction-period activities typically call for construction at or near street level and do not involve erecting design features with the potential to significantly obscure views of visual resources (e.g., historic buildings), standard best management practices and the avoidance and minimization measures would be adequate with respect to avoiding adverse effects/impacts. Should construction activities occur during nighttime hours, lighting would be directed away from surrounding sensitive land uses and toward the specific location intended for illumination. Lighting associated with construction activities and security purposes would be shielded to minimize glare and spill light around sensitive land uses in the surrounding area.

Cumulative Effects

In the context of the list of related projects, those that could contribute to a cumulative visual impact are limited to those within the sightlines of the Project alignment under the build alternatives. These include the following 50 cumulative projects (the numbers correspond to the numbering found on the related projects list/figure):

Map No. (Figure 2-5)	Project Name	Location	Description	Size
3	Vibiana Lofts	225 S Los Angeles Street	Condominiums Retail	300 units 3,400 sf
4	Northeast Tower	215 W 9th Street	Condominiums Retail	210 units 9,000 sf
5	Amacon Project	1133 S Hope Street	Condominiums Restaurant	159 units 6,827 sf
6	Mixed-Use Redevelopment Project	745 S Spring Street	Condominiums Retail	247 units 10,675 sf
7	5th & Olive	427 W. 5th Street	Apartments Restaurant	615 units 16,309 sf
8	11th & Hill Project	1115 S Hill Street	Condominiums Restaurant	172 units 6,850 sf
10	8th/Hope/Grand Project	609 W 8th Street	Condominiums Hotel Retail Restaurant	225 units 200 units 30,000 sf 32,000 sf
11	Office Building	1130 W Wilshire Boulevard	n/a	n/a
12	6th & Main Residential Project	601 S Main Street	Condominiums Retail	777 units 20,000 sf

Map No. (Figure 2-5)	Project Name	Location	Description	Size
13	Mixed-Use Project (Herald Examiner)	1111 S Broadway	Apartments Office Retail	391 units 39,725 sf 49,000 sf
17	Restaurant	1036 S Grand Avenue	Restaurant	7,149 sf
18	Residential	459 S Hartford Avenue	Apartments	49 units
19	Mixed-Use	1150 W Wilshire Blvd	Apartments Restaurant	80 units 4,589 sf
20	Mixed-Use	737 S Spring Street	Apartments Pharmacy	320 units 25,000 sf
22	Condominiums	742 S Hartford Avenue	Condominiums	58 units
24	Mixed-Use	340 S Hill Street	Apartments Retail	428 units 6,700 sf
25	Glass Tower Project (Mixed Use)	1050 S Grand Avenue	Condominiums Retail Restaurant	151 units 3,472 sf 2,200 sf
26	Embassy Tower	848 S Grand Avenue	Condominiums Restaurant	420 units 38,500 sf
27	Zen Mixed-Use Project (Kawada Tower)	250 S Hill Street	Condominiums Retail	330 units 12,000 sf
28	Apartments	1027 S Olive Street	Apartments	100 units
29	Mixed-Use	928 S Broadway	Apartments Retail Live/Work Office	662 units 47,700 sf 11,000 sf 34,824 sf
30	Mixed Use	534 S Main Street	Apartments Retail Restaurant	160 units 18,000 sf 7,000 sf
31	Mixed Use	840 S Olive Street	Condominiums Restaurant Retail	303 units 9680 sf 1500 sf
32	Mixed Use	710 S Grand Avenue	Apartments Retail Restaurant	700 units 27,700 sf 5,000 sf
34	Mixed-Use	400 S Broadway	Apartments Retail Bar	430 units 10,000 sf 5,000 sf
36	Mixed-Use	1000 S Grand	Apartments Restaurant	274 units 12,000 sf
42	Wilshire Grand Project	900 W Wilshire Boulevard	Hotel Office Restaurant/Retail	900 units 400,000 sf 45,100 sf
43	Grand Avenue (Parcel M-2 Rev)	237 S Grand Avenue	Apartments Museum Restaurant	265 units 120,000 sf 5,200 sf
44	Metropolis Mixed Use	851 S Francisco Street	Condominiums Hotel Office Retail	836 units 480 units 988,225 sf 46,000 sf

Map No. (Figure 2-5)	Project Name	Location	Description	Size
45	Olympic and Hill Mixed-Use Project	301 W Olympic Boulevard	Apartments Retail Restaurant	300 units 14,500 sf 8,500 sf
46	Mixed-Use	1145 W 7th Street	Condos Apartments Retail	126 units 100 units 7,200 sf
48	940 S Hill MU	940 S Hill Street	Apartments Retail	240 units 14,000 sf
52	Hall of Justice Reuse Project	211 W Temple Street	Other	456,900 sf
53	FIDM 2006 Campus Expansion	939 S Flower Street	School Campus	95,700 sf
57	9th/Olive Mixed Use	860 S Olive Street	Condominiums Retail Restaurant	255 units 18,900 sf 6,000 sf
58	Condominiums	1340 S Olive Street	Condominiums	150 units
59	Manufacturing	800 E 12th Street	Manufacturing	320,497 sf
60	Avant (Mixed-Use Project)	1340 S Figueroa Street	Condominiums Retail Restaurant Spa	273 units 11,000 sf 9,000 sf 10,000 sf
62	Convention Center Modernization & Farmers Field Project	1110 W 11th Street	Stadium Rentable Event Center Meeting Room	76,250 sf 143,500 sf 102,150 sf
63	Bowling Alley	333 S Alameda Street	Bowling Alley	40,800 sf
64	1500 S Figueroa Mixed Use	1500 S Figueroa Street	Apartments Retail	190 units 10,922 sf
65	LA Civic Center Office	150 N Los Angeles Street	Retail Office Child Care	35,000 sf 712,000 sf 2,500 sf
66	Onyx (SPR Mixed Use)	1306 S Hope Street	Apartments Retail	419 units 42,200 sf
67	Mixed-Use Project	1150 S Grand Avenue	Condominiums Retail Restaurant	351 units 12,500 sf 12,500 sf
68	G12 Mixed Use	1200 S Grand Avenue	Apartments Retail	640 units 45,000 sf

Map No. (Figure 2-5)	Project Name	Location	Description	Size
69	Omni Group Tower	888 S Olive Street	Apartment	283 units
70	Regional Connector	1st and Central to 7th and Flower Street	Light Rail	
71	Broadway Streetscape Master Plan	Broadway and 2nd Street to Broadway and Olympic Boulevard	Streetscape	
72	Figueroa Corridor Streetscape Project/ City of Los Angeles 2010 Bicycle Master Plan	Figueroa Street and 7th Street to Figueroa Street and King Boulevard	Streetscape	
73	Federal Courthouse	1st Street and Hill Street	Courthouse	600,000 sf
sf = square feet				
Source: LADOT 2015, Los Angeles Downtown News 2013, and ICF International 2015.				

The area for cumulative impacts on visual resources within the densely developed context of downtown would consist of the viewshed along the streets that make up the 3.8-mile-long Project alignment itself. The area for cumulative visual impacts would also extend out laterally from the alignment to the limits of sightlines, typically a maximum distance of 0.5 mile when topographic features, freeway configurations, or building placements do not further reduce sightline distances. Within this definition, 50 projects with potentially cumulative effects define portions of the northern, southern, and eastern segments of the cumulative viewshed.

None of the build alternatives would result in effects that would be cumulatively significant when combined with other related projects in downtown Los Angeles. Development proposed as part of the related projects calls for the adaptive reuse of existing buildings and new development on vacant land (e.g., typically land that is improved for use as surface parking lots), which will be subject to design regulations and policies governing downtown development. Such policies are premised on protecting visual resources and promoting high-quality, aesthetically attractive new development. These policies were previously summarized in the regulatory framework section of this document (see Chapter 2, Affected Environment).

No scenic vistas or scenic corridors have been identified within the Project viewshed. Views within the viewshed are of medium visual quality, and views of architecturally or historically significant individual buildings—the primary visual resource type within the viewshed—would be preserved. Building placements and, in some instances, topography (e.g., locations on or adjoining Bunker Hill) block many views across downtown. They isolate views in one portion of downtown from other portions of downtown as well as views in one portion of a design district from another. In addition, outside the Historic Core—where there is a significant concentration of architecturally and historically significant buildings and other objects (e.g., certain special sidewalk treatments along Broadway, historic streetlight bases)—the diversity in architectural treatments within most portions of downtown makes it a fairly forgiving and flexible urban design context in which to incorporate new public transit infrastructure and streetscape design elements. Within the Historic Core, specific design guidelines, including the Broadway Streetscape Master Plan and Historic Downtown Los Angeles Design Guidelines, would ensure that all improvements would be designed in a manner that would be appropriate to the design setting. A majority of the design interventions proposed under the build alternatives would occur slightly above, at, or below street level. Therefore, they would not block certain informal views (e.g., either from buildings or outdoors along streets). Also, no significant views were identified in this analysis. Other informal views would typically be acquired by less-sensitive viewing groups (e.g., office workers, pedestrians, commuters). These groups constitute the majority of the viewers within the Project viewshed. Such viewers are considered to be relatively tolerant of design changes within the viewshed.

Visual and scenic resources are limited to groupings of architecturally and historically significant buildings within the Historic Core, other individual buildings outside the Historic Core, and other design elements of secondary importance, such as landscape features, including formally designed landscapes (e.g., Pershing Square, Civic Center) and mature street trees. As previously discussed, some mature trees, as well as younger trees (with trunk diameters of 5 inches or less) may have the potential to be trimmed or removed. City policy requires all tree removals be replaced on a 2:1 basis for street trees and 4:1 basis for protected private property trees. Replacement trees would be placed as near their original locations as possible. Alternative methods and options to removal, such as trimming, would be explored prior to considering potential tree removal. The project's compliance with the City of Los Angeles Tree Preservation Ordinance and Tree Preservation Policy would ensure that any trees slated for removal would be planted at or near their original locations at 2:1 or 4:1 ratios. As a result, no long-term, significant effects/impacts related to street trees are expected. Also, as previously stated, no formal scenic vistas or scenic corridors have been identified or designated within the viewshed. Therefore, the build alternatives would not damage scenic or visual resources or substantially degrade existing visual character or quality.

With the exception of the MSF, the Project components proposed under the build alternatives do not have the potential to result in significant shade/shadow impacts on shade-sensitive viewers in one location because they would not have shade-/shadow-casting characteristics (e.g., height, bulk, density of built structural elements) that could adversely affect shade-/shadow-sensitive viewers. The MSF would not have an envelope that would be more than 25 feet high and would not have the potential to affect shade-sensitive viewers.

Power for the streetcar system would be provided by the TPSS and OCS. There are two potential configurations for the OCS wires. The first configuration would be to support the contact wire with a span wire between two poles perpendicular to the streetcar track. The second configuration would support the contact wire from cantilever arms connected to a single pole. Both of these configurations would use decorative poles consistent with the streetscape along the Project alignment, with the possibility of integrating poles used for street lighting, traffic signals, or traffic signs. Catenary poles would measure 25 to 30 feet tall. They are typically installed at intervals of 100 to 120 feet. Wire heights typically range between 18 and 19 feet. Catenary poles could be designed to incorporate elements of the decorative streetlights or meet design standards for designated streetscapes. Historically, streetcars operated along many of the streets within the viewshed, utilizing a system of poles and overhead wires that was far more extensive than the system proposed under the build alternatives. Also, because the proposed features would be consistent with all design policies governing downtown design districts and with new streetscape elements (e.g., landscaping or street furniture proposed as part of other related projects along both Figueroa Street and Broadway), the build alternatives would not be expected to result in cumulatively significant incremental effects on visual resources or on existing visual character and quality.

The Project features proposed consist of elements at or near street level and, accordingly, do not have the potential to alter views of visual resources substantially. Proposed buildings, such as the MSF and TPSS, would be designed to be compatible with their design settings and would not possess either the massing or height required to cast shade/shadow on shade-sensitive viewing groups. Any nighttime lighting necessary for the operation of the MSF would be directed on site to minimize spill effects and reduce potential visual impacts related to nighttime illumination. Due to the highly urbanized nature throughout the proposed alignment, its surrounding commercial, industrial, retail, and residential land uses, and the varying size of the neighboring buildings and high-rises and residences, the potential addition of nighttime lighting to the two or three story facility, which would replace an existing parking lot, would not introduce a substantial amount of light when compared to existing conditions. Therefore, when considered along with other related projects, none of the build alternatives would be expected to contribute to a cumulatively significant incremental effect on shade-/shadow-sensitive receptors.

This page intentionally left blank.

Chapter 4
Conclusions

None of the build alternatives would result in substantial adverse effects or significant impacts on visual resources. Visual quality would not be diminished under the proposed Project. Rather, along Broadway and at other locations (e.g., along Figueroa Street), Project actions, combined with other local design improvement initiatives (e.g., the Figueroa Corridor Streetscape Project), would most likely improve visual quality slightly through the implementation of consistent paving, landscaping, and streetscape furniture. Significant recognized scenic vistas are not present in the viewshed, and the Project features would not have the potential to obscure or block views of the primary visual resources within the viewshed (i.e., architecturally and historically significant buildings) significantly. Thus, views of architecturally and historically significant buildings would not be adversely affected by Project features, nor would Project features create substantial shade/shadow effects that would have the potential to affect shade-/shadow-sensitive viewers adversely.

The Project does not include the development of natural open space. The streetcar system would be integrated into its design setting with a very minor degree of contrast. In addition, the Project's degree of view obstruction would be very low, given that most of its features would be at street level or slightly above street level, small in terms of mass, and generally non-opaque. In addition, aerial components such as catenary poles and OCS wires would be minimally apparent and would not block informal views. Streetcar platforms, shelters, and other Project features would not significantly alter ambient illumination levels or result in impacts on surrounding uses related to spill light. The streetcar trains would be lighted in a manner that would minimize the potential for spill light. They would not generate more nighttime light than existing downtown buses.

The FHWA aesthetic guidelines mandate that a qualitative aesthetic approach be taken to mitigate for the loss of visual quality in the study area. The Project's build alternatives fulfill these guidelines because no loss of visual quality would occur within the Project viewshed. The Project would be implemented in adherence to pertinent state and federal standards and regulations governing the engineering and construction of street railroad projects as well as specific downtown design guidance, which pertains to segments of the Project alignment. The Project would incorporate design features that would ensure the protection of visual quality. Because of the absence of significant visual impacts/effects, no mitigation measures are proposed in this document. Adherence to the avoidance and minimization measures outlined above would ensure that Project design components would be built with sensitivity to the visual environment.

This page intentionally left blank.

Chapter 5

References

California Department of Transportation. 2011. *Scenic Highways and Eligible Scenic Highways List, Los Angeles County, California*. Available: <http://www.dot.ca.gov/hq/LandArch/sceniccahisys4.htm>. Accessed: February 2013.

———. 2012. *Standard Environmental Reference.* Chapter 27, Visual and Aesthetic Review. Available: <http://www.dot.ca.gov/ser/vol1/sec3/community/ch27via/chap27via.htm>. Accessed: February 2013.

———. 2013. Q*uestionnaire to Determine Visual Impact Assessment (VIA) Level*. Landscape Architecture Division. Available: <http://www.dot.ca.gov/hq/LandArch/via_outlines/index.htm>. Accessed: June 3, 2013.

Chattel Architecture, Planning, and Preservation, Inc. 2010. *Supplemental Historic Property Survey Report for Broadway Streetscape Master Plan, City of Los Angeles*. August.

City of Los Angeles. 2004. *Los Angeles Municipal Code*. Chapter IV, Article 1, Section 41.40. Construction Activities. Available: <http://lacodes.lacity.org/NXT/gateway.dll?f=templates&fn=default.htm>. Accessed: September 2012.

———. 2006. *CEQA Thresholds Guide*. Available: <http://environmentla.org/programs/thesholdsguide.htm>. Accessed: March 2013

———. 2008. *Walkability Checklist for Entitlement Review*. Urban Design Studio of the Department of Planning. Los Angeles. November. Available: <http://www.urbandesignla.com/resources/LAwalkabilityChecklist.php>. Accessed: March 2013.

———. 2009. *Downtown Design Guide*. Urban Design Studio of the Department of Planning. Los Angeles. June 15.

———. 2009. *Los Angeles General Plan Framework and Central City Community Plan*. Los Angeles.

———. 2011. *Citywide Design Guidelines* (for Commercial Properties). Los Angeles. May.

———. 2013. *Broadway Streetscape Master Plan*. Los Angeles. Available: <http://cityplanning.lacity.org/code-studies/broadwaysp/>. Accessed: February 2013.

Federal Highway Administration. 1981. *Visual Impact Assessment for Highway Projects*. Office of Environmental Policy, U.S. Department of Transportation. Washington D.C. March.

———. 1988. *Visual Impact Assessment for Highway Projects*. Available: <www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactsAssmt.pdf>. Accessed: September 2012.

Los Angeles Conservancy and Architectural Resources Group, Inc. 2002. *Historic Downtown Los Angeles Design Guidelines*. July.

MyFigueroa. 2013. *MyFigueroa Streetscape Project*. Community Meeting. April 9. Available: <http://www.myfigueroa.com/about>. Accessed: April 2013.

This page intentionally left blank.

Chapter 6
Preparers

Carson Anderson, Architectural Historian/Environmental Planner. M.A., Architectural History, University of Virginia; B.A., Architecture, College of Environmental Design, University of California at Berkeley.

Andrew Johnson, Environmental Planner. M.A. Public Policy, University of Southern California; B.A. Business/Spanish, Pepperdine University.

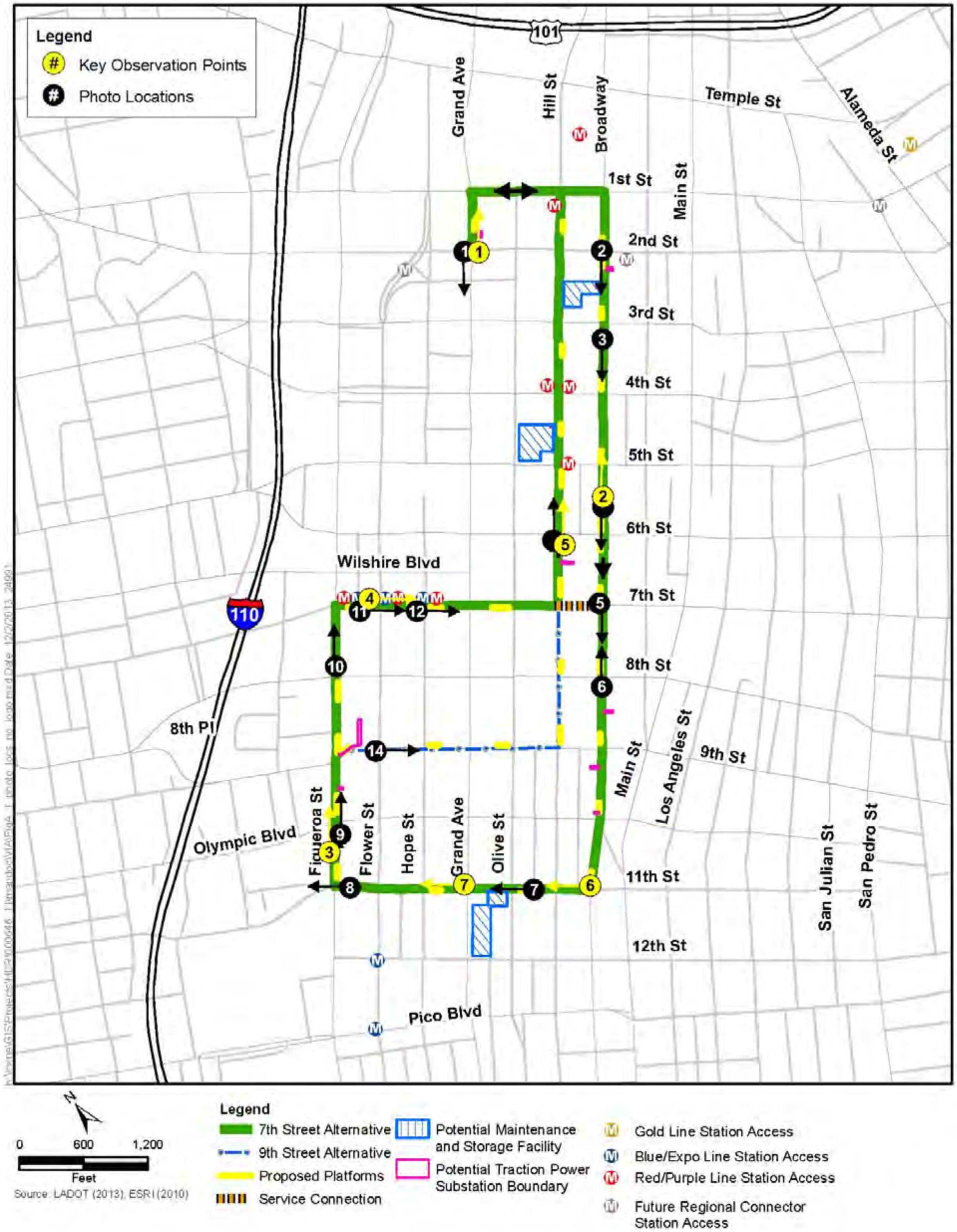
This page intentionally left blank.

Appendix A

Photos of Representative Views

This page intentionally left blank.

Figure A-1. Photo Locations and Vantages in Downtown Los Angeles for Restoration of Historic Streetcar Service in Downtown Los Angeles Project



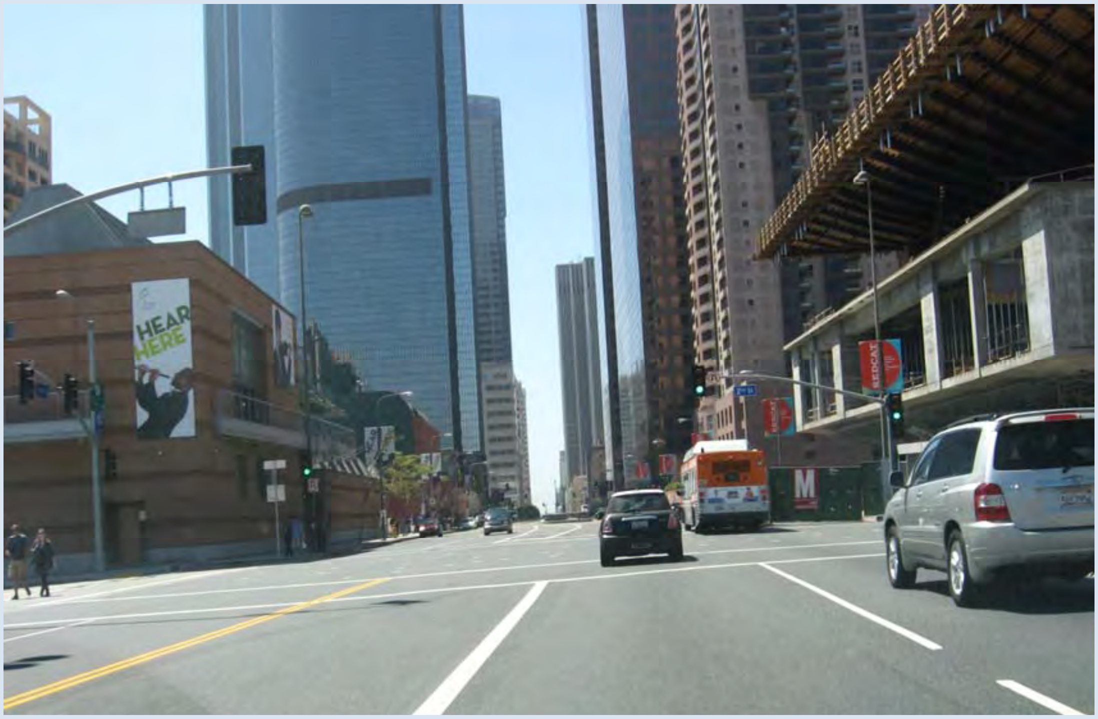


Photo 1. Grand Avenue at West 2nd Street, Looking South

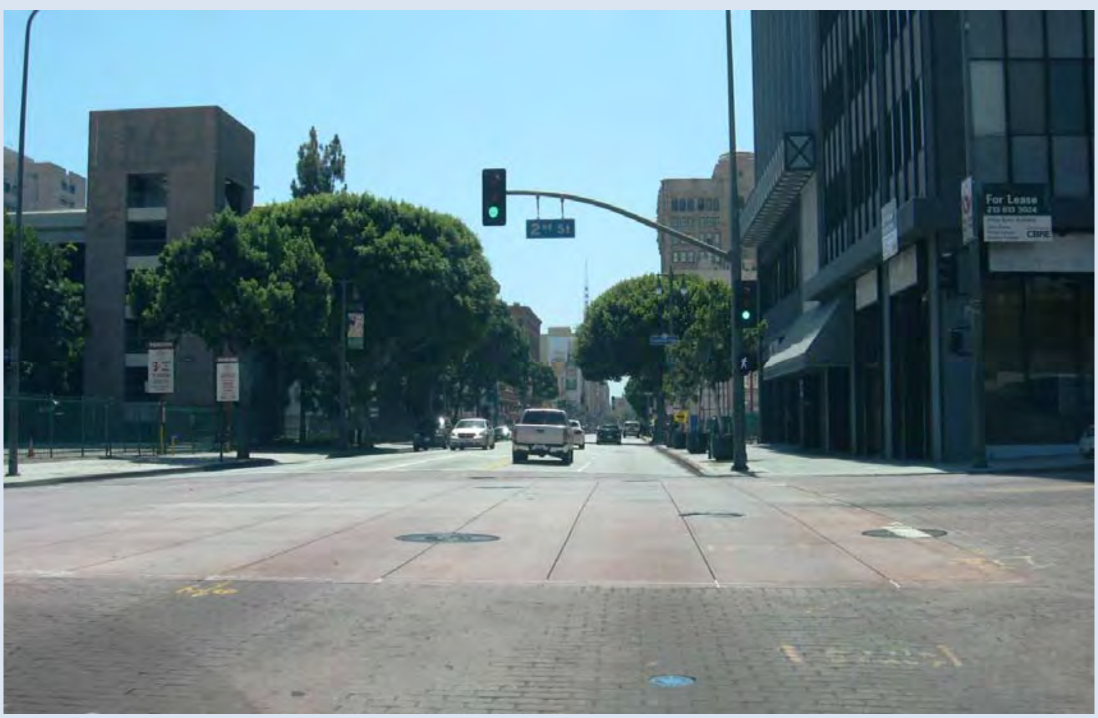


Photo 2. Broadway at West 2nd Street, Looking South

Photo 3. Broadway, Approaching West 4th Street, Looking South

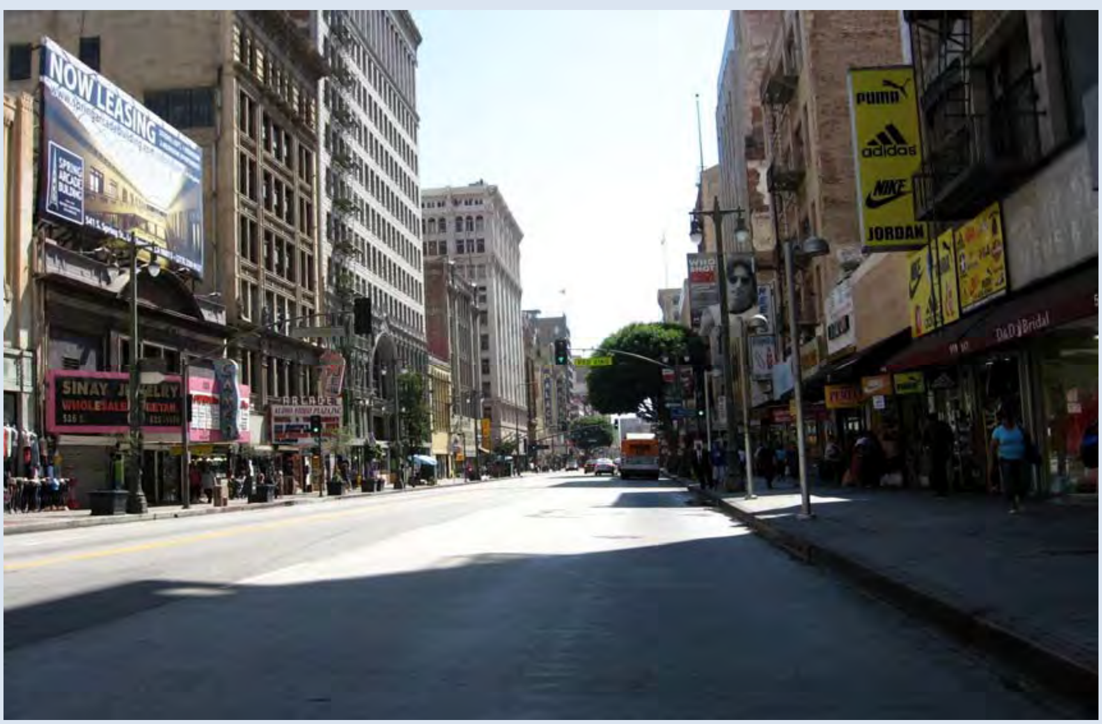


Photo 4. Broadway, Mid-block between West 5th and 6th Streets, Looking South

Photo 5. Broadway at West 7th Street, Looking South

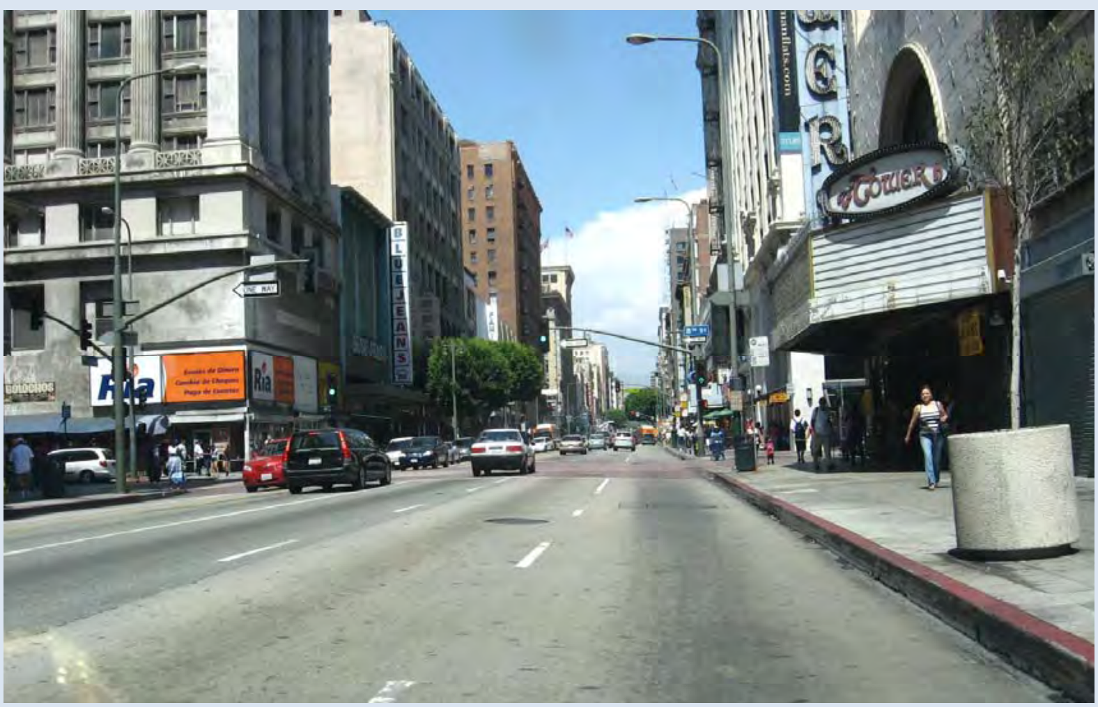


Photo 6. Broadway Just South of West 8th Street, Looking North

Photo 7. West 11th Street, Approaching Olive Street, Looking West

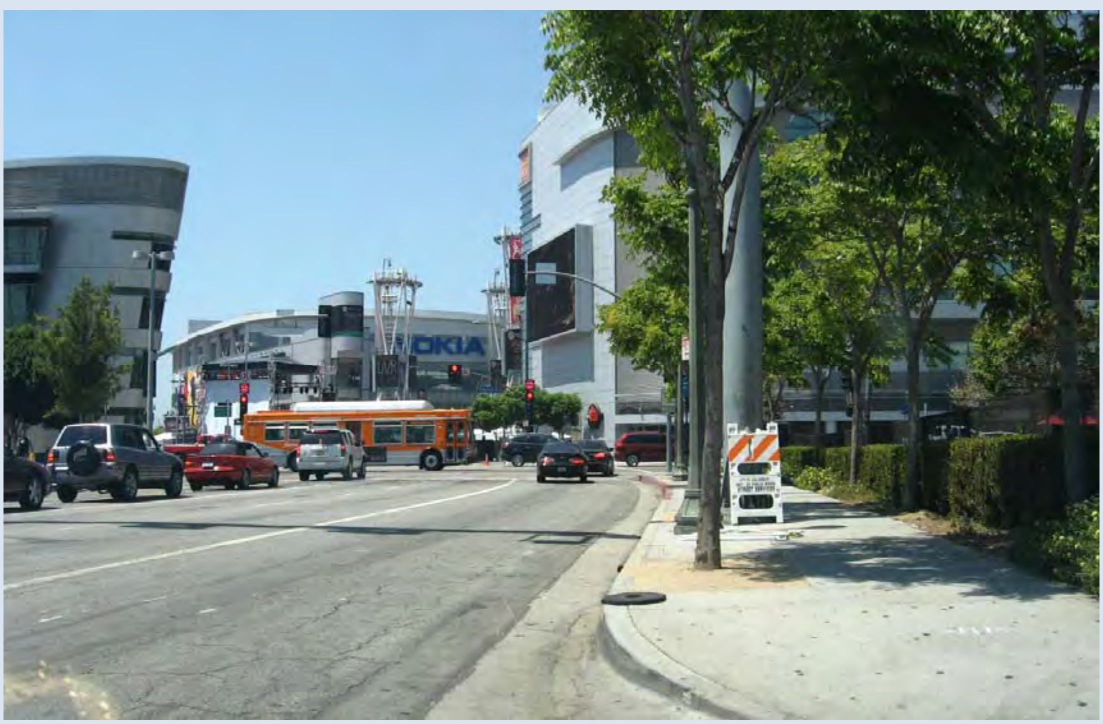


Photo 8. West 11th Street, Approaching Figueroa Street, Looking West

Photo 9. Figueroa Street at Olympic Boulevard, Looking North

Photo 10. Figueroa Street, Looking North to West 7th Street

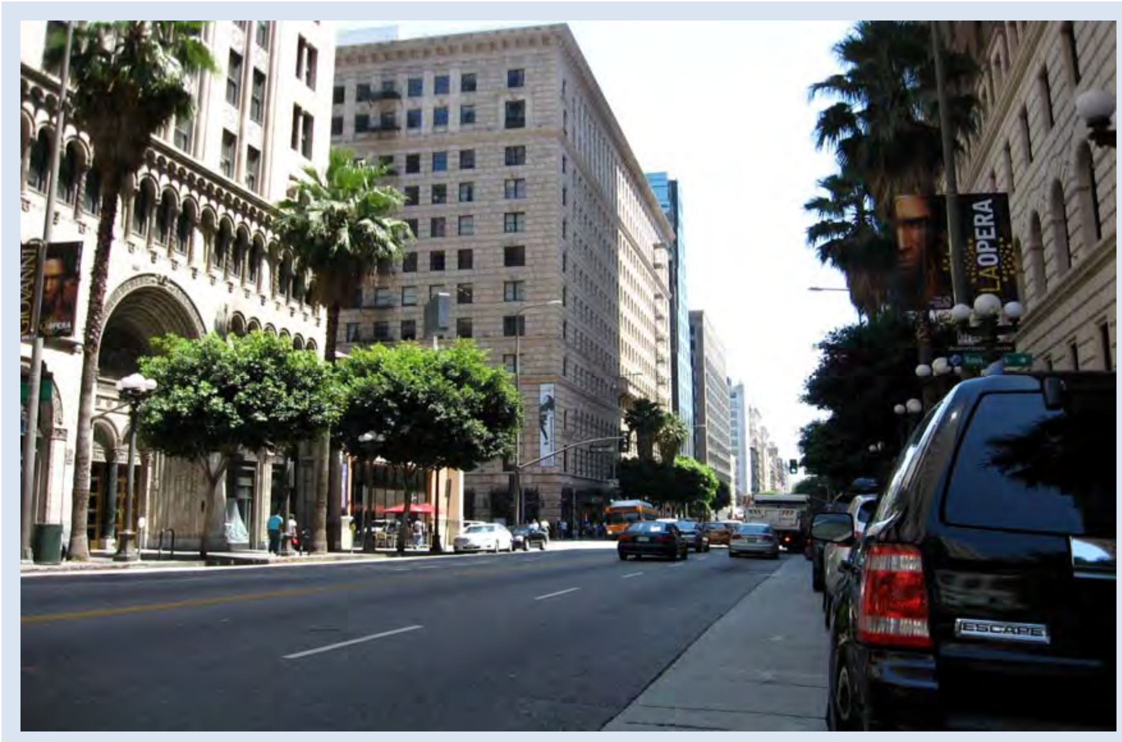


Photo 11. West 7th Street, Approaching Flower Street, Looking East

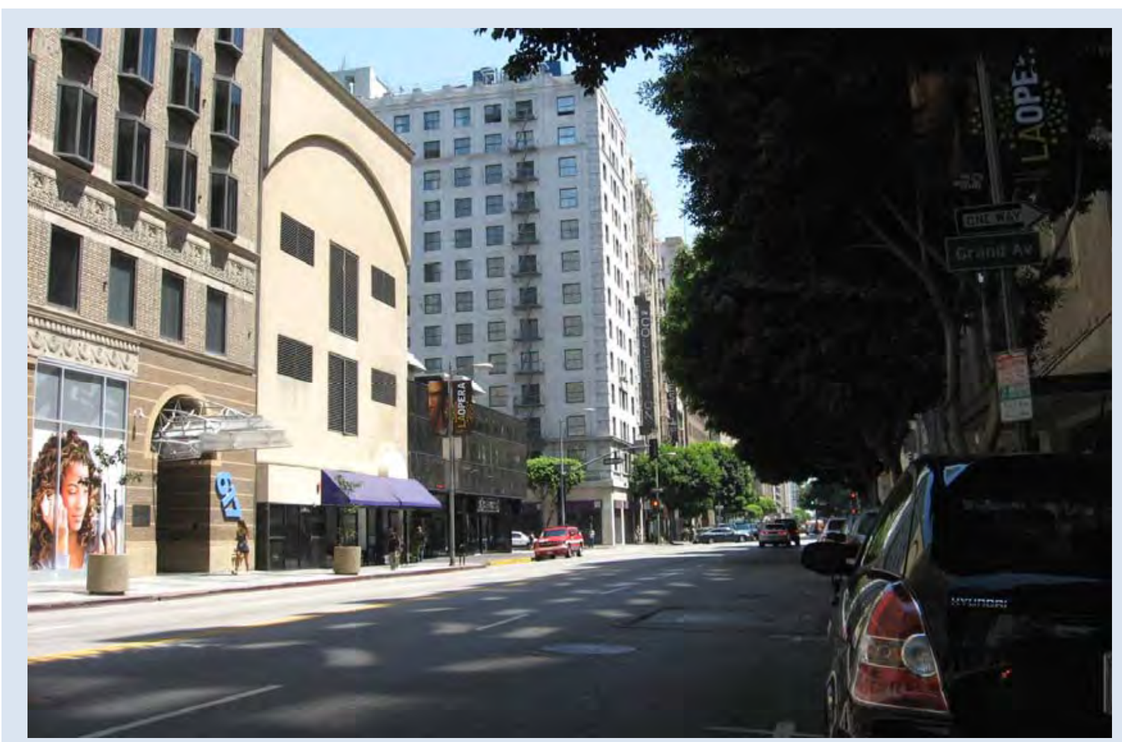


Photo 12. West 7th Street, Approaching Grand Avenue, Looking East

Photo 13. Hill Street at West 6th Street, Looking North

Photo 14. West 9th Street at Flower Street, Looking East

Appendix E
Air Quality and Climate Change Assessment Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

Appendix E

Air Quality and Climate Change Assessment Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

AIR QUALITY AND CLIMATE CHANGE ASSESSMENT REPORT FOR THE RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

PREPARED FOR:

City of Los Angeles Department of Public Works
Bureau of Engineering
1149 South Broadway, Suite 700
Los Angeles, CA 90015-2213

PREPARED BY:

ICF International
601 West 5th Street, Suite 900
Los Angeles, CA 90071
Contact: David Ernst
617-250-4248

April 2016

ICF INTERNATIONAL

ICF International. 2016. *Air Quality and Climate Change Assessment Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles.* April. (ICF 00646.11.) Los Angeles, CA. Prepared for City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

Summary **S-1**

Introduction and Project Description **1**

Project Description 1

Project Alternatives 1

Alternative 1 – No Project Alternative 2

Alternative 2 – 7th Street with Grand Avenue Extension 2

Alternative 3 – 7th Street without Grand Avenue Extension 2

Alternative 4 – 9th Street with Grand Avenue Extension 2

Alternative 5 – 9th Street without Grand Avenue Extension 2

Elements of the Streetcar Alternatives 7

Vehicles 7

Platforms 7

Support Facilities 7

Overhead Contact System 7

Traction Power Substations 8

Maintenance and Storage Facility 8

Signaling 9

Potential Layover Locations 9

Construction Activities 9

Description of Relevant Air Pollutants **11**

Criteria Air Pollutants 11

Toxic Air Contaminants/Mobile-Source Air Toxics 13

Greenhouse Gases 14

Regulatory Setting **17**

Federal 17

Federal Clean Air Statutes 17

State 23

California Clean Air Act 23

Local 31

South Coast Air Quality Management District 31

Southern California Association of Governments 34

City of Los Angeles 34

Environmental Setting **35**

Existing Conditions 35

Regional Context ... 35
State Greenhouse Gas Emissions ... 38
Significance Thresholds ... 41
State and SCAQMD ... 41
Construction Emissions ... 41
Operational Emissions ... 42
Toxic Air Contaminants ... 42
Climate Change/Greenhouse Gas Emissions ... 42
City of Los Angeles ... 44
Construction Emissions ... 44
Operational Emissions ... 45
Toxic Air Contaminants ... 45
Climate Change/Greenhouse Gas Emissions ... 45
Methodology ... 47
Transportation Conformity ... 47
Regional Conformity ... 47
Project-Level Conformity ... 47
Criteria Pollutants, TAC, and GHG Emissions ... 50
Construction ... 50
Operations ... 50
Impact Analysis ... 57
Construction Impacts ... 57
Regional Construction Impacts ... 57
Local Construction Impacts ... 57
Operational Impacts ... 58
Regional Operations Impacts ... 58
Local Operational Impacts ... 61
Mitigation Measures ... 68
Level of Significance after Mitigation ... 69
Project Consistency with Regional AQMP ... 71
Cumulative Impacts ... 73
References Cited ... 75

Appendix A Air Quality Modeling Output

Tables and Figures

Tables

1 Federal and State Ambient Air Quality Standards 18

2 Air Quality Data from Los Angeles – North Main Street Station (ARB 70087, AQS 06-037-1103) 37

3 LA Streetcar Daily Ridership and Auto Travel Reduction Estimates 52

4 Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 53

5 Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 54

6 Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins 55

8 Worst-Case Regional Construction Emissions (pounds per day) 57

9 Worst-Case Localized Construction Emissions, Unmitigated (pounds per day) 58

10 Estimated Change in Passenger Vehicle Emissions due to VMT Reduction during Operations (pounds per day) 60

11 Estimate of Operations-Period Mass Emissions (pounds per day) 61

12 Estimate of Operation-Period Localized Emissions (pounds per day) 61

13 Modeled Maximum Carbon Monoxide Concentrations (ppm) at Receptors in the Vicinity of Affected Intersections during the PM Peak Hour 65

14 Project-related Greenhouse Gas Emissions during Operation under the 2015 plus Project Condition (Metric Tons CO_2e per Year) 68

15 Worst-Case Localized Construction Emissions with Mitigation (pounds per day) 69

Figures

1 Regional Location Map 3

2 Proposed Downtown Los Angeles Streetcar Route 5

3 Milestones 27

Acronyms and Abbreviations

°F	degrees Fahrenheit
$\mu g/m^3$	micrograms per cubic meter
AADT	annual average daily traffic
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
AC	alternating current
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ARB	Air Resources Board
BACT	best available control technology
Basin	South Coast Air Basin
BAU	business-as-usual
C_2F_6	perfluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CCAA	California Clean Air Act
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CF_4	perfluoromethane
CFCs	chlorofluorocarbons
CH_4	methane
City	City of Los Angeles
CO	carbon monoxide
CO Protocol	Transportation Project-Level Carbon Monoxide Protocol
CO_2	carbon dioxide
DASH	Downtown Area Short Hop
DC	direct current
DPM	diesel particulate matter
EIR	environmental impact report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
FR	Federal Register
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
FY	fiscal year
GHG	greenhouse gas
Greenbook	Standard Specification for Public Works Construction
HAPs	hazardous air pollutants

HCFCs	hydrochlorofluorocarbons
HFCs	Hydroflourocarbons
ICF	ICF International
LAMC	Los Angeles Municipal Code
lb	pounds
LCFS	low carbon fuel standard
LOS	level of service
LST	Localized Significance Threshold
MATES III	Multiple Air Toxics Exposure Study III
MDHD	medium- and heavy-duty vehicle
Metro	Los Angeles County Metropolitan Transportation Authority
mg/m^3	milligrams per cubic meter
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
mph	miles per hour
MPO	metropolitan planning organizations
MSAT	mobile source air toxic
MSF	maintenance and storage facility
$MTCO_2e$	carbon dioxide equivalent
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
O_3	ozone
OCS	overhead contact system
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PFCs	perfluorocarbons
PM10	particulate matter with a diameter of 10 microns or less
PM2.5	particulate matter with a diameter of 2.5 microns or less
PMT	person miles traveled
POAQC	project of air quality concern
ppb	parts per billion
ppm	parts per million
Project	Restoration of Historic Streetcar Service in Downtown Los Angeles
Reporting Rule	Greenhouse Gas Reporting Rule
ROG	reactive organic gases
RTP	regional transportation plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride

SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	Source Receptor Area
STOPS	Simplified Trips-On-Project Software
TAC	toxic air contaminant
TIP	transportation improvement program
TPSS	traction power substation
V/C	volume to capacity
VMT	vehicle miles traveled
VOC	volatile organic compounds
WCI	Western Climate Initiative

Summary

This report provides an analysis of potential air quality and climate change impacts related to the Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). All analyses have been conducted to comply with the South Coast Air Quality Management District (SCAQMD) requirements for air quality and climate change assessments and satisfy California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Transportation Conformity Determination requirements. The analyses findings are as follows:

- Project emissions during construction and operations would not exceed SCAQMD regional and localized mass emissions thresholds.
- The Project would satisfy the federal Clean Air Act requirement to demonstrate transportation conformity.
- The Project's carbon monoxide (CO) emissions during long-term project operations would not create any new or exacerbate any existing CO hot spots.
- The Project's local particulate matter emissions during long-term project operations would not be significant, as determined by the Southern California Association of Governments (SCAG) Transportation Conformity Working Group.
- The Project would meet all Federal Transit Administration (FTA) Transportation Conformity Determination requirements.
- The Project would be consistent with air quality policies set forth by SCAQMD and SCAG, as presented in the region's most recent Air Quality Management Plan.
- The Project would not conflict with the state's goals of reducing greenhouse gas emissions to 1990 levels by 2020.
- The Project would not result in a cumulative air quality impact.

This page intentionally left blank.

Introduction and Project Description

This chapter describes the proposed Project, including its purpose and need, design elements, location, and construction activities.

The lead agency for the Project under CEQA is the City of Los Angeles (City). Funding from the FTA is being sought, and therefore documentation requirements under NEPA are also being analyzed.

ICF International (ICF) was retained by HDR Engineering (HDR is a contractor to the Los Angeles County Metropolitan Transportation Authority [Metro] and is assisting the City with preparation of its environmental impact report [EIR]) to evaluate the potential air quality impacts that may occur as a result of construction and operation of the Project in downtown Los Angeles. The project route would be 3.8 miles long (see *Project Description*).

The objective of this report is to evaluate the Project's potential effect on regional and local air quality as well as its potential effect on climate change. The report includes an evaluation of project criteria pollutant, toxic air contaminant (TAC), and greenhouse gas (GHG) emissions that would occur during short-term construction and long-term operations as well as discussions of applicable federal, state, and local air quality and climate change regulations.

Project Description

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along an up to 3.8-mile route. The project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center.

Figure 1 depicts the regional location of the Project. Figure 2 shows the Project's routing within downtown Los Angeles.

The track and roadway configuration would allow for a mixed flow of vehicles and a fleet of electrically powered streetcars. Power to the streetcar vehicles would be provided by approximately five traction power substations (TPSSs) and an overhead contact system (OCS). A maintenance and storage facility (MSF) site would also be constructed as part of the Project.

Project Alternatives

Five project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative.

Alternative 1 – No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the project study area that would remain if the proposed Project would not occur.

Alternative 2 – 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

Alternative 3 – 7th Street without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

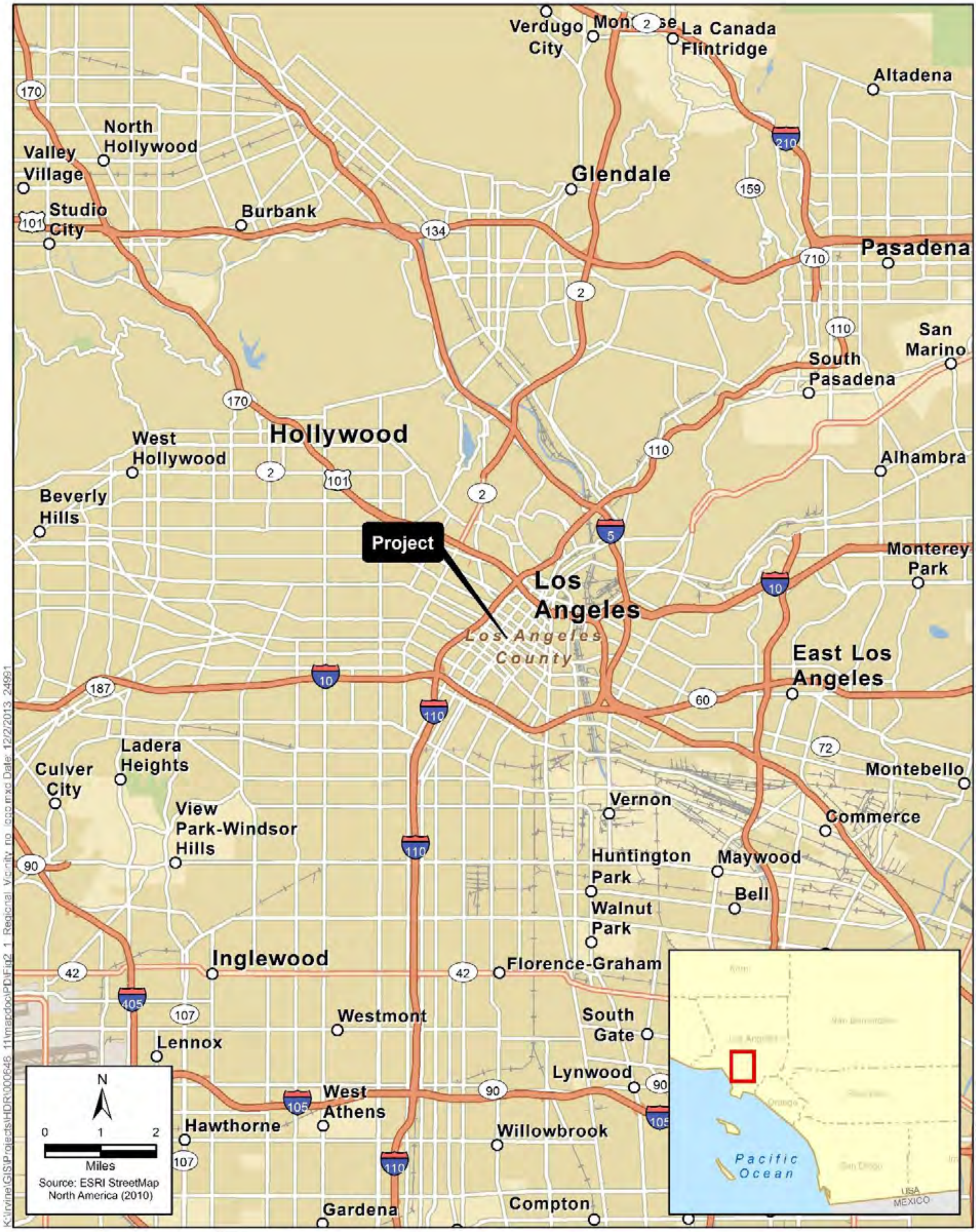
Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

Alternative 5 – 9th Street without Grand Avenue Extension

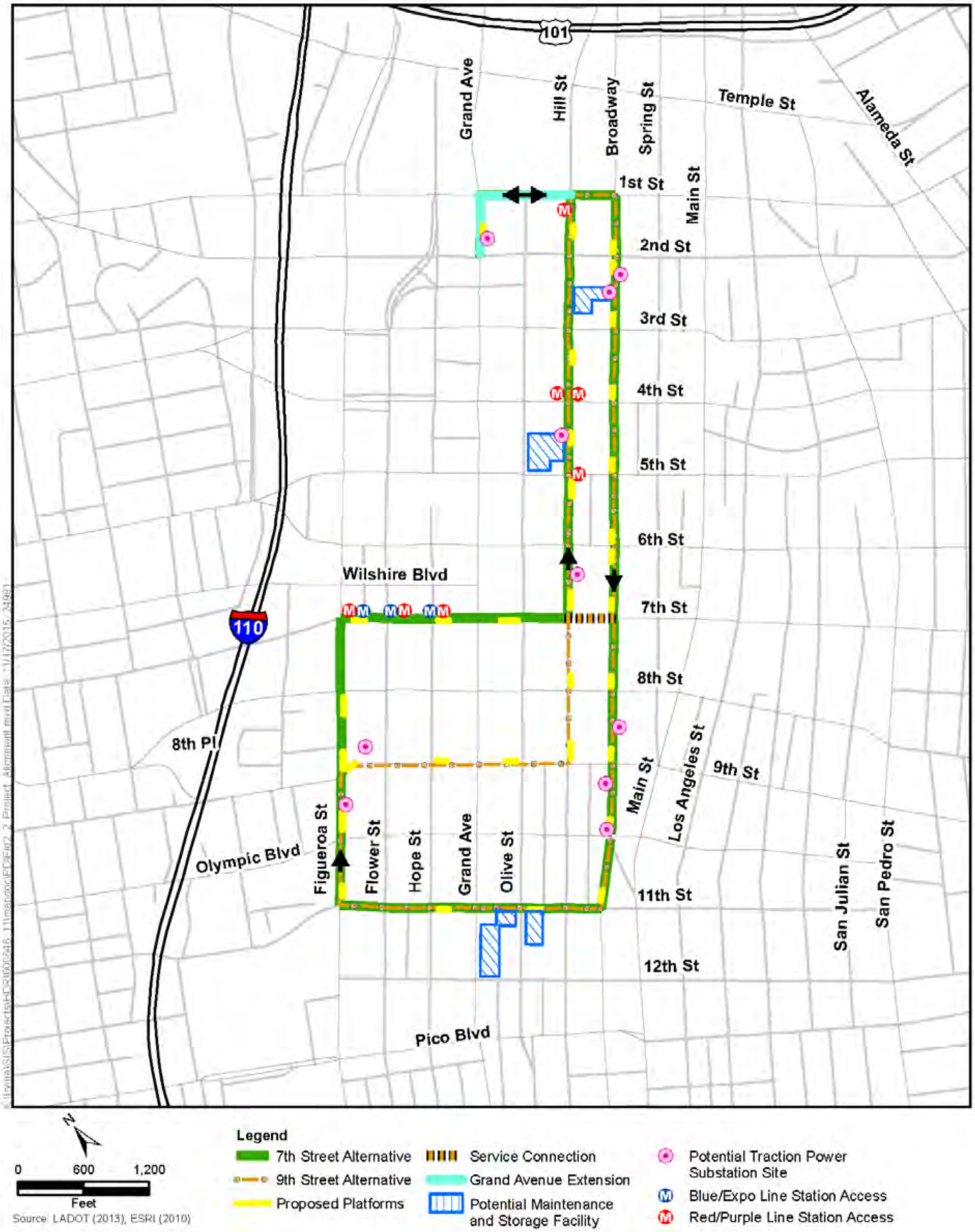
Alternative 5 would follow the same alignment as Alternative 3, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

Figure 1. Regional Location Map



This page intentionally left blank.

Figure 2. Proposed Downtown Los Angeles Streetcar Route



This page intentionally left blank.

Elements of the Streetcar Alternatives

A brief overview of the elements common to all build alternatives of the Project is presented below.

Vehicles

The Project's operating plan calls for 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate on the system. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 80 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. Examples of similar streetcars can be found in Portland, Oregon; both Tacoma and Seattle, Washington; Tucson, Arizona; Dallas, Texas; Atlanta, Georgia; and Charlotte, North Carolina. The streetcars would be designed with low floors to be compliant with the Americans with Disabilities Act (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 miles per hour (mph) on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks.

Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by buses operated by Metro, LADOT Downtown Area Short Hop (DASH), and other regional operators. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to shorter lengths. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

Support Facilities

Overhead Contact System

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site specific and be made based upon engineering design and aesthetic considerations. Either of these configurations could use decorative poles chosen to be consistent with the streetscape along the project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or 7th Streets, 9th or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide direct current (DC) power for the streetcars; the final number and placement will be determined by further project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial alternating current (AC) power to 750-volt DC power for the streetcars.

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible.

Maintenance and Storage Facility

The Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

Four sites are currently being considered as a potential location for the MSF: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets. All four candidate sites are currently being used as parking lots. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for the MSF site would be required. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and secure storage of streetcar vehicles.

Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. "Line-of-sight" operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary where the streetcar would require a special traffic signal phase to maneuver so as to avoid conflicts with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have separate transit signals. Where they are needed, operation of transit signals would be separated from the normal traffic signals in order to not confuse the general public.

Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue north of 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles would have operator cabs on both ends of the cars so that they would be able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential second layover sites. Should Alternative 3 or 5 be ultimately selected, two of these locations may be needed. At each of these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

Construction Activities

Construction activities associated with the Project would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include: (a) pavement removal, (b) utility relocation, (c) excavation, (d) construction of track drains, (e) installation of concrete track slab and rails, (f) construction of station platforms, (g) installation of special track work units, (h) reconstruction of ramps and sidewalks, (i) paving, and (j) striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations.

Laydown and storage area(s) for construction would be established near the project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have currently been identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th and 9th Streets. These should be regarded as example sites; other locations within the study area may become available and could also be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the project alignment.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with Los Angeles Municipal Code (LAMC) 41.40(a). To expedite construction, certain construction activities may be permitted to occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. Construction activities will be required to follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; *California Manual on Uniform Traffic Control Devices*; and all City bureaus' design manuals, special provisions, and standard plans, including the latest *Standard Specification for Public Works Construction* (Greenbook); the LABOE's Brown Book; the *Work Area Traffic Control Handbook*; and any FTA requirements.

Description of Relevant Air Pollutants

Air pollutants regulated by federal and state law include criteria air pollutants, TACs/mobile source air toxics (MSATs), and GHG. A description of each is provided below.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. Criteria air pollutants are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly and include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter with a diameter of 10 microns or less (PM10) and particulate matter with a diameter of 2.5 microns or less (PM2.5). Reactive organic gases (ROG) and oxides of nitrogen (NO_X) are precursor pollutants that form ozone (O_3). Presented below is a description of each of the primary and precursor pollutants and their known health effects.

Carbon Monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon-based fuels, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is that it replaces oxygen in the blood, which results in deprivation of oxygen to body cells and tissues, and ultimately leads to death (SCAQMD 2005).

Reactive Organic Gases (ROG), or volatile organic compounds (VOC), are compounds made up of carbon chains with attached hydrogen atoms as well as oxygen, chlorine or nitrogen atoms. Internal combustion engines are a major source of hydrocarbon emissions. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants such as O_3(SCAQMD 2005).

Nitrogen Oxides (NO_X) serve as integral participants in the process of photochemical smog production. The two major forms of NO_X are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. NO_X acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen Dioxide (NO_2) is a by-product of fuel combustion. The principal form of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm). NO_2 absorbs light in the blue wavelength; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM10. NO_X are also precursors to the formation of both O_3 and PM2.5 (SCAQMD 2005; SCAQMD 2007).

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. A primary source of SO_2 emissions is from the combustion of high sulfur-content coal. Gasoline and natural gas have a very low sulfur content and hence do not release significant quantities of SO_2 (SCAQMD 2005).

Particulate Matter (PM) consists of suspended, finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized. Inhalable coarse particles, or PM10, include the particulate matter with a diameter of 10 microns (10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM2.5, have a diameter of 2.5 microns (i.e., 2.5 millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. Both PM10 and PM2.5 may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems (SCAQMD 2005).

Fugitive dust is airborne PM that does not pass through a stack, vent, duct, or similar opening. Fugitive dust primarily poses two public health and safety concerns. The first concern is that of respiratory problems attributable to the particulates suspended in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions.[1] Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (much like sandblasting) (SCAQMD 2005).

Ozone (O_3), or smog, is one of a number of substances called photochemical oxidants that are formed when ROG and NO_X (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the South Coast Air Basin (Basin), and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Additionally, O_3 has been tied to crop damage, typically in the form of stunted growth and premature death. O_3 can also act as a corrosive, resulting in property damage such as the degradation of rubber products (SCAQMD 2005).

Lead (Pb) a metal, and its compounds, negatively affect human health. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and a lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death. It appears that there are no direct effects of Pb on the respiratory system. Pb accumulates in bone from an early-age from environmental exposure, and elevated blood Pb levels can occur because of the breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (loss of bone density and breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb through previous environmental Pb exposure of their mothers (SCAQMD 2005).

[1] Wind-blown dust is typically more of a concern in rural areas, not in urban areas such as downtown Los Angeles.

Toxic Air Contaminants/Mobile-Source Air Toxics

Although Ambient Air Quality Standards (AAQS) exist for criteria pollutants, no ambient standards exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (ARB) has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). TACs are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants.

Air toxics are generated by a number of sources, including: stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) non-carcinogenic, and long-term (chronic) non-carcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk.

The federal Clean Air Act (CAA) made controlling air toxic emissions a national priority, by which Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics. These substances are also known as hazardous air pollutants (HAPs). In EPA's latest rule on the control of hazardous air pollutants from mobile sources (72 Federal Register [FR] 8430), it identified a group of 93 compounds emitted from mobile sources that are listed in its Integrated Risk Information System. From this list of 93 compounds, EPA has identified seven as priority MSATs. The high regulation priority of these seven MSATs was based on EPA's 1999 National Air Toxics Assessment.

- Acrolein
- Benzene
- 1,3-Butadiene
- Diesel particulate matter/diesel exhaust organic gases
- Formaldehyde
- Naphthalene
- Polycyclic organic matter

The 2007 rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to a Federal Highway Administration (FHWA) analysis using EPA's MOVES2010b model, even if vehicle activity (vehicle miles traveled [VMT]) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emission rate for the priority MSAT is projected for the same time period (FHWA 2012).

Greenhouse Gases

The principal anthropogenic GHGs contributing to global warming are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, including sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), as codified in state law and the State CEQA Guidelines (Health and Safety Code 38505(g); 14 California Code of Regulations 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources.[2] Presented below is a description of each GHG and their known sources.

Carbon Dioxide (CO_2) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle, or dissolved into the oceans, or incorporated into the shells of animals.

Methane (CH_4) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the organismic digestion process, from livestock and from other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide (N_2O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases are synthetic, strong greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases.

- *Chlorofluorocarbons (CFCs)* are greenhouse gases covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are greenhouse gases covered under the 1997 Kyoto Protocol.
- *Perfluorocarbons (PFCs)* are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they are strong greenhouse gases.
- *Sulfur Hexafluoride (SF_6)* is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong greenhouse gas used primarily in electrical transmission and distribution systems as a dielectric agent.[3]

[2] Although water vapor plays a substantive role in the natural greenhouse effect, the change in GHG concentration in the atmosphere due to anthropogenic actions is enough to upset the radiative balance of the atmosphere and result in global warming.

[3] A dielectric is an electrical insulator that is highly resistant to the flow of an electric current.

- *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also greenhouse gases.
- *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong greenhouse gases.

This page intentionally left blank.

The air quality in the United States is governed by the federal CAA. In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by EPA. In California, the CCAA is administered by ARB at the state level and by air districts at regional and local levels. The CAA and CCAA set overall air quality standards that are achieved by a multitude of rules and regulations at the regional and local level.

Federal

Federal Clean Air Statutes

The first Air Pollution Control Act was enacted in 1955, and amended in 1965 and 1967. The subsequent federal CAA was enacted in 1970, and then amended numerous times in subsequent years (1977 and 1990). The CAA establishes federal AAQS, known as National Ambient Air Quality Standards (NAAQS), and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The City of Los Angeles is within the Basin and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the CAA that would most substantially affect the development of the Project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. Table 1 shows the NAAQS currently in effect for each criteria pollutant. The Basin fails to meet national standards for O_3, inhalable particulate matter (PM10 and PM2.5), NO_2, and lead and is, therefore, designated a federal nonattainment area for those pollutants. The Basin is a maintenance area for CO (EPA 2015a), as a former nonattainment area that has achieved attainment with the CO NAAQS. Table 1 also provides the attainment status for each pollutant.

Transportation Conformity

Under the 1990 CAA, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to the SIP for achieving the goals of the CAA requirements. Conformity with the CAA takes place on two levels—first at the regional level, and second at the project level. The Project must conform at both levels to be approved.

Table 1. Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time [11]	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
Ozone (O_3) [2]	1 hour 8 hours	0.09 ppm 0.070 ppm	--- [4] 0.075 ppm (4th highest measurement in 3 years)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from ROG/VOC and NO_X in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	Federal: Non-attainment State: Non-attainment
Carbon Monoxide (CO)	1 hour 8 hours 8 hours (Lake Tahoe)	20 ppm 9.0 ppm [1] 6 ppm	35 ppm 9 ppm ---	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment/ Maintenance State: Maintenance
Respirable Particulate Matter (PM10) [2]	24 hours Annual	50 µg/m³ 20 µg/m³	150 µg/m³ --- [2] (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM10.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Federal: Non-attainment State: Non-attainment
Fine Particulate Matter (PM2.5) [2]	24 hours Annual 24 hours (conformity process [5]) Secondary Standard (annual; also for conformity process [5])	--- 12 µg/m³ --- ---	35 µg/m³ 12.0 µg/m³ 65 µg/m³ 15 µg/m³ (98th percentile over 3 years)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the PM2.5 size range. Many toxic and other aerosol and solid compounds are part of PM2.5.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NO_X, sulfur oxides (SO_X), ammonia, and ROG.	Federal: Non-attainment State: Non-attainment

Pollutant	Averaging Time [11]	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
Nitrogen Dioxide (NO_2)	1 hour Annual	0.18 ppm 0.030 ppm	0.100 ppm [6] (98th percentile over 3 years) 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Federal: Attainment/ Maintenance State: Non-attainment
Sulfur Dioxide (SO_2)	1 hour 3 hours 24 hours	0.25 ppm --- 0.04 ppm	0.075 ppm [7] (99th percentile over 3 years) 0.5 ppm [9]	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment State: Attainment
Lead (Pb)[3]	Monthly Rolling 3-month average	1.5 µg/m³ ---	--- 0.15 µg/m³ [10]	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a TAC and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.	Federal: Non-attainment State: Non-attainment
Sulfate	24 hours	25 µg/m³	---	Premature mortality and respiratory effects. Contributes to acid rain. Some TACs attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Federal: n/a State: Attainment
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Federal: n/a State: Unclassified

Pollutant	Averaging Time [11]	State [8] Standard	Federal [8] Standard	Principal Health and Atmospheric Effects	Typical Sources	Project Area Attainment Status
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the federal CAA, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.	Federal: n/a State: Unclassified
Vinyl Chloride[3]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a TAC.	Industrial processes	Federal: n/a State: Unclassified

Notes: ppm = parts per million; μg/m³ = micrograms per cubic meter; ppb=parts per billion (thousand million)

1 Rounding to an integer value is not allowed for the state 8-hour CO standard. A violation occurs at or above 9.05 ppm.

2 Annual PM10 NAAQS revoked October 2006; was 50 μg/m³. The 24-hour PM2.5 NAAQS tightened October 2006; was 65 μg/m³. Annual PM2.5 NAAQS tightened from 15 μg/m³ to 12 μg/m³ December 2012 and secondary annual standard set at 15 μg/m³. 8-hour O_3 NAAQS tightened from 75 ppb (0.075 ppm) to 70 ppb (0.070 ppm) in October 2015. Nonattainment areas for the 70 ppb O_3 NAAQS have not yet been designated as of February 2016.

3 ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM10 and, in larger proportion, PM2.5. Both ARB and EPA have identified lead and various organic compounds that are precursors to ozone and PM2.5 as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.

4 Prior to 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still in use in some areas where 8-hour ozone emission budgets have not been developed, such as the S.F. Bay Area.

5 The 65 μg/m³ PM2.5 (24-hour) NAAQS was not revoked when the 35 μg/m³ NAAQS was promulgated in 2006. The 15 μg/m³ annual PM2.5 standard was not revoked when the 12 μg/m³ standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with a emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.

6 Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause redesignation to nonattainment in some areas after 2016.

7 EPA finalized a 1-hour SO_2 standard of 75 ppb in June 2010. Nonattainment areas have not yet been designated as of 9/2012.

8 State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise. Federal standards are "not to exceed more than once a year" or as described above.

9 Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.

10 Lead NAAQS are not considered in Transportation Conformity analysis.

11 "Averaging Time" is the time period established for specific ambient air quality standards, which must also be used when interpreting air quality monitoring data. National and California ambient air quality standards have different maximum levels for different averaging times.

Greenhouse Gases: Greenhouse gases do not have concentration standards.

EPA's transportation conformity rule (40 CFR Parts 51 and 93) establishes the criteria for conformity. At the regional level, EPA transportation conformity regulations require that the project be included in a currently conforming regional transportation plan (RTP) and transportation improvement program (TIP) at the time of project approval. Using the projects included in the RTP, an air quality model is run to determine whether the implementation of those projects would conform to emission budgets or other tests showing that federal CAA attainment requirements are met. If the conformity analysis is successful, metropolitan planning organizations (MPOs), such as SCAG, and the appropriate federal agencies, such as FHWA and FTA, make the determination that the RTP and TIP are in conformity with the SIP for achieving NAAQS goals. Otherwise, the projects in the RTP and TIP must be modified until conformity is attained. If the design and scope of the proposed transportation project are the same as those described in the RTP and TIP, the project is deemed to meet regional conformity requirements for purposes of project-level analysis.

Conformity at the project level requires hot-spot analysis if a region is designated nonattainment or maintenance for CO and/or PM. Hot-spot analysis is essentially the same, for technical purposes, as CO or PM analysis performed for NEPA purposes. In general, projects must not cause the CO or PM standards to be violated, and in nonattainment regions the project must not cause any increase in the number and severity of violations. If known CO or PM violations are located in the project vicinity, a project must include measures to reduce or eliminate the existing violations as well.

With respect to NAAQS, the Project is located in an area designated nonattainment for ozone, PM10, PM2.5, and lead and is in a maintenance area for CO and NO_2 (see Table 1). Therefore, the requirement to demonstrate regional and project-level conformity applies to the Project.

Federal Hazardous Air Pollutant Regulations

As noted above, EPA has identified seven MSATs (acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter) as being priority MSATs. To address emissions of MSATs, EPA has issued a number of regulations that have and will continue to dramatically decrease MSATs through cleaner fuels and cleaner engines.

Federal Greenhouse Gas and Climate Change Policy

Although there is currently no federal overarching law specifically related to climate change or the reduction of GHGs, EPA is developing regulations under the CAA that may be adopted pursuant to EPA's authority under the CAA in the next 2 years. Foremost among recent developments have been the settlement agreements between EPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries; the U.S. Supreme Court's decision in *Massachusetts v. EPA;* and EPA's "Endangerment Finding," "Cause or Contribute Finding," Mandatory Reporting Rule, and EPA's Clean Power Plan Final Rule. Although periodically debated in Congress, there is no federal legislation concerning greenhouse gas emissions limitations. In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld EPA's authority to regulate GHG emissions under the CAA.

Massachusetts, et al. vs. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations sued to force EPA to regulate GHGs as a pollutant pursuant to the CAA in *Massachusetts, et al. v. Environmental Protection Agency* 549 US 497 (2007). The court ruled that the plaintiffs had standing to sue, GHGs fit within the CAA's definition of a pollutant, and EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.

U.S. Environmental Protection Agency Mandatory Reporting Rule for GHGs (2009)

On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), which required EPA to develop "mandatory reporting of greenhouse gasses above appropriate thresholds in all sectors of the economy." The Reporting Rule applies to most entities that emit 25,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) or more per year. Starting in 2010, facility owners from 41 industrial categories were required to submit annual GHG emissions report with detailed calculations of facility GHG emissions. An additional 12 categories begin reporting for calendar year 2011 emissions. The Reporting Rule mandates recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

U.S. Environmental Protection Agency Endangerment Finding and Cause or Contribute Finding (2009)

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the CAA.

1. Endangerment Finding: that that the current and projected concentrations of the greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations.
2. Cause or Contribute Finding: that the combined emissions of greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings did not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to EPA's GHG emission standards for motor vehicles, which EPA subsequently proposed in joint rulemakings with the National Highway Traffic Safety Administration (NHTSA) to revise the Corporate Average Fuel Economy (CAFE) standards for light-duty vehicles and establish medium- and heavy-duty vehicle fuel economy standards.

Update to Corporate Average Fuel Economy Standards (2009)

The revised CAFE standards for autos and light-duty trucks incorporate stricter fuel economy standards promulgated by the state of California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25 percent by 2016.[4]

EPA, NHTSA, and ARB worked together on a joint EPA-NHTSA rulemaking to establish fuel economy and GHG emissions standards for 2017 to 2025 model year passenger vehicles, which required an industry-wide average of 54.5 miles per gallon. The Interim Joint Technical Assessment Report for the standards evaluated four potential future standards ranging from 47 to 62 miles per gallon in 2025 (EPA et al. 2010). The official proposal was released by both EPA and NHTSA on December 1, 2011. The final environmental document for the revised CAFE standards was released by NHTSA and EPA on July 9, 2012. On August 28, 2012, NHTSA issued the *Final Rule for CAFE Standards for Model Years 2017 and Beyond* (EPA and NHTSA 2012).

[4] Reduction compared with the previously existing standard.

Update to Medium- and Heavy-Duty Vehicle Fuel Economy Standards (2015)

In a process similar to the revision of the CAFE standards, on September 15, 2011 EPA and NHTSA issued the first-ever national fuel economy standards for medium- and heavy-duty vehicle (MDHD) standards. These Phase 1 standards applied to model year 2014-2018 MDHD vehicles. NHTSA currently is proposing fuel efficiency standards for HD engines, vehicles, and trailers as part of a joint rulemaking with EPA to establish the Phase 2 HD National Program for model years 2018-2027. The proposed rule was released by both EPA and NHTSA on June 19, 2015. The final rule and EIS for the Phase 2 MDHD standards are expected to be published in the summer of 2016 (EPA and NHTSA 2015).

Council on Environmental Quality Draft NEPA Guidance (2010, 2014)

On February 19, 2010, the Council on Environmental Quality (CEQ) issued draft NEPA guidance on the consideration of the effects of climate change and GHG emissions. This guidance advises federal agencies that they should consider opportunities to reduce GHG emissions caused by federal actions, adapt their actions to climate change effects throughout the NEPA process, and address these issues in their agency NEPA procedures. Where applicable, the scope of the NEPA analysis should cover the GHG emissions effects of a proposed action and alternative actions, as well as the relationship of climate change effects on a proposed action or alternatives. The guidance identified a reference point of 25,000 $MTCO_2e$ per year for direct GHG emissions as an indicator that further NEPA review may be warranted. This reference point, however, is not intended to be used as a threshold for determining a significant impact or effect on the environment due to GHG emissions. The guidance also does not propose a reference point for indirect GHG emissions (CEQ 2010).

In December 2014, the CEQ issued revised draft guidance to provide federal agencies with direction on when and how to consider the potential impacts of GHG emissions and climate change in accordance with NEPA including environmental assessments, environmental impact statements, and when apply existing or establishing new categorical exclusions. The draft guidance states that agencies should consider the potential impacts of a proposed action on climate change by evaluating potential GHG emissions and considering the implications of climate change for the environmental effects of the proposed action. The 2014 guidance retained the reference point of 25,000 $MTCO_2e$ per year (CEQ 2014).

State

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants recognized by the state. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 1 shows the CAAQS currently in effect for each criteria pollutant. The Basin fails to meet state standards for O_3, PM10, PM2.5, NO_2, and Pb and is, therefore, designated a state nonattainment area for those pollutants, and is also a maintenance area for CO. The Basin is in attainment (compliance) with state standards for SO_2, sulfates, hydrogen sulfide, visibility-reducing particles, and vinyl chloride. Table 1 lists each criteria pollutant and its state and federal attainment status.

California Toxic Air Contaminants Regulations

California regulates TACs primarily through the Toxic Air Contaminant Identification and Control Act (Tanner Act) (Assembly Bill [AB] 1807) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("Hot Spots" Act) (AB 2588). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Tanner Act (AB 1807) created California's program to reduce exposure to air toxics. The "Hot Spots" Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, ARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. The goal of the plan is to reduce diesel PM10 (respirable particulate matter) emissions and the associated health risk by 75 percent in 2010 and by 85 percent by 2020. The plan identifies 14 measures that ARB will implement over the next several years. Because the ARB measures would be enacted before any phase of construction, the Project would be required to comply with applicable diesel control measures.

The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. To date, ARB has identified 21 TACs, and has also adopted EPA's list of HAPs as TACs. In August 1998, diesel particulate matter (DPM) was added to the ARB list of TACs (ARB 1998).

The "Hot Spots" Act requires that existing facilities that emit toxic substances above specified levels (1) prepare a toxic emission inventory, (2) prepare a risk assessment if emissions are significant (i.e., 10 tons per year or on District's Health Risk Assessment list), (3) notify the public of significant risk levels, and (4) prepare and implement risk reduction measures. ARB's Diesel Risk Reduction Plan outlines a comprehensive and ambitious program that includes the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). ARB has adopted several regulations that will reduce diesel emissions from in-use vehicles and engines throughout California. In some cases, the particulate matter reduction strategies also reduce smog-forming emissions, such as NO_X. As an ongoing process, ARB reviews air contaminants and identifies those that are classified as TACs. ARB also continues to establish new programs and regulations for the control of TACs, including diesel particulate matter, as appropriate.

California Greenhouse Gas and Climate Change Policy

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The Governor of California has also issued several executive orders related to the state's evolving climate change policy. Of particular importance to local governments is the direction provided by the AB 32 Scoping Plan, which recommends local governments reduce their GHG emissions by a level consistent with state goals.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, legal cases, regulations, and legislation at the state levels that are relevant to the city are provided below. Figure 3 displays a timeline of key state and federal regulatory activity. Key statewide GHG regulations that are directly applicable to the Project include the following.

Executive Order S-3-05

Executive Order (EO) S-3-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by the 2020, and (3) 80 percent below the 1990 levels by the year 2050.[5]

Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local government or private actions. The Secretary of the California Environmental Protection Agency is required to report to the Governor and state legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this executive order.

Assembly Bill 1493—Pavley Rules (2002, amendments 2009)/Advanced Clean Cars (2011)

Known as "Pavley I," AB 1493 standards are the nation's first GHG standards for automobiles. AB 1493 required ARB to adopt vehicle standards that will lower GHG emissions from new light duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as "Pavley II," now referred to as the "Advanced Clean Cars" measure) has been proposed for vehicle model years 2017–2020. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14 percent. In June 2009, EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the then-current model year.

EPA and ARB are currently working together on a joint rulemaking to establish GHG emissions standards for 2017 to 2025 model year passenger vehicles. The Interim Joint Technical Assessment Report for the standards evaluated four potential future standards ranging from 47 and 62 miles per gallon in 2025 (EPA et al. 2010). The official proposal was released by both EPA and ARB on December 7, 2011, and was unanimously approved by ARB on January 26, 2012.

Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006/2011 Update

AB 32 codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since being adopted, ARB, the California Energy Commission, the California Public Utilities Commission, and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and EO S-03-05. The Scoping Plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires ARB and other state agencies to develop and enforce regulations and other initiatives

[5] Statewide GHG emissions were estimated to be 449.59 $MMTCO_2e$ for year 2010 compared to 462.9 $MMTCO_2e$ for year 2000 (ARB 2013).

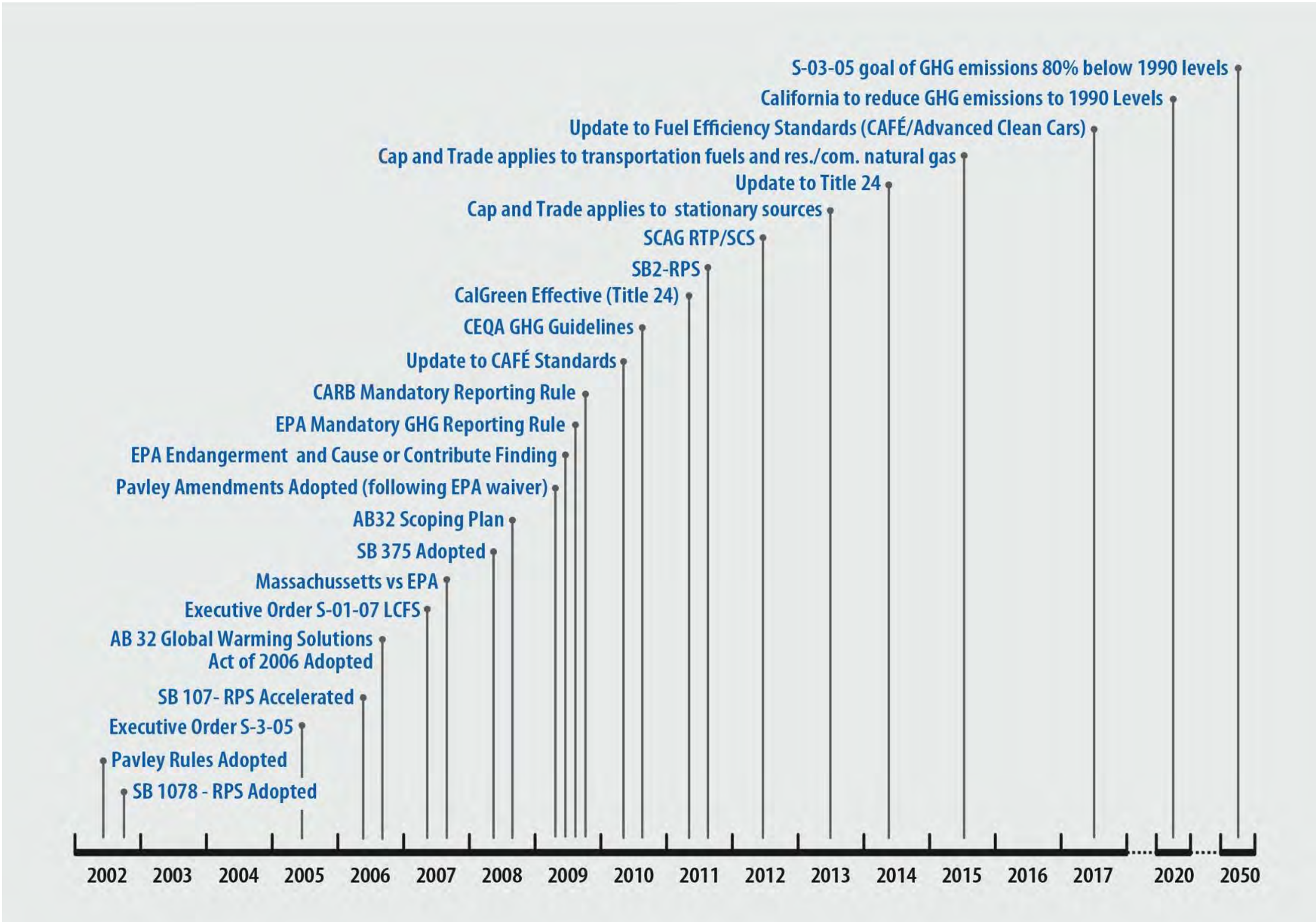
for reducing GHGs. Specifically, the Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state.

In March 2011, a San Francisco Superior Court enjoined the implementation of ARB's Scoping Plan, finding the alternatives analysis and public review process violated both CEQA and ARB's certified regulatory program (Association of Irritated Residents, et al v. California Air Resources Board, Case No. CPF-09-509562, March 18, 2011). In response to this litigation, ARB adopted the new CEQA document (*Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*) on August 24, 2011. ARB staff re-evaluated the baseline in light of the economic downturn and updated the projected 2020 emissions to 545 million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Two reduction measures (Pavley I and the Renewables Portfolio Standard [12–20 percent]) not previously included in the 2008 Scoping Plan baseline were incorporated into the updated baseline, further reducing the 2020 statewide emissions projection to 507 $MMTCO_2e$. The updated forecast of 507 $MMTCO_2e$ is referred to as the AB 32 2020 baseline. Reduction of an estimated 80 $MMTCO_2e$ are necessary to reduce statewide emissions to the AB 32 Target of 427 $MMTCO_2e$ by 2020 (ARB 2011).

Executive Order S-01-07, Low Carbon Fuel Standard (2007)

Executive Order S-01-07 mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and (2) that a low carbon fuel standard (LCFS) for transportation fuels be established in California. The executive order initiates a research and regulatory process at ARB. Based on an implementation plan developed by CEC, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012). On April 23, 2012, the U.S. Court of Appeals for the Ninth Circuit granted ARB's motion to stay the injunction that had prevented ARB from enforcing California's LCFS. Thus, although the case is ongoing, ARB is permitted to continue its implementation and enforcement of the LCFS pending the outcome of the appeal. On November 16, 2015 the Office of Administrative Law in the State of California approved the re-adoption of the Low Carbon Fuel Regulation.

Figure 3. Milestones



This page intentionally left blank.

Executive Order B-30-15, Greenhouse Gas Reduction Target (2015)

Executive Order B-30-15 was announced by Governor Brown on April 29, 2015 and establishes a greenhouse gas reduction target of 40 percent below 1990 levels by 2030 in the State of California. California is currently on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, which was previously established in the California Global Warming Solutions Act of 2006 (AB 32, see section above for more details). The State's new emission reduction target will make it possible to reach the State's overall goal of reducing emissions 80 percent under 1990 levels by 2050 (Office of Governor 2015).

SB 375 (Steinberg), Statutes of 2008

Senate Bill (SB) 375 requires regional transportation plans, developed by MPOs, to incorporate a "sustainable communities strategy" (SCS) in their RTPs that will achieve GHG emission reduction targets set by ARB, which finalized the regional targets in February 2011. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. However, those provisions will not become effective until an SCS is adopted. The final targets require SCAG to identify strategies that will reduce per capita GHG emissions from passenger vehicles by approximately 8 percent by 2020 and 13 percent by 2035 over base year 2005. SCAG adopted the Final 2012 RTP, which incorporates the SCS, on April 4, 2012 (SCAG 2012a). The Draft 2016-2040 RTP/SCS was released in December 2015. The revised RTP/SCS includes $556.5 billion in transportation investments and the strategies outlined in the 2016 RTP/SCS will help reduce GHG emissions to meet California's targets, as mentioned above (SCAG 2015).

Other Vehicle Efficiency Measures from ARB

ARB has adopted or is pursuing additional measures to promote vehicle efficiency in order to reduce GHG emissions. In 2008, ARB adopted a measure concerning heavy-duty vehicle aerodynamics. In 2009, ARB adopted regulations for tire pressure. ARB also evaluated hybridization of medium-heavy vehicles and cool car design (i.e., a clear, reflective glaze on car windows designed to cut emissions by virtue of blocking excessive sunlight and heat). In November 2016, ARB released the Draft Technology Assessment for Heavy-Duty Hybrid Vehicles which analyzed the current and future development of heavy-duty hybrid vehicle technologies. The use of these technologies would help to reduce fuel consumption and GHG emissions within the vehicle fleet; however, these technologies are currently cost prohibitive and would increase vehicle weights (ARB 2015b).

State CEQA Guidelines

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of the project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others:

- Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
- Implementation of project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions;
- Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions; and
- Measures that sequester carbon or carbon-equivalent emissions.

ARB GHG Mandatory Reporting Rule Title 17 (2009)

In December of 2007, ARB approved a rule requiring mandatory reporting of GHG emissions from certain sources, pursuant to AB 32. Facilities subject to the mandatory reporting rule must have reported their emissions from the calendar year 2009 and have had those emissions verified by a third party in 2010. In general the rule applies to facilities emitting more than 25,000 $MTCO_2e$ in any given calendar year or electricity generating facilities with a nameplate generating capacity greater than 1 megawatt and/or emitting more than 2,500 $MTCO_2e$ per year. Additional requirements also apply to cement plants and entities that buy and sell electricity in the state.

Western Climate Initiative/California Cap and Trade (2010/2011)

The Western Climate Initiative (WCI) is a collaboration of seven western states (Washington, Oregon, California, Arizona, New Mexico, Utah, and Montana) and four Canadian provinces (British Columbia, Manitoba, Ontario, and Quebec) that are working together to identify, evaluate, and implement policies to tackle climate change at a regional level. On July 27, 2010, the Partner jurisdictions of the WCI released a comprehensive strategy designed to reduce climate-warming GHG emissions, stimulate development of clean-energy technologies, create green jobs, increase energy security and independence, and protect public health. The objective of the WCI Partner jurisdictions' plan is to reduce regional GHG emissions to 15 percent below 2005 levels by 2020 (similar to AB 32). The regional goal will be reached by creating a market-based system that caps GHG emissions and uses tradable permits to incentivize development of renewable and lower-polluting energy sources; encouraging GHG emissions reductions in industries not covered by the emissions cap, thus reducing energy costs region wide; and advancing policies that expand energy efficiency programs, reduce vehicle emissions, encourage energy innovation in high-emitting industries, and help individuals transition to new jobs in the clean-energy economy. The central component of the WCI Partner jurisdictions' comprehensive strategy is a flexible, market-based, regional cap-and-trade program that encourages the most cost-effective, reliable alternatives to reduce GHG emissions (WCI 2010).[6] ARB is working closely with the other members of the WCI to design a regional cap-and-trade program that can deliver GHG emission reductions within the region at costs lower than could be realized through a California-only program.

To that end, pursuant to the directives of AB 32, ARB approved measures on December 16, 2010, to enact a GHG Cap-and-Trade program for the state of California. The California Cap-and-Trade Program created a CO_2 market system with a GHG emissions cap that will be decreased over time. Building on the data required by the 2007 California Mandatory GHG Reporting rule, only stationary

[6] In February 2010, per Executive Order 2010-06, Arizona pulled out of the cap and trade proposal, citing economic worries. However, Arizona remains a member of the WCI.

sources that emit more than 25,000 $MTCO_2e$ per year are affected by the Cap-and-Trade program. These sources include mostly large operations, such as power plants, refineries, cement plants, hydrogen production facilities, and other large, stationary sources. Official rulemaking associated with achieving this emissions cap was adopted by January 1, 2011 and adopted the final cap-and-trade regulation and adaptive management plan on October 20, 2011. The program commenced in January 2012 and compliance began in January 2013.

Local

South Coast Air Quality Management District

At the local level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is a subregion of the SCAQMD jurisdiction. While air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. These plans require, among other emissions-reducing activities: control technology for existing sources; control programs for area sources and indirect sources; a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified (i.e., previously permitted) emission sources; and transportation control measures.

The last adopted AQMP was in 2012 and was adopted by the AQMD Governing Board on December 7, 2012. Control measure IND-01 was approved for adoption and inclusion in the Final 2012 AQMP at the February 1, 2013 Governing Board meeting (SCAQMD 2012). The Final 2012 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the Basin for the attainment of NAAQS. The 2012 AQMP addresses federal CAA requirements, including a 24-hour PM2.5 Plan, 8-hour ozone additional measures and VMT offset demonstration, and 1-hour ozone attainment demonstration and VMT offset demonstration. Additionally, the AQMP highlights the significant amount of reductions needed and the need to identify additional strategies, especially in the area of mobile sources, to meet federal criteria pollutant standards within the timeframes allowed under federal CAA.

The 2012 AQMP focuses on attainment of federal PM2.5 standards by the 2014 attainment date, which focuses on directly-emitted PM2.5 and NO_X reductions, since NO_X is also a precursor to ozone. The 8-hour ozone control strategy builds on the PM2.5 strategy, augmented with additional NO_X and VOC reductions to meet the standard by 2024. The 2012 AQMP concluded that substantial emission reductions from all sources are necessary. SCAQMD has initiated development of the 2016 AQMP, which will focus on attainment of the federal 8-hour ozone standard (0.070 ppm).

The upcoming 2016 AQMP will include strategies to meet the following NAAQS: 8-hour ozone (70 parts per billion [ppb]) by 2032; annual PM2.5 (12 micrograms per cubic meter [$\mu g/m^3$]) by 2021-2025; 8-hour ozone (80 ppb) by 2024; 1-hour ozone (120 ppb) by 2023; and 24-hour PM2.5 (35 $\mu g/m^3$) by 2019. The SCAQMD governing board is expected by summer 2016 to consider adoption of the 2016 AQMP and would submit the plan to EPA shortly thereafter. Until the 2016 AQMP receives EPA approval, the 2012 AQMP will remain in effect.

SCAQMD has published the *CEQA Air Quality Handbook* (SCAQMD 1993) to help local governments analyze and mitigate project-specific air quality impacts. The handbook provides standards, methodologies, and procedures for conducting air quality analyses and was used extensively in the preparation of this report. In addition, SCAQMD has published additional documents (*Localized Significance Threshold Methodology for CEQA Evaluations* in 2003, *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* in 2006, and *Supplemental Guidelines for Preparing Risk Assessment for the Air Toxics "Hot Spots"* in 2015) that provide guidance in evaluating localized effects from mass emissions during construction and operations. These documents were used in the preparation of this report.

SCAQMD Rules and Regulations

Through the attainment planning process, SCAQMD develops the SCAQMD Rules and Regulations to regulate sources of air pollution in the Basin. The SCAQMD rules most pertinent to construction and operation of the Project are listed below. In addition, to the extent that MSF or TPSS equipment would require SCAQMD permits, the Project would be subject to additional SCAQMD rules that apply to stationary sources, such as Regulation XIII (New Source Review), Rule 1401 (New Source Review of Toxic Air Contaminants), or Rule 431.2 (Sulfur Content of Liquid Fuels), among other rules.

SCAQMD Rule 402—Nuisance. This rule prohibits discharge of air contaminants or other material that:

- Cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public;
- Endanger the comfort, repose, health, or safety of any such persons or the public; and
- Cause, or have a natural tendency to cause, injury, or damage to business or property.

SCAQMD Rule 403—Fugitive Dust. This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. During construction of the Project, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site prewatering and rewatering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on property with 50 or more acres of disturbed surface area, or for any earth-moving operation with a daily earth-moving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintaining dust control records, and designating a SCAQMD-certified dust control supervisor.

SCAQMD Regulation XIII. This regulation sets forth pre-construction review requirements for new, modified, or relocated facilities to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.

In addition to nonattainment air contaminants, this regulation will also limit emission increases of ammonia and ozone-depleting compounds from new, modified, or relocated facilities by requiring the use of best available control technology (BACT).

SCAQMD Regulation XIV. This rule specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units that emit TACs. The rule establishes allowable risks for permit units requiring new permits.

SCAQMD Rule 1403—Asbestos Emissions from Demolition/Renovation Activities. The purpose of this rule is to limit emissions of asbestos, a TAC, from structural demolition/renovation activities. The rule requires people to notify the SCAQMD of proposed demolition/renovation activities and to survey these structures for the presence of asbestos-containing materials (ACMs). The rule also includes: notification requirements for any intent to disturb ACM; emission control measures; and ACM removal, handling, and disposal techniques. All proposed structural demolition activities associated with proposed construction would need to comply with the requirements of Rule 1403.

SCAQMD Regulation XXXV. This regulation sets forth rules for railroads and railroad operations, including requiring operators to keep a record of idling events of 30 minutes or more (Rule 3501), idling restriction on freight trains (Rule 3502), and requirements for health risk assessments at rail yards (Rule 3503). Rules within Regulation XXXV apply only to Class I freight railroads defined by the Surface Transportation Board as having an annual revenue of $250 million or more and switching and terminal freight and rail yards. The streetcar does not handle freight. Therefore, these rules are not applicable to the Project.

With respect to GHGs, ARB's Climate Change Scoping Plan states that local governments are "essential partners" in the effort to reduce GHG emissions. The Climate Change Scoping Plan also acknowledges that local governments have "broad influence and, in some cases, exclusive jurisdiction" over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce GHG emissions rely on local government actions. The Climate Change Scoping Plan encourages local governments to reduce GHG emissions by approximately 15 percent from current levels by 2020.

To provide guidance to local lead agencies on determining significance for GHG emissions in its CEQA documents, SCAQMD staff established an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff on developing GHG CEQA significance thresholds. To date, SCAQMD has formally adopted 10,000 $MTCO_2e$ as a threshold only for industrial facilities (i.e., industrial facilities that require issuance of a SCAQMD Title V or RECLAIM permit). Because the Project would not require such a permit, the 10,000 $MTCO_2e$ threshold is not applicable.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, economy, community development, and environment. SCAG is the federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide for the SCAG region, which includes Growth Management and Regional Mobility chapters, which form the basis for the land use and transportation components of the AQMP. These chapters are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

With respect to air quality planning, SCAG prepares the RTP for the SCAG region every 3 years, which, along with the Regional Comprehensive Plan and Guide, forms the basis for the land use and transportation components of the AQMP, and is used to prepare the air quality forecasts and the consistency analysis that are included in the AQMP.

City of Los Angeles

The City of Los Angeles published a climate action plan in 2007 titled *GreenLA*. In order to provide detailed information on action items discussed in GreenLA, the City published an implementation document in 2008 titled *ClimateLA*. ClimateLA presents the existing GHG inventory for the city, includes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate progress, and includes mechanisms that allow the plan to be revised in order to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels, which were estimated to be approximately 54.1 million metric tons.

Therefore, the City will need to lower annual GHG emissions to approximately 35.1 million metric tons per year by 2030. To achieve these reductions the City has developed strategies that focus on energy, water use, transportation, land use, waste, open space and greening, and economic factors. To reduce emissions from energy usage, ClimateLA proposes the following goals: increase the amount of renewable energy provided by the Los Angeles Department of Water and Power; present a comprehensive set of green building policies to guide and support private sector development; reduce energy consumed by City facilities and utilize solar heating where applicable; and help citizens to use less energy. With regard to waste, ClimateLA sets the goal of reducing or recycling 70 percent of trash by 2015. With regard to open space and greening, ClimateLA includes the following goals: create 35 new parks; revitalize the Los Angeles River to create open space opportunities; plant one million trees throughout the city; identify opportunities to “daylight” streams; identify promising locations for stormwater infiltration to recharge groundwater aquifers; and collaborate with schools to create more parks in neighborhoods. The 2007 GreenLA/2008 ClimateLA documents remain current as of February 2016.

Existing Conditions

Ambient air quality is affected by climatological conditions, topography, and the types and amounts of pollutants emitted. The area potentially affected by the Project is located within the City of Los Angeles, within Los Angeles County, and within the Basin. The following discussion describes relevant characteristics of the Basin and an overview of conditions affecting ambient air pollutant concentrations.

Regional Context

The project site is located within the Basin, an area covering approximately 6,745 square miles and bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

The greatest air pollution impacts in the Basin occur from June through September. These are generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This condition frequently reduces pollutant dispersion, thereby causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. O_3 concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

SCAQMD completed an ambient air monitoring and evaluation study in the Basin (i.e., the Multiple Air Toxics Exposure Study III [MATES III] study) (SCAQMD 2013). MATES III was a follow up to previous air toxics studies in the Basin and part of the SCAQMD Governing Board's Environmental Justice Initiative. The MATES III study concluded that the average carcinogenic risk throughout the Basin, which was attributed to TACs, is approximately 1,194 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft) are the greatest contributors. About 83.6 percent of all risk is attributed to DPM emissions (SCAQMD 2008a). SCAQMD completed its MATES IV study in May 2015 which concluded that air toxic exposure within the Basin has decreased when compared against previous studies and monitoring location data. MATES IV estimated that the carcinogenic risk from air toxics in the Basin was 65 percent lower than the monitored average in MATES III with the greatest risk around ports and major transportation corridors (SCAQMD 2015b).

Local Air Conditions

Local Climate

Data from the closest climate monitoring station—Western Regional Climate Center's Los Angeles Civic Center Station (COOPID 045115)—was used to characterize project vicinity climate conditions. Over the period of record (1906–2012), the average project area summer (August) high and low temperatures were 83.1 degrees Fahrenheit (°F) and 63.8°F, respectively, while temperatures exceed 90°F an average of 8.5 times per year. The average winter (January) high and low temperatures were 66.4°F and 48.3°F, respectively, while temperatures rarely drop below 32°F. Rainfall varies widely from year to year, with an annual average of 14.77 inches with an average of 36 days with measureable rainfall (greater than or equal to 0.01 inches) (Western Regional Climate Center 2013).

The closest wind monitoring station, located approximately 1.5 miles northeast of the project area, is the Central Los Angeles wind monitoring station (1630 Main Street). Wind patterns in the project vicinity arise primarily from the west-southwest, with seasonal and diurnal variations resulting in northeast (during Santa Ana events) and southerly winds (before and during winter storms) (National Oceanic and Atmospheric Administration n.d.). Over the period of record (1/1/2006 to 12/31/2009), winds at the Central Los Angeles station averaged a speed of 2.23 meters per second (5.0 mph), while calm wind conditions were present only 0.32 percent of the time (SCAQMD 2011).

Existing Pollutant Levels at Nearby Monitoring Station

SCAQMD has divided the Basin into air monitoring areas and maintains a network of air quality monitoring stations located throughout the Basin. The project alignment is located in the Central Los Angeles County Monitoring Area (Source Receptor Area [SRA] 1). The nearest monitoring station is the Los Angeles – North Main Street station (ARB 70087, 1630 North Main Street), located approximately 1.5 miles northeast of the Project. Criteria pollutants monitored at the Los Angeles – North Main Street station include O_3, CO, NO_2, PM10, PM2.5, SO_2, and lead.

Concentrations of pollutants over the last 3 years for which complete data are available (2013–2015) have been compiled from the stations' data (see Table 2) (EPA 2016a; ARB 2016). Monitoring data show the following pollutant concentration violations:

- 1-hour O_3 CAAQS was exceeded multiple times in 2014 and 2015.
- 8-hour O_3 CAAQS and NAAQS were exceeded multiple times in 2014.
- 24-hour PM10 CAAQS was exceeded several times each year.
- 24-hour PM10 NAAQS was not exceeded in 2013–2015.
- 24-hour PM2.5 NAAQS was exceeded once in 2013 and several times in 2014 and 2015.
- 1-hour NO_2 NAAQS and CAAQS were not exceeded in 2013–2015.
- No exceedances of the CO CAAQS or NAAQS were recorded.
- The annual standard for PM2.5 has been exceeded in 2013–2015, but not for PM10.

Existing Health Risk in the Surrounding Area

According to SCAQMD inhalation cancer risk data (MATES IV), the project area is within cancer risk zones ranging from approximately 1,516 in one million (at the southwest corner of the project area, near I-10) to approximately 1,830 in one million (at the northern portion of the project area, near

US-101) (SCAQMD 2015b). For comparison, the average Basin cancer risk from air toxics based on the annual average levels calculated from the 10 study monitoring sites is approximately 418 in one million. This is about 65 percent lower than the estimated risks from the 2004–2006 time period.

Table 2. Air Quality Data from Los Angeles – North Main Street Station (ARB 70087, AQS 06-037-1103)

Pollutant and Standard	2013	2014	2015
Ozone (O_3)			
Maximum concentration 1-hour period	0.081	0.113	0.104
Maximum concentration 8-hour period	0.069	0.094	0.074
Days state 1-hour standard exceeded *(0.09 ppm)*	0	3	2
Days state 8-hour standard exceeded *(0.070 ppm)*	0	7	6
Days national 8-hour standard exceeded *(0.070 ppm)*	0	2	0
Suspended Particulates (PM10)			
Maximum state 24-hour concentration	74.5	86.8	72.0
Maximum national 24-hour concentration	57	66	73
Annual average concentration	35.3	30.2	NA
Days state 24-hour standard exceeded *(50 μg/m³)*	21	19	NA
Days national 24-hour standard exceeded (expected) *(150 μg/m³)*	0	0	0
State annual standard exceeded *(20 μg/m³)*	Yes	Yes	NA
Suspended Particulates (PM2.5)			
Maximum 24-hour concentration	54.8	65.0	56.4
State annual average concentration	18.9	NA	12.5
National annual average concentration	12.0	12.3	12.3
Days national 24-hour standard exceeded *(35 μg/m³)*	1	6	8
State/national annual standards exceeded *(12 μg/m³)*	Yes	NA	Yes
Carbon Monoxide (CO)			
Maximum Concentration 8-hour Period	2.0	1.8	1.8
Maximum Concentration 1-hour Period	2.5	2.4	3.2
Days state 8-hour standard exceeded *(9.0 ppm)*	0	0	0
Days national 8-hour standard exceeded *(9 ppm)*	0	0	0
Days state 1-hour standard exceeded *(20 ppm)*	0	0	0
Days national 1-hour standard exceeded *(35 ppm)*	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour Concentration	0.09	0.082	0.079
Annual Average Concentration	0.022	0.022	0.022

Pollutant and Standard	2013	2014	2015
Days state 1-hour standard exceeded (*0.18 ppm*)	0	0	0
Days national 1-hour standard exceeded (*0.100 ppm*)	0	0	0
State annual standard exceeded *(0.030 ppm)*	No	No	No
National annual standard exceeded *(0.053 ppm)*	No	No	No
Source: ARB 2016; EPA 2016a. Compiled by ICF, April 2016. Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; NA = Insufficient data available to determine the value.			

Sensitive Receptors and Locations

SCAQMD defines sensitive receptor locations as residential, commercial, and industrial land use areas as well as other locations where sensitive populations may be located. Other sensitive receptor locations include schools, hospitals, convalescent homes, day care centers, and other locations where children, chronically ill individuals, or other sensitive persons could be exposed (SCAQMD 2005).

The Project would occur within the heavily developed downtown Los Angeles area, and would traverse the following neighborhoods/districts from north to south: the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, and the Los Angeles Sports and Entertainment District. Sensitive receptor locations within 1/4 mile of the Project include multiple land use categories such as residential, medical, and child care, among other uses. Detailed below under the discussion of *Significance Thresholds*, the most conservative (i.e., lowest number) SCAQMD localized thresholds are used to evaluate local impacts throughout the project limits. This will ensure that all sensitive receptor locations are evaluated using the most conservative localized significance criteria.

State Greenhouse Gas Emissions

More than 97 percent of U.S. GHG emissions are the result of burning fossil fuels. Of these GHGs, 83 percent are in the form of CO_2, 10 percent are CH_4, and 4.5 percent are N_2O. Fossil fuels are burned to power vehicles, create electricity, and generate heat. Vehicle emissions are the largest source of CO_2 emissions in California, representing 38 percent of statewide emissions in 2011. Electrical generation is the second-largest source of emissions in California, at 19 percent; commercial and residential land uses are the third-largest generator of California GHG emissions, at 10 percent (ARB 2013). On a national level, electrical generation is the largest emissions sector, and transportation is the second largest. Other sources of GHG emissions generated within the U.S. and California include agriculture, land clearing, the landfilling of waste, refrigerants, and certain industrial processes.

Although many nations, including the U.S., regularly monitor and report GHG emissions, federal legislation to reduce global emissions has not been adopted and is the subject of much debate. As noted above, EPA is presently pursuing regulation of GHGs through the federal CAA, following a U.S. Supreme Court ruling (*Massachusetts, et al. v. Environmental Protection Agency* 549 US 497) clarifying that it has the authority under the CAA to do so. Many states, including California as a prominent leader, have passed legislation to reduce GHG emissions. California's GHG regulatory framework is discussed further in the Regulatory Setting.

Greenhouse Gas Inventories

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

U.S. Greenhouse Gas Emissions Inventory

EPA estimates that total U.S. GHG emissions for 2014 amounted to 6,870 $MMTCO_2e$, which is 7.4 percent greater than 1990 levels and a 1.0 percent increase over 2013 levels (EPA 2016b). U.S. GHG emissions were responsible for approximately 168 percent of global GHG emissions in 2011 (U.S. Department of Energy 2015). The largest contributors to U.S. GHG emissions in 2014 were electricity generation (30 percent), transportation (26 percent), and the industrial sector (21 percent). Emissions in the electricity generation, transportation, residential, commercial, and industrial sectors consist primarily of CO_2. GHG emissions due to agriculture consist predominantly of CH_4 and N_2O. In general, industrial emissions in the U.S. have declined over the last decade, while emissions in other sectors, such as transportation, have grown steadily (EPA 2016b).

California Greenhouse Gas Emissions Inventory

In 2013, total California GHG emissions were 459 $MMTCO_2e$. Although total emissions have decreased by 14 percent from 2000 to 2013, emissions increased by 1.6 percent from 2010 to 2013 (452 to 459 $MMTCO_2e$). The transportation sector accounted for approximately 37 percent of the total emissions, the industrial sector accounted for approximately 23 percent, and electricity generation accounted for approximately 20 percent, with almost equal contributions from in-state and imported electricity (ARB 2015a). From a broader geographical perspective, the state of California ranked second in the United States for 2013 GHG emissions, only behind Texas. However, from a per capita standpoint, California had the 48th lowest emissions (U.S. Energy Information Administration 2015). On a global scale, if California were considered as a nation, in 2013 California had the 12th largest CO_2 emissions and the 9th largest per capita emissions (European Commission 2016).

City of Los Angeles Greenhouse Gas Emissions Inventory

In 2004, total community-wide GHG emissions were greater than 50 $MMTCO_2e$, roughly the same amount as the country of Sweden. The transportation sector accounted for approximately 47 percent of the total emissions, electricity generation accounted for approximately 32 percent, natural gas use generates 9 percent of emissions, and the balance of 12 percent is from burning other industrial fuels. The City's *GreenLA*, discussed above, includes more than 50 actions to reduce city-wide GHG emissions, as well as measures to adapt to the effects of climate change. The City's goal is to reduce GHG emissions to 35 percent below 1990 levels by 2030 (City of Los Angeles 2007).

This page intentionally left blank.

State and SCAQMD

Based on Appendix G of the State CEQA Guidelines, the Project would have a potentially significant effect on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan,
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors),
- Expose sensitive receptors to substantial pollutant concentrations,
- Create objectionable odors affecting a substantial number of people,
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The CEQA Guidelines also state that the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations above.

Based on SCAQMD's regulatory role in the Basin, the significance thresholds and analysis methodologies outlined in the SCAQMD *CEQA Air Quality Handbook* (1993, as updated per its website), *Final Localized Significance Threshold Methodology for CEQA Evaluations* (2003), and *Final—Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds* guidance documents were used in evaluating project impacts.

Construction Emissions

According to criteria set forth by SCAQMD, a project would have a significant impact on construction emissions if any of the following were to occur.

- Regional emissions from both direct and indirect sources exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for ROG, (2) 100 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or sulfur oxides (SO_X), (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb; or
- Localized emissions from on-site construction equipment and site disturbance activity exceed any of the following SCAQMD-prescribed threshold levels: (1) 74 pounds per day for NO_X, (2) 562 pounds per day for CO, (3) 4 pounds per day for PM10, and (4) 2 pounds per day for PM2.5.[7]

[7] Derived from SCAQMD Localized Significance Threshold Tables—SRA 1 (Central Los Angeles County) 1-acre site, 25-meter receptor distance, which are the most conservative available localized thresholds.

Operational Emissions

According to criteria set forth by SCAQMD, a project would have a significant impact with regard to operational emissions if:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds a day for ROG, (2) 55 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb (SCAQMD 1993, 2006);
- Localized emissions from on-site sources exceed any of the following SCAQMD prescribed threshold levels: (1) 74 pounds per day for NO_X, (2) 680 pounds per day for CO, (3) 5 pounds per day for PM10, and (4) 3 pounds per day for PM2.5;[8] or
- The project would cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9 ppm, respectively, at an intersection or roadway within 0.25 mile of a sensitive receptor.[9]

Toxic Air Contaminants

According to guidelines provided in the SCAQMD *CEQA Air Quality Handbook*, a project would have a significant impact from TACs if:

- On-site stationary sources emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of ten in one million (1.0×10^{-5}) or an acute or chronic hazard index of 1.0 (SCAQMD 1998);
- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials, posing a threat to public health and safety; or
- The project would be occupied primarily by sensitive individuals within 0.25 mile of any existing facility that emits TACs, which could result in a health risk from pollutants identified in District Rule 1401 (SCAQMD 1993).

Climate Change/Greenhouse Gas Emissions

A number of agencies throughout the state, including multiple air districts, have drafted and/or adopted varying threshold approaches and guidelines for analyzing GHG emissions and climate change in CEQA documents. Some commonly used thresholds and methodologies include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions,[10] (3) numeric "bright-line" thresholds, and (4) efficiency-based thresholds.

The recent California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, Case

---

[8] Derived from SCAQMD Localized Significance Threshold Tables – SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1-acre site, 25-meter receptor distance, which are the most conservative available localized thresholds.

[9] Where the CO standard is exceeded at the intersection, a project would result in a significant impact if the incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard or 0.45 ppm for the 8-hour CO standard.

[10] Performance-based reductions include the "percent below Business as Usual" threshold approach, which has been used widely in the past. This approach was the subject of the *Newhall Ranch* case and currently is subject to uncertainty until the issues raised in the Supreme Court ruling are resolved.

No. S217763) (hereafter Newhall Ranch) clarified various ways to analyze climate change impacts for the Project.[11]

Pursuant to *Newhall Ranch*, a project-level analysis that uses ARB's business-as-usual (BAU) model must present substantial evidence to support the use of the model for the particular project at the specific project location, which may require examination of the data behind the state-wide model and adjustment to the levels of reduction from BAU. To date, neither ARB nor any lead agencies have provided any guidance on how to adjust AB 32's statewide BAU target to the project level.

Moreover, the Court appeared to potentially endorse the following methodologies, but did not foreclose other methodologies that may be used by lead agencies depending on the circumstances of a given project.

- Assessment, in whole or in part, by looking to compliance with regulatory programs designed to reduce GHG from particular activities (e.g., building efficiency, transportation, water usage) and to the extent that a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by ARB or other state agencies, the lead agency could appropriately rely on their use as showing compliance with CEQA.
- Use of a GHG emission reduction plan consistent with State CEQA Guidelines Sections 15183.5 or 15064.4 for a particular geographic area.
- Certain land use projects (such as residential, mixed use, and transit priority projects) could use CEQA's expressed allowance for streamlining of transportation impacts based on metropolitan regional sustainable communities strategies.
- Use of a bright-line threshold, although such threshold is not required.

Under any methodology, the *Newhall Ranch* case recognizes that if GHG emission impacts are still significant after adoption of all feasible mitigation measures and/or project alternatives, the lead agency may adopt a statement of overriding consideration with the appropriate findings. Moreover, thresholds only define the level at which an environmental effect is "normally" considered significant; they do not relieve the lead agency of its duty to determine the significance of an impact independently.

Although the *Newhall Ranch* holding did not rule on whether a post-2020 climate change analysis is required for CEQA documents, the court did state that consistency with 2020 goals will become a less definitive guide over time and consistency with long-term emission reduction targets may be needed in the near future. Although EO B-30-15 has set forth an interim reduction target to reduce GHG emissions by 40% below 1990 levels by 2030 and EO S-03-05 has set forth a long-term reduction target to reduce GHG emissions by 80% below 1990 levels by 2050, and there are proposals at the state legislature to adopt interim (2030) and long-term (2050) binding GHG targets,[12] there is no current statewide or local GHG reduction plan that extends beyond 2020.[13] Additionally these EOs have not been codified into law.

[11]The *Newhall Ranch* holding did not rule on whether CEQA climate change analysis for post-2020 was required.

[12]The 2030 target of 40% below 1990 levels may be adopted in legislation per the proposed SB 32, which was withdrawn during the 2015 legislative term but is expected to be considered in the 2016 legislative term.

[13]EO B-30-15 requires ARB to update the scoping plan to include a plan to achieve the 2030 target, which is expected in late 2016.

However, the State and the District have shown interest in adopting regulatory programs and frameworks designed to support meeting statewide post-2020 reduction goals. For example, the Scoping Plan First Update includes some post-2020 concepts (reduction measures) either currently underway or being considered that may be incorporated in the next Scoping Plan update. Meeting the ambitious targets in EO B-30-15 and EO S-03-05 will require substantial effort at the state, regional, and local levels. Lacking an adopted post-2020 plan, the Association of Environmental Professionals (2015) recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving longer-term reduction targets identified in available plans (e.g., climate action plans), legislation, or executive orders. Currently there are no proposed or adopted significance thresholds for analyzing post-2020 emissions for development projects in California, and there are no adopted statewide or local plans to reduce emissions 40% below 1990 levels by 2030.

Currently there are no adopted bright-line quantitative thresholds relevant to the Project. The SCAQMD has adopted 10,000 MT screening significance threshold level for industrial projects (SCAQMD 2008b), and has also drafted a 3,000 MT screening significance threshold level for commercial/residential projects. The Project is a transportation project that does not fit into the industrial, commercial or residential project categories. The SCAQMD has not proposed or adopted a threshold level for transportation projects. For purposes of this analysis, both direct and indirect GHG emissions from the Project are discussed with respect to both the 10,000 and 3,000 MT threshold levels.

City of Los Angeles

The City of Los Angeles has not adopted specific Citywide significance thresholds for air quality impacts. However, because of SCAQMD's regulatory role in the Basin, the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) references the significance threshold and analysis methodologies in the SCAQMD's *CEQA Air Quality Handbook* to assist in evaluating projects proposed within the City. The following are the impact significance thresholds taken from the *CEQA Air Quality Handbook*.

Construction Emissions

According to criteria set forth in the SCAQMD *CEQA Air Quality Handbook*, *Localized Significance Threshold Methodology for CEQA Evaluations*, and *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology* guidance documents, a project would have a significant impact on construction emissions if any of the following were to occur.

- Regional emissions from both direct and indirect sources exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds a day for ROG, (2) 100 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb; or
- Localized emissions from on-site construction equipment and site disturbance activity exceed any of the following SCAQMD-prescribed threshold levels: (1) 74 pounds per day for NO_X, (2)

562 pounds per day for CO, (3) 4 pounds per day for PM10, and (4) 2 pounds per day for PM2.5.[14]

Operational Emissions

According to criteria set forth in the SCAQMD *CEQA Air Quality Handbook*, a project would have a significant impact with regard to operational emissions if:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds a day for ROG, (2) 55 pounds per day for NO_X, (3) 550 pounds per day for CO, (4) 150 pounds per day for PM10 or SO_X, (5) 55 pounds per day for PM2.5, and (6) 3 pounds per day for Pb (SCAQMD 1993, 2006);
- Localized emissions from on-site sources exceed any of the following SCAQMD prescribed threshold levels: (1) 74 pounds per day for NOx, (2) 680 pounds per day for CO, (3) 5 pounds per day for PM10, and (4) 3 pounds per day for PM2.5[15]; or
- The project would cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9 ppm, respectively, at an intersection or roadway within 0.25 mile of a sensitive receptor.[16]

Toxic Air Contaminants

According to guidelines provided in the SCAQMD CEQA *Air Quality Handbook*, a project would have a significant impact from TACs if:

- On-site stationary sources emit carcinogenic or TACs that individually or cumulatively exceed the maximum individual cancer risk of ten in one million (1.0×10^{-5}) or an acute or chronic hazard index of 1.0 (SCAQMD 1998);
- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials, posing a threat to public health and safety; or
- The project would be occupied primarily by sensitive individuals within 0.25 mile of any existing facility that emits TACs, which could result in a health risk from pollutants identified in District Rule 1401 (SCAQMD 1993).

Climate Change/Greenhouse Gas Emissions

The 2006 *L.A. CEQA Thresholds Guide* does not address climate change or GHGs. Appendix G of the State CEQA Guidelines does address this topic and the following significance threshold will be used.

The Project would be considered to have a significant impact if it would:

---

[14] Derived from SCAQMD Localized Significance Threshold Tables – SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1 acre site, 25-meter receptor distance.

[15] Derived from SCAQMD Localized Significance Threshold Tables – SRA 1 (Central Los Angeles County) and SRA 2 (Northwest Los Angeles County Coastal), 1 acre site, 25-meter receptor distance.

[16] Where the CO standard is exceeded at the intersection, a project would result in a significant impact if the incremental increase due to the project is equal to or greater than 1.0 ppm for the California 1-hour CO standard or 0.45 ppm for the 8-hour CO standard.

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Transportation Conformity

The Project is a transportation project seeking FTA approval. Thus, the Project is subject to transportation conformity requirements at both the regional and project level.

Regional Conformity

The Project is located in an extreme nonattainment area with regard to the federal 8-hour ozone standard. Because ozone and its precursors are regional pollutants, the Project must be evaluated under the transportation conformity requirements described earlier. An affirmative regional conformity determination must be made before the Project can proceed. Such a determination is not required if the Project is described in an approved RTP and TIP and the Project has not been altered in design concept or scope described in said RTP and TIP documents.

Project-Level Conformity

As stated above, if a project is located in a non-attainment or maintenance area for localized pollutants, then a hot-spot analysis and possible emission reduction measures to address that pollutant are required. Project level hot-spot analyses are only required for localized pollutants (i.e., CO, PM10, and PM2.5).

Carbon Monoxide

The Project is located in a maintenance area with regard to the federal CO standard. Consequently, the evaluation of transportation conformity for CO is required. The CO transportation conformity analysis is based on the Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) developed for the California Department of Transportation (Caltrans) by the Institute of Transportation Studies at the University of California, Davis (Garza et al. 1997) and is consistent with the assumptions used in the RTP regional emissions analysis. This CO protocol details a step-by-step procedure to determine whether project-related CO concentrations have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS and CAAQS for CO.

Project traffic during the operational phase of the Project would have the potential to create congestion at nearby intersections, thereby potentially leading to localized CO hot spots. Intersections were screened to capture those intersections that displayed the worst (i.e., longest) delay and highest peak hour traffic volumes. From this screening five intersections were selected for analysis of potential localized CO hot-spot impacts. These intersections represent the worst traffic conditions in the vicinity of the Project. This screening analysis was completed for each alternative (SCAQMD 1993).

CO hot-spot impacts were evaluated through CO dispersion modeling using the EMFAC 2014 web-tool, the CALINE4 model, and traffic data provided by the traffic engineers. CO emissions were modeled for existing year 2016 (2014–2015 traffic data), and the opening year (2020) and horizon year (2040) no-Project and with-Project build alternatives at the five selected intersections. Each intersection was modeled under no-Project and with-Project traffic conditions to note the projected net change in CO concentrations. CO emission rates were based on an SCAQMD average fleet operating under winter emission rate conditions and an average speed of 5 mph. The above method provides a conservative (tending to overestimate impacts) analysis because vehicle CO emission rates are highest at both low travel speeds and in cold air temperatures.

PM10 and PM2.5

The Project is located in a nonattainment area for the federal PM10 and PM2.5 standards. Consequently, project-level conformity determinations for PM10 and PM2.5 are required. In December 2010, EPA finalized conformity guidance for determining which transportation projects must be analyzed for local air quality impacts in PM2.5 and PM10 nonattainment and maintenance areas (FHWA and EPA 2010). The final rule requires PM10 and PM2.5 hot-spot analyses to be performed for a project of air quality concern (POAQC) or any other project identified by the PM10 or PM2.5 SIP as a localized air quality concern.

In November 2015 EPA updated the conformity guidance for quantifying local air quality impacts of transportation projects on PM2.5 and PM10 to reflect the MOVES2014 emissions model and its revisions—*Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (EPA 2015c). This guidance requires lead agencies to conduct a quantitative hot-spot analysis for projects in PM2.5 and PM10 nonattainment and maintenance areas. The FHWA and EPA guidance identifies examples of projects that are most likely POAQCs and details a qualitative step-by-step screening procedure to determine whether project-related particulate emissions have a potential to generate new air quality violations, worsen existing violations, or delay attainment of NAAQS for PM2.5 or PM10.

POAQCs are certain highway and transit projects that involve significant levels of diesel traffic or any other project identified in the PM2.5 or PM10 SIP as a localized air quality concern. As noted in EPA's March 2006 final rule, the following are examples of POAQCs.

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) where 8 percent or more of such AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operating at level of service [LOS] D, E, or F) that has a significant increase in the number of diesel trucks;
- Similar highway projects that involve a significant increase in the number of diesel transit busses and/or diesel trucks;
- A major new bus or intermodal terminal that is considered to be a "regionally significant project" under 40 CFR 93.101; and
- An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50 percent or more as measured by bus arrivals.

As noted in EPA's March 2006 final rule, the examples below are projects that are not of air quality concern:

- Any new or expanded highway project that primarily serves gasoline vehicle traffic (i.e., does not involve a significant number or increase in the number of diesel vehicles), including such projects involving congested intersections operating at LOS D, E, or F;
- An intersection channelization project or interchange configuration project that involves either turn lanes or slots or lanes or movements that are physically separated. These kinds of projects improve freeway operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM2.5 or PM10 violations;
- Intersection channelization projects; traffic circles or roundabouts; intersection signalization projects at individual intersections; and interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, do not involve any increases in idling, and would be expected to have a neutral or positive influence on PM2.5 or PM10 emissions as a result;
- A new or expanded bus terminal that is served by non-diesel vehicles (e.g., compressed natural gas) or hybrid-electric vehicles; and
- A 50 percent increase in daily arrivals at a small terminal (e.g., a facility with 10 buses in the peak hour).

For projects identified as not being a POAQC, PM2.5 and PM10 (for regions without an approved conformity SIP) hot-spot analyses are not required. For these types of projects, state and local project sponsors should briefly document in their project-level conformity determinations that federal CAA and 40 CFR 93.116 requirements were met without a hot-spot analysis, because such projects have been found to not be of air quality concern under 40 CFR 93.123(b)(1).

For areas with an approved conformity SIP, the final rule does not apply (i.e., when a state withdraws the existing provisions from its approved conformity SIP and EPA approves the withdrawal, or when a state includes the revised PM10 hot-spot requirements in a SIP revision and EPA approves that SIP revision). For these areas, the assessment should continue to follow the PM10 hot-spot procedures in their existing conformity SIPs until the SIP is updated and subsequently approved by EPA.

Although the guidance for conducting a PM10 hot-spot analysis for conformity purposes contains separate requirements for PM10 nonattainment/maintenance areas with and without approved conformity SIPs, guidance from EPA indicates that there are no areas within California where a conformity SIP has been approved. Consequently, all projects that are POAQCs must undergo PM10 (and PM2.5) hot-spot conformity determinations. Projects identified as not being a POAQC do not require qualitative PM2.5 and PM10 hot-spot analyses. Because the Project would be located in an area classified as a nonattainment area for the PM2.5 standard, a determination must be made as to whether it would result in a PM2.5 hot spot. This determination is made below under the section heading *Local CO and PM Hot-Spot Analyses/Project-Level Conformity.*

Criteria Pollutants, TAC, and GHG Emissions

Construction

Construction of the Project would result in the short-term generation of criteria pollutant and TAC emissions. Mass daily combustion exhaust, fugitive dust (PM10 and PM2.5), and fugitive off-gassing paving emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Roadway Construction Emissions Model, version 7.4.1 and the California Emissions Estimator Model (CalEEMod), version 2013.2.1. Both models estimate criteria pollutant and GHG emissions associated with construction. CalEEMod also estimates emissions associated with project operations. Each phase of construction would result in combustion exhaust emissions from on-site construction equipment and construction workers' commutes. All emissions calculation worksheets and air quality modeling output files are provided in Appendix A.

Operations

VMT Estimation

Some streetcar riders will use the streetcar to replace trips that were formerly made by car. The tool provided by the FTA for estimating transit ridership is the Simplified Trips-On-Project Software (STOPS) model. The STOPS model also produces an estimate of person miles traveled (PMT) by automobile that would be reduced as a result of a project. For existing and future years of the Project, Metro used the STOPS model to estimate streetcar ridership and reduced PMT by auto.

To convert reduced auto PMT to reduced VMT, an average vehicle occupancy factor was applied. This factor was derived from the City of Los Angeles Travel Demand Model, and it accounts for cars that carry more than one person (Fehr & Peers 2013). Table 3 shows the STOPS model estimates of daily riders and associated auto person miles reduced, as well as the calculated estimates of vehicle miles reduced, for each of the four project alternatives.

To assess the benefit of reduced VMT on air quality, the speeds of vehicles traveling these miles were estimated using results from the City of Los Angeles Travel Demand Model (Fehr & Peers 2013). This is important because mobile exhaust emissions rates vary by travel speed. For example, grams per mile emission rates are lower for all mobile exhaust pollutants at 55 mph than at 5 mph. As such, VMT is more useful when quantifying emissions when apportioned by travel speed, rather than "total" or "average speed" metrics. The aggregated estimate of total VMT reduction, as derived from the STOPS model, was apportioned into speed bins (0–5 mph, 6–10 mph, 11–15 mph, etc.). These VMT estimates by travel speed and CT-EMFAC2014, the emissions model developed by ARB and Caltrans, are then used to estimate project emissions reductions by Build Alternative. Tables 4, 5, and 6 provide estimates of project vicinity VMT reductions anticipated to occur under the Build Alternative, when compared to the No Project Alternative, by speed bin for each of the four Build Alternatives for existing and future years.

Emissions Calculations

As discussed above, the Project is anticipated to have an effect on local VMT and travel speeds. As such, the Project would have an effect on mobile-source criteria pollutant, MSAT, and GHG emissions. Changes in mobile-source emissions associated with regional traffic were estimated using Caltrans' CT-EMFAC2014 emissions model (Version 6.0) and VMT data discussed above.

Table 3. LA Streetcar Daily Ridership and Auto Travel Reduction Estimates

Alternative	2015			2020			2040		
	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced (1)	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced (1)	Riders	Auto Person Miles Reduced	Auto Vehicle Miles Reduced (1)
2 - 7th Street with Grand Avenue Extension	5,134	8,448	6,813	5,583	8,893	7,172	7,379	10,672	8,606
3 - 7th Street without Grand Avenue Extension	3,795	6,775	5,464	4,123	7,098	5,724	5,434	8,391	6,767
4 - 9th Street with Grand Avenue Extension	5,301	8,301	6,694	5,773	8,748	7,055	7,660	10,539	8,499
5 - 9th Street without Grand Avenue Extension	3,522	6,042	4,873	3,851	6,352	5,123	5,170	7,592	6,123

(1) Auto occupancy conversion factor (1.24 persons/vehicle) taken from City of Los Angeles Travel Demand Model.
Source: Carter pers. comm.

Table 4. Existing/Baseline Year 2015 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

% Allocation Proportions (1)	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,410	1,131	1,386	1,009
10.2%	6–10	695	557	683	497
10.8%	11–15	736	590	723	526
17.7%	16–20	1,206	967	1,185	862
14.5%	21–25	988	792	971	707
7.0%	26–30	477	382	469	341
4.6%	31–35	313	251	308	224
3.2%	36–40	218	175	214	156
3.8%	41–45	259	208	254	185
3.3%	46–50	225	180	221	161
2.1%	51–55	143	115	141	102
1.3%	56–60	89	71	87	63
0.5%	61–65	34	27	33	24
0.2%	66–70	14	11	13	10

Source: Compiled by ICF International; see Appendix A for EMFAC model output sheets.
(1) Source: Fehr & Peers 2013.

Table 5. Future Year 2020 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

% Allocation Proportions [1]	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,485	1,185	1,460	1,060
10.2%	6–10	732	584	720	523
10.8%	11–15	775	618	762	553
17.7%	16–20	1,269	1,013	1,249	907
14.5%	21–25	1,040	830	1,023	743
7.0%	26–30	502	401	494	359
4.6%	31–35	330	263	325	236
3.2%	36–40	229	183	226	164
3.8%	41–45	273	218	268	195
3.3%	46–50	237	189	233	169
2.1%	51–55	151	120	148	108
1.3%	56–60	93	74	92	67
0.5%	61–65	36	29	35	26
0.2%	66–70	14	11	14	10

Source: Compiled by ICF International; see Appendix A for EMFAC model output.
(1) Source: Fehr & Peers 2013.

Table 6. Future Year 2040 Allocation of Daily Estimated VMT Reductions to 5 mph Speed Bins

% Allocation Proportions (1)	Speed Bin (mph)	Alternative 2	Alternative 3	Alternative 4	Alternative 5
20.7%	0–5	1,782	1,401	1,759	1,267
10.2%	6–10	878	690	867	625
10.8%	11–15	929	731	918	661
17.7%	16–20	1,523	1,198	1,504	1,084
14.5%	21–25	1,248	981	1,232	888
7.0%	26–30	602	474	595	429
4.6%	31–35	396	311	391	282
3.2%	36–40	275	217	272	196
3.8%	41–45	327	257	323	233
3.3%	46–50	284	223	280	202
2.1%	51–55	181	142	178	129
1.3%	56–60	112	88	110	80
0.5%	61–65	43	34	42	31
0.2%	66–70	17	14	17	12

Source: Compiled by ICF International; see Appendix A for EMFAC model output.
(1) Source: Fehr & Peers 2013.

This page intentionally left blank.

Construction Impacts

Regional Construction Impacts

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources. The equipment mix and duration for each construction stage is detailed in the Road Construction Model and CalEEMod printout sheets provided in Appendix A.

The total amount of construction, the duration of construction, and the intensity of construction activity could have a substantial effect upon the amount of construction emissions, the concentrations, and the resulting impacts occurring at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., fewer daily emissions occurring over a longer time interval).

Table 4 shows the emissions calculated for construction of the Project. Table 8 shows that criteria pollutant emissions would be less than the applicable SCAQMD significance thresholds, and as such, impacts to regional air quality during construction would be less than significant.

Table 8. Worst-Case Regional Construction Emissions (pounds per day)

Phase	Pb	ROG	NO_X	CO	SO_X	PM10	PM2.5
Road Demolition and Excavation	<1	11	92	70	<1	16	7
Drainage/Utilities/Subgrade Work	<1	7	71	37	<1	9	5
Track and TPSS Installation, Paving	<1	3	27	17	<1	2	2
Maintenance Facility Construction	<1	70	35	21	<1	2	2
Concurrent Track Installation and Maintenance Facility Construction	<1	73	62	38	<1	4	4
SCAQMD Significance Threshold	3	75	100	550	150	150	55
Threshold exceeded for any phase?	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Note: Construction Road Emissions Model and CalEEMod modeling output sheets are provided in Appendix A.							

Local Construction Impacts

In addition to regional emissions thresholds, the SCAQMD has developed Localized Significance Threshold (LST) and a set of mass emissions rate look-up tables that can be used to evaluate localized impacts that may result from construction-period emissions. If the on-site emissions from proposed construction activities are below the LST emission levels found in the LST mass rate look-up tables for the project vicinity SRA, then project emissions would not have the potential to cause a significant localized air quality impact.

When quantifying mass emissions for LST analysis, only emissions that occur on site are considered. Consistent with SCAQMD LST guidelines, emissions related to off-site delivery/haul truck activity and employee trips are not considered in the evaluation of localized impacts. Table 9 presents a conservative estimate of the Project's construction-period mass emissions. Table 9 shows that the worst-case maximum emissions for all NO_X, PM10 and PM2.5 would exceed their respective SCAQMD localized significance thresholds. As such, localized impacts would be significant prior to incorporation of mitigation measures.

Table 9. Worst-Case Localized Construction Emissions, Unmitigated (pounds per day)

Phase	NO_X	CO	PM10[a]	PM2.5[a]
Road Demolition and Excavation	94	52	6	5
Drainage/Utilities/Subgrade Work	70	45	5	5
Track and TPSS Installation, Paving	26	13	2	2
Maintenance Facility Construction	20	11	2	1
SCAQMD Localized Significance Thresholds[b]	74	680	5	4
Threshold exceeded for any phase?	**Yes**	**No**	**Yes**	**Yes**

Note: Construction Road Emissions Model and CalEEMod output sheets are provided in Appendix A.

[a] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[b] The project site is located in SCAQMD SRA Number 1. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and project area that could be under construction on any given day (1 acre) that is within 25 meters of an individual sensitive receptor location.

Toxic Air Contaminants

The greatest potential for TAC emissions would be related to diesel particulate matter emissions associated with heavy equipment operations during site grading activities. Construction activities associated with the Project would be sporadic, transitory, and short term in nature. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period, construction of the Project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. As such, project-related toxic emission impacts during construction would not be significant.

Operational Impacts

Regional Operations Impacts

Regional Conformity

The Project is included in the SCAG 2012–2035 RTP/SCS Amendment #1 (SCAG 2012a) and the SCAG 2013 Federal Transportation Improvement Program (FTIP) Amendment #13-04 under project identification number LA0G901 (SCAG 2012b). The 2012-2035 RTP/SCS Amendment #1 and 2013 FTIP Amendment #13-04 were found to be conforming by FTA/FHWA on July 14, 2013. The project design concept and scope as described in this report is consistent with the project description in the currently conforming RTP/SCS and FTIP. As such, the Project's regional conformity determination requirement is satisfied. SCAG has issued the Draft 2016-2040 RTP/SCS which includes the Project (SCAG 2015). Based on the Transportation Conformity Analysis in the Draft 2016-2040 RTP/SCS, the Project's regional conformity determination requirement is expected to continue to be satisfied.

Regional Mass Emissions

Regional air pollutant emissions associated with project operations would result from (1) the net change in passenger VMT that would occur within the project area under each build condition compared to the no-build condition, (2) employee trip (mobile-source) and energy demand emissions (area and stationary-source) related to maintenance and storage facility lighting and temperature control, and (3) the net change electricity generation emissions needed to power streetcar operations.

Based on the VMT estimates derived above under the methodology sub-section *VMT Estimation*, the Project is anticipated to result in a reduction of project vicinity VMT that would be due primarily to diversion of private automobile trips that would occur under each Build Alternative when compared to the No-Build Alternative. Table 10 lists the emission reductions that were estimated to occur for each year and Project Build Alternative.

Table 10. Estimated Change in Passenger Vehicle Emissions due to VMT Reduction during Operations (pounds per day)

Year	Alternative	Daily VMT Reduction	Pb[a]	ROG	NO_X	CO	SO_X	PM10	PM2.5
2015 2020 2040	Alternative 1 Existing No Project No Project	0	NA	NA	NA	NA	NA	NA	NA
2015	Existing plus Project[a]								
	Alternative 2	6,813	0	(7)	(12)	(38)	(<1)	(1)	(1)
	Alternative 3	5,464	0	(6)	(9)	(31)	(<1)	(1)	(<1)
	Alternative 4	6,694	0	(7)	(12)	(37)	(<1)	(1)	(1)
	Alternative 5	4,873	0	(5)	(8)	(27)	(<1)	(1)	(<1)
2020	Future Year								
	Alternative 2	7,172	0	(5)	(9)	(24)	(<1)	(1)	(<1)
	Alternative 3	5,724	0	(7)	(7)	(19)	(<1)	(1)	(<1)
	Alternative 4	7,055	0	(5)	(9)	(23)	(<1)	(1)	(<1)
	Alternative 5	5,123	0	(4)	(7)	(17)	(<1)	(1)	(<1)
2040	Future Year								
	Alternative 2	8,606	0	(3)	(9)	(13)	(<1)	(1)	(<1)
	Alternative 3	6,767	0	(2)	(7)	(10)	(<1)	(1)	(<1)
	Alternative 4	8,499	0	(3)	(9)	(13)	(<1)	(1)	(<1)
	Alternative 5	6,123	0	(2)	(6)	(9)	(<1)	(1)	(<1)

[a] EPA in 1996 phased out the use of Pb as a fuel additive for on-road vehicles. As such, current fuel blends for on-road vehicles contains no Pb. Therefore, on-road motor vehicle exhaust contains no Pb emissions.
NA = not applicable.
Source: ICF International 2016.
Note: CT-EMFAC2014 modeling output sheets are provided in Appendix A.

The CT-EMFAC2014 model was used to estimate the emission reductions shown above in Table 10 that would result from the reduction of daily VMT under each Build Alternative. The CalEEMod model was used to estimate emissions related to maintenance and storage facility operations. Emissions related to streetcar operations were estimated based on an engineering estimate of system energy demand. Table 11 summarizes the emissions from all of these sources. To be conservative, passenger vehicle emissions shown below in Table 11 are for the 2015 Existing plus Project Build Alternative 5, which results in the smallest emission reduction. Table 11 shows that regional mass emissions would be less than significant.

Table 11. Estimate of Operations-Period Mass Emissions (pounds per day)

	Pb[a]	ROG	NO_X	CO	SO_X	PM10	PM2.5
Net Passenger Vehicle Emissions 2015 Existing plus Project Build Alternative 5	0	(5)	(8)	(27)	(<1)	(1)	(<1)
Maintenance Facility Emissions	0	1	2	7	<1	1	<1
Streetcar Operations Emissions	0	<1	3	2	<1	<1	<1
Total Project Emissions	0	(4)	(3)	(18)	<1	<1	<1
SCAQMD Significance Threshold	3	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**	**No**

[a] EPA in 1996 phased out the use of Pb as a fuel additive for on-road vehicles. As such, current fuel blends for on-road vehicles contains no Pb. Therefore, on-road motor vehicle exhaust contains no Pb emissions.
Source: ICF International 2016.
Note: CT-EMFAC and CalEEMod modeling output sheets are provided in Appendix A.

Local Operational Impacts

Emissions associated with maintenance and storage facility operations were estimated using the SCAQMD CalEEMod model. With respect to local mass emissions, Table 12, below, shows that on-site operations-period emissions associated with maintenance and storage facility operations would be below SCAQMD's localized significance thresholds. Impacts from emissions of these criteria pollutants would be less than significant.

Table 12. Estimate of Operation-Period Localized Emissions (pounds per day)

Local Operational Emissions	**CO**	**NO_X**	**PM10**	**PM2.5**
On-site Area Source [a] (Maintenance and Storage Facility)	<1	<1	<1	<1
SCAQMD Daily Significance Threshold (LST)	680	74	2	1
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes:
[a] On-site emissions calculated using the CalEEMod emissions model (area-source emissions). Model output sheets are provided in Attachment B.
The project site is located in SCAQMD SRA 1. LSTs are based on the site location SRA, distance to the nearest sensitive-receptor location from the project site (25 meters), and the project area (1 acre).
Source: ICF International 2016.

Local CO and PM Hot-Spot Analyses/Project-Level Conformity

Carbon Monoxide

Within an urban setting, vehicle exhaust is the primary source of CO. Consequently, the highest CO concentrations are generally found close to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as the distance from the emissions source (i.e., congested intersection) increases. For purposes of providing a conservative worst-case impact analysis, CO concentrations are typically analyzed at congested intersection locations. If impacts are less than significant close to congested intersections, impacts will also be less than significant at more distant sensitive-receptor locations.

Project traffic during the operational phase of the Project would have the potential to create local area CO impacts. To ascertain the Project's potential to generate localized air quality impacts, the project-specific traffic impact analysis (Intueor 2015) was reviewed to determine the potential for the creation of localized CO hot spots at congested intersection locations. SCAQMD recommends a hot spot evaluation of potential localized CO impacts when volume to capacity (V/C) ratios are increased by two percent or more at intersections with an LOS of D or worse. The traffic impact analysis identified 65 key intersection locations along routes that accommodate much of the traffic traveling within the project area. Of the 65 key intersection locations, the traffic analysis concluded that for the opening year 2020 and horizon year 2040, five intersections could potentially create a localized CO hot spot with the Project under any of the build alternatives.[17]

For these five intersections, local area CO concentrations were predicted using the CALINE4 traffic pollutant dispersion model with EMFAC2014 emissions factors. Traffic data for the p.m. peak hour was used, as volumes are generally higher and LOS lower during the p.m. peak hour than during the a.m. peak hour. The analysis of CO impacts followed the protocol recommended by the California Department of Transportation, published as *Transportation Project-Level Carbon Monoxide Protocol*, (Garza et al. 1997, reissued 2010). It is also consistent with procedures identified through SCAQMD's CO modeling protocol, with all four corners of each intersection analyzed to determine whether project development would result in a CO concentration that exceeds federal or state CO standards.

Table 13 presents the estimated 1- and 8-hour CO concentrations for the existing conditions, the project opening year 2020 and horizon year 2040. Table 13 shows that the Project would not have a significant impact on 1-hour or 8-hour local CO concentrations due to mobile source emissions.

Because significant impacts would not occur at the intersections with the highest traffic volumes or lowest LOS located adjacent to sensitive receptors under any alternative, no significant impacts are anticipated to occur at any other locations in the study area because the conditions yielding CO hot spots would not be worse than those occurring at the analyzed intersections. Consequently, the sensitive receptors that are included in this analysis would not be significantly affected by CO emissions generated by increases in traffic that could occur with the Project. Because no project alternative would cause an exceedance or exacerbate an existing exceedance of an AAQS, localized operational air quality impacts would be less than significant. No mitigation measures are necessary.

Particulate Matter

The Project is within a nonattainment area for federal PM2.5 and PM10 standards. Therefore, per 40 CFR Part 93, project-level analyses are required for conformity purposes. However, EPA does not require hot-spot analyses for projects that are not listed in section 93.123(b)(1) as a POAQC. The Project does not qualify as a POAQC for the following reasons:

- The Project is not a new or expanded highway project that would have a significant increase in the number of diesel vehicles;

[17] Based on SCAQMD-recommended screening criteria, any intersection that (1) operates at LOS D or worse, and (2) would experience an increase in peak-hour volume to capacity ratio of 2 percent or more as a result of project-related traffic, should be evaluated for potential to create a localized CO hot spot.

- The Project would not affect intersections that operate at poor LOS with a significant number of diesel vehicles;
- The Project would not include the construction of a new bus or rail terminal that would significantly increase the number of diesel-powered vehicles congregating in a single location;
- The Project would not expand an existing bus or rail terminal that would significantly increase the number of diesel-powered vehicles congregating in a single location; and
- The Project would not be located in nor affect any location, area, or categories of sites that are identified in the PM2.5 and PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Therefore, the Project meets the CAA requirements and 40 CFR 93.116 without any explicit hot-spot analysis. The Project would not create a new, or worsen an existing, PM10 or PM2.5 violation.

This page intentionally left blank.

Table 13. Modeled Maximum Carbon Monoxide Concentrations (ppm) at Receptors in the Vicinity of Affected Intersections during the PM Peak Hour

Intersection	Existing Year 2015								Opening Year 2020								Horizon Year 2040							
	1-hour				8-hour				1-hour				8-hour				1-hour				8-hour			
	Exist.	7th St Alt.	9th St Alt.	Signif. Impact?	Exist.	7th St Alt.	9th St Alt.	Signif. Impact?	No Project	7th St Alt.	9th St Alt.	Signif. Impact?	No Project	7th St Alt.	9th St Alt.	Signif. Impact?	No Project	7th St Alt.	9th St Alt.	Signif. Impact?	No Project	7th St Alt.	9th St Alt.	Signif. Impact?
Olive St./5th St.	6.4	6.4	6.4	No	5.6	5.6	5.6	No	6.0	6.0	6.0	No	5.3	5.3	5.3	No	5.7	5.7	5.7	No	5.1	5.1	5.1	No
Figueroa St./7th St.	6.4	6.4	6.3	No	5.6	5.6	5.6	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No	5.7	5.7	5.7	No	5.2	5.1	5.1	No
Figueroa St./8th St.	6.8	6.9	6.8	No	6.0	6.0	6.0	No	6.2	6.3	6.3	No	5.5	5.6	5.6	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No
Olive St./9th St.	7.3	7.3	7.5	No	6.3	6.4	6.5	No	7.3	6.6	6.6	No	6.4	5.7	5.7	No	6.2	6.2	6.2	No	5.5	5.5	5.5	No
Figueroa St./Olympic Blvd.	6.8	6.8	6.9	No	6.0	6.0	6.0	No	6.2	6.2	6.2	No	5.5	5.5	5.5	No	5.9	5.9	5.9	No	5.2	5.2	5.2	No

Notes:
NA = Not applicable.
Background concentrations of 5.1 and 4.6 ppm were added to the modeling for 1- and 8-hour results, respectively, based on SCAQMD projected future-year concentrations for Central Los Angeles (SCAQMD 2014a, 2014b).
The federal and state 1-hour standards are 35 and 20 ppm, respectively.
The federal and state 8-hour standards are 9 and 9.0 ppm, respectively. The difference lies in the rounding convention.
Source: EMFAC2014 and CALINE4 modeling by ICF (Appendix A); Intueor 2013, 2015

This page intentionally left blank.

Toxic Air Contaminants/Mobile-Source Air Toxics

The purpose of the Project is to enhance mobility and transit circulation in downtown Los Angeles. The Project has been determined to generate minimal air quality impacts related to CAA criteria pollutants and has been shown not to result in MSAT concerns. While the Project would not result in meaningful changes in traffic volumes or vehicle fleet mix, VMT would be reduced under each Build Alternative when compared to the No-Build Alternative. Since MSAT emissions are a function of VMT, reductions in VMT would lead to reductions in project vicinity MSAT emissions. As such, potential impacts would be less than significant.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while during this same time vehicle-miles of travel are projected to increase by over 100 percent (FHWA 2012). This will further reduce the background level of MSATs.

Climate Change/Greenhouse Gas Emissions

Global climate change is caused by combined worldwide GHG emissions, and mitigating global climate change will require worldwide solutions. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, CO_2, N_2O, CH_4, O_3, and certain hydro- and fluorocarbons. This phenomenon, known as the "greenhouse effect," keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as O_3 precursors) and TACs, which are pollutants of regional and local concern.

One of the main strategies to reduce California GHG emissions is to make California's transportation system more efficient. Projects that reduce VMT or relieve congestion will lead to an overall reduction in GHG emissions. Also, during construction, existing ARB regulations (Title 13 of the California Code of Regulations, Sections 2480 and 2485), which limit idling of diesel-fueled commercial motor vehicles, would help to limit GHG emissions associated with project-related construction vehicles.

Table 14 presents an estimate of project-related GHG emissions. The net change in GHG emissions due to the Project depends on the level of ridership (and consequent reduction in VMT) that the Project attracts. Under the lowest ridership forecast of Build Alternative 5, the Project is estimated to result in a net decrease in GHG emissions of 335 metric tons per year. Net GHG emissions reductions under all other Build Alternatives would be greater than 335 metric tons per year. As such, project GHG emissions under all Build Alternatives would remain below the significance threshold of 10,000 $MTCO_2e$ per year that SCAQMD applies to industrial emissions sources (SCAQMD 2008b). In addition, project GHG emissions under all Build Alternatives would remain below the SCAQMD draft screening significance threshold of 3,000 MT per year for commercial/residential projects. Thus, project impacts related to GHG emissions would be less than significant under all Build Alternatives, and no mitigation measures are necessary.

Table 14. Project-related Greenhouse Gas Emissions during Operation under the 2015 plus Project Condition (Metric Tons CO_2e per Year)

Source Description	Build Alternative 2	Build Alternative 3	Build Alternative 4	Build Alternative 5
Net Passenger Vehicle Emissions	(1,865)	(1,496)	(1,833)	(1,334)
Maintenance and Storage Facility Emissions[1]	375	375	375	375
Streetcar Operations Emissions[2]	573	573	573	573
Amortized Construction Emissions[1]	51	51	51	51
Total Project Emissions	(866)	(497)	(834)	(335)

Notes:
[1] Road Construction Emissions Model and CalEEMod output sheets are provided in Appendix A.
[2] Project predicted to have electricity demand of 60,115 kilowatt-hours per week (see calculations in Appendix A).
Source: ICF International 2013, 2016.

Consistency with GHG Reduction Plans

SB 375 was enacted to reduce GHG emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under the law, SCAG is tasked with developing an SCS, a newly required element of the 2012-2035 RTP that provides a plan for meeting emissions reduction targets set forth by ARB.

On September 23, 2010, ARB issued a regional 8 percent per capita reduction target for the planning year 2020, and a conditional target of 13 percent for 2035 for the SCAG region. The currently conforming SCAG 2012-2035 RTP/SCS successfully achieves and exceeds these GHG emission-reduction targets set by ARB by achieving a 9 percent reduction by 2020 and 16 percent reduction by 2035 compared to the 2005 level on a per capita basis. The Project is also identified in the recently adopted (April 2016), but not yet approved by EPA, SCAG 2016-2040 RTP/SCS, which also meets SB 375 GHG per capita reduction targets.

Because the proposed Project is identified in the currently conforming SCAG 2012 RTP/SCS (project number LA0G901) and recently adopted SCAG 2016-2040 RTP/SCS, project emissions would not conflict with any plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Project GHG emissions would be less than significant. No mitigation measures are necessary.

Mitigation Measures

As shown above in Table 9, localized emissions of NO_X, PM10, and PM2.5 during construction are predicted to exceed SCAQMD significance thresholds without incorporation of mitigation measures. The following mitigation is prescribed to reduce impacts that may result from local construction emissions.

MM-AQ-C1: Use cleaner-burning off-road construction equipment per the following schedule: All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet the Tier 4 emission standards, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by ARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations.

MM-AQ-C2: Limitation on concurrent construction activities: Work related to utilities relocation and/or installation shall not occur during periods of road excavation.

A copy of each unit's certified tier specification, BACT documentation, and ARB or SCAQMD operating permit shall be provided to the City's project manager at the time of mobilization of each applicable unit of equipment.

Level of Significance after Mitigation

As shown below in Table 15, prescribed Mitigation Measure AQ-1 would reduce off-road NO_X, PM10 and PM2.5 exhaust emissions by approximately 36 percent, 53 percent, and 51 percent, respectively. With mitigation, worst-case localized NO_X emissions would be reduced from 94 pounds (lb)/day to 61 lb/day, which would be below the SCAQMD LST of 74 lb/day. Worst-case emissions of PM10 and PM2.5 would be reduced to approximately 3 lb/day and 2 lb/day, respectively, which would be below the SCAQMD LSTs of 5 lb/day and 4 lb/day, respectively. Accordingly, localized emissions during construction would be less than significant with implementation of the prescribed mitigation measures.

Table 15. Worst-Case Localized Construction Emissions with Mitigation (pounds per day)

Description	NO_X	PM10[a]	PM2.5[a]
Worst-case Emissions Prior to Mitigation	94	6	5
Emissions Reduction with Mitigation	(33)	(3)	(2)
Maximum Emissions with Mitigation	61	3	3
Localized Significance Thresholds[b]	74	5	4
Threshold Exceeded?	**No**	**No**	**No**

Source: ICF International 2013.

Note: Construction Road Emissions Model and CalEEMod output sheets are provided in Appendix A.

[a] PM10 and PM2.5 emissions estimates assume compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries.

[b] The project site is located in SCAQMD SRA Number 1. These LSTs are based on the site location SRA, distance to nearest sensitive receptor location from the project site (25 meters), and project area that could be under construction on any given day (1 acre) that is within 25 meters of any individual sensitive receptor location.

This page intentionally left blank.

Project Consistency with Regional AQMP

SCAQMD is required, pursuant to the CAA, to reduce emissions of criteria pollutants for which the Basin is in non-attainment (i.e., O_3, PM10, and PM2.5). The Project would be subject to SCAQMD's AQMP. The AQMP contains a comprehensive list of pollution control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are developed, in part, based on regional population, housing, and employment projections prepared by SCAG.

The Project would be consistent with the City of Los Angeles General Plan and it would be compatible with surrounding land uses (see EIR Section 3.8).

Because the Project would be consistent with the general plan, detailed in the Project's *Community Impact Assessment,* pursuant to SCAQMD guidelines, the Project would be considered to be consistent with the region's AQMP. As such, project-related emissions are accounted for in the AQMP, which is crafted to bring the Basin into attainment for all criteria pollutants. Accordingly, the Project would be consistent with the projections in the AQMP, thus resulting in a less-than-significant impact.

This page intentionally left blank.

SCAQMD's approach for assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state Clean Air Acts. As previously discussed, the Project would be consistent with the AQMP, which is intended to bring the Basin into attainment for all criteria pollutants.[18]

In addition, the mass regional emissions calculated for the Project and presented earlier would not exceed applicable SCAQMD daily significance thresholds, which are designed to assist the region in attaining the applicable state and national ambient air quality standards. Projects that exceed project-specific significance thresholds are considered by SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

The Project would comply with SCAQMD's Rule 403 (fugitive dust control) during construction, as well as all other adopted AQMP emissions control measures. Per SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on all projects Basin-wide, which would include all related projects. As such, cumulative impacts with respect to criteria pollutant emissions would be less than significant.

The net change in GHG emissions due to the Project depends on the level of ridership (and consequent reduction in VMT) that the Project attracts, as discussed above. Under the lowest ridership forecast of Build Alternative 5, the Project is estimated to result in a net decrease in GHG emissions of 335 metric tons per year. Net GHG emissions reductions under all other Build Alternatives would be greater than 335 metric tons per year. As such, project GHG emissions under all Build Alternatives would remain below the SCAQMD significance threshold of 10,000 $MTCO_2e$ per year and the SCAQMD draft screening significance threshold of 3,000 MT/year. And finally, since the proposed Project is identified in the SCAG 2012 RTP/SCS (project number LA0G901), project emissions would not conflict with any plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. For these reasons, the Project's contribution to global GHG emissions and climate change would be less than significant.

[18] State CEQA Guidelines Section 15064(h)(3) states "A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g. water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency."

This page intentionally left blank.

Printed References

Association of Environmental Professionals. 2015. *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments in California*. March 16, 2015. Available: http://califaep.org/images/climate-change/AEP_White_Paper_Beyond_2020.pdf.

California Air Resources Board (ARB). 1998. *The Report on Diesel Exhaust.* July. Available: http://www.arb.ca.gov/toxics/dieseltac/de-fnds.htm.

———. 2011. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*. August. Available: http://www.arb.ca.gov/cc/scopingplan/document/final_supplement_to_sp_fed.pdf.

———. 2013. *California Greenhouse Gas Inventory for 2000–2011*. August. Available: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf.

———. 2015a. California Greenhouse Gas Emission Inventory: 2015 Edition. Available: http://www.arb.ca.gov/cc/inventory/data/data.htm. Accessed: January 29, 2016.

———. 2015b. Draft Technology Assessment: Heavy Duty Hybrid Vehicles. Available: http://www.arb.ca.gov/msprog/tech/techreport/hybrid_tech_report.pdf. Accessed: January 29, 2016.

———. 2016. iADAM: Air Quality Data Statistics. Available: http://www.arb.ca.gov/adam/. Accessed: January 29, 2016.

City of Los Angeles. 2006. L.A. *CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles*. Available: http://www.environmentla.org/programs/thresholdsguide.htm. Accessed: February 17, 2016.

———. *GREEN LA: An Action Plan to Lead the Nation in Fighting Global Warming*. May. Available: http://environmentla.org/pdf/GreenLA_CAP_2007.pdf.

Council on Environmental Quality (CEQ). 2010. *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. Memorandum for Heads of Federal Departments and Agencies. February 18. Available: http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

———. 2014. Revised Draft Guidance for Greenhouse Gas Emission and Climate Change Impacts. Available: https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf. Accessed: January 28, 2016.

European Commission 2016. EDGAR – Emissions Database for Global Atmospheric Research. CO_2 time series 1990-2013 per capita for world countries. Available: http://edgar.jrc.ec.europa.eu/overview.php?v=CO2ts_pc1990-2013. Accessed: February 2, 2016.

Federal Highway Administration and U.S. Environmental Protection Agency (FHWA and EPA). 2010. *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas.* December. Available: http://www.epa.gov/otaq/stateresources/transconf/policy/420b10040.pdf.

Federal Highway Administration (FHWA). 2012. *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA.* December. Available: http://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/aqintguidmem.cfm. Accessed: June 13, 2013.

Fehr & Peers. 2013. *Memorandum: Impact of Los Angeles Streetcar on Travel and VMT*. August 26.

Garza, V. J., P. Graney, and D. Sperling. 1997. Reissued 2010. *Transportation Project-Level Carbon Monoxide Protocol*. Davis, CA: Institute of Transportation Studies, University of California, Davis.

Georgetown Climate Center. 2012. *Summary of the Federal District Court's Order Enjoining California's Low Carbon Fuel Standard*. January. Available: http://www.georgetownclimate.org/sites/default/files/Summary_of_Court_Enjoining_CA_LCFS.pdf. Accessed: June 13, 2013.

Intueor. 2013. *Restoration of Historic Streetcar Service in Downtown Los Angeles Transportation Technical Study for the Draft EIR/EA.* September.

———. 2015. Personal communications, Farid Naguib (Intueor) to Namrata Cariapa (ICF), December 17, 2015; Wahid Farhat (Intueor) to Namrata Cariapa (ICF), December 21, 2015; Wahid Farhat (Intueor) to Namrata Cariapa (ICF), December 24, 2015.

National Oceanic and Atmospheric Administration. n.d. *Climate of Los Angeles*. Available: http://www.wrh.noaa.gov/lox/climate/climate_intro.php. Accessed: June 13, 2013.

Office of Governor. 2015. Executive Order B-30-15 News Release. Available at: https://www.gov.ca.gov/news.php?id=18938. Accessed: January 28, 2016.

South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. April.

———. 1998. *SCAQMD Risk Assessment Procedures for Rules 1401 and 212*. November.

———. 2003. *Localized Significance Threshold Methodology for CEQA Evaluations*. June.

———. 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.

———. 2006. *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology*. October.

———. 2007. Air Quality Management Plan.

———. 2008a. *MATES III Final Report*. September. Available: http://www.aqmd.gov/prdas/matesIII/MATESIIIFinalReportSept2008.html.

———. 2008b. *Board Letter - Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2. Accessed: February 2, 2016.

———. 2011. *Table 1: Meteorological Sites*. Available: http://www.aqmd.gov/smog/metdata/AERMOD_Table1.html.

———. 2012. *2012 Air Quality Management Plan.*

———. 2013. *Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk.* Available: http://www3.aqmd.gov/webappl/matesiii/.

———. 2014a. Projected Future Year 1-Hour Concentration (ppm). Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed: January 25, 2016.

———. 2014b. Projected Future Year 8-Hour Concentration (ppm). Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook. Accessed: January 25, 2016.

———. 2015a. Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act. Available: http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588_guidelines.pdf?sfvrsn=2. Accessed: January 29, 2016.

———. 2015b. MATES-IV. Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed: January 29, 2016.

Southern California Association of Governments (SCAG). 2012a. *2012–2035 Regional Transportation Plan/ Sustainable Communities Strategy*. April.

———. 2012b. *2013 Federal Transportation Improvement Program.* September.

———. 2015. Draft 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. Available: http://scagrtpscs.net/Documents/2016/draft/d2016RTPSCS.pdf. Accessed: January 29, 2016.

U.S. Department of Energy. 2015. Boden, T. A., Marland, G., and Andres, R. J. National CO_2 Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2011, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2015.

U.S. Energy Information Administration. 2015. Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2013. Available: http://www.eia.gov/environment/emissions/state/analysis/. Accessed: February 2, 2016.

U.S. Environmental Protection Agency and National Highway Traffic Safety Administration (EPA and NHTSA). 2012. *Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017–2025 Cars and Light Trucks. August.* Available: http://www.epa.gov/otaq/climate/documents/420f12051.pdf.

———. 2015. Draft Environmental Impact Statement: Medium and Heavy Duty Vehicles Model Years 2018 and beyond. Available: http://www.nhtsa.gov/fuel-economy. Accessed: January 29, 2016.

U.S. Environmental Protection Agency (EPA), National Highway Traffic Safety Administration, and the California Air Resources Board. 2010. *Interim Joint Technical Assessment Report: Light-Duty*

Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017–2025. Available: http://www.arb.ca.gov/msprog/clean_cars/ldv-ghg-tar.pdf.

———. 2015a. Green Book: California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Available: http://www3.epa.gov/airquality/greenbook/anayo_ca.html. Accessed: January 29, 2016.

———. 2015b. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013. Available: http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf. Accessed: January 29, 2016.

———. 2015c. Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas. Available: http://www3.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm. Accessed: January 29, 2016.

———. 2016a. Air Data. Available: http://www3.epa.gov/airquality/airdata/. Accessed: January 29, 2016.

———. 2016b. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013. Available: http://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf. Accessed: January 29, 2016.

Western Climate Initiative (WCI). 2010. Guidance to Partners for Distributing Early Reduction Allowances. June. Available: http://www.westernclimateinitiative.org/document-archives/Cap-Setting--and--Allowance-Distribution-Committee-Documents/Guidance-for-Distributing-Early-Reduction-Allowances/.

Western Regional Climate Center. 2013. Los Angeles Civic Center, California (045115). Available: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5115.

Personal Communications

Carter, Peter. Los Angeles County Metropolitan Transportation Authority. Email to Gary Petersen, ICF International, regarding STOPS model ridership updates. April 4, 2016.

Appendix A
Air Quality Modeling Output

This page intentionally left blank.

Appendix F
Restoration of Historic Streetcar Service in Downtown Los Angeles—Phase I Environmental Site Assessment

Restoration of Historic Streetcar Service in Downtown Los Angeles
Corridor Phase I Environmental Site Assessment
Los Angeles, Los Angeles County, California

July 2013

Prepared for:

Metro
One Gateway Plaza
Los Angeles, CA 90012-2952

Prepared by:

HDR Engineering, Inc.
3200 E. Camelback Road, Suite 350
Phoenix, Arizona 85018

July 16, 2013

Metro
Attn: Susan Chivaratanond, Project Manager
One Gateway Plaza
Los Angeles, CA 90012-2952

Re: Corridor Phase I Environmental Site Assessment Report Submittal
Restoration of Historic Streetcar Service in Downtown Los Angeles
Los Angeles, Los Angeles County, California

Dear Ms. Chivaratanond:

We are pleased to provide you with the above-referenced Corridor Phase I Environmental Site Assessment report. The attached report presents our methodology, findings, opinions, conclusions, and recommendations.

HDR appreciates the opportunity to serve Metro on this important project. If you have any questions or comments, please feel free to contact us at (602) 522-7700.

Cordially,

HDR ENGINEERING, INC.

Kelly W. Kading, CPG, CHMM
Senior Professional Associate

Distribution: One electronic copy

HDR Engineering, Inc.
3200 East Camelback Road
Suite 350
Phoenix, AZ 85018-2311
Phone: (602) 522-7700
Fax: (602) 522-7707
www.hdrinc.com

Table of Contents

Table of Contents ..... **i**

List of Tables ..... **iii**

Acronyms ..... **iv**

Executive Summary **ES-1**

1.0 Introduction **1-1**

1.1 Purpose and Involved Parties 1-1

1.2 ESA Methodology 1-1

1.3 Scope of Services, Significant Assumptions, and Limitations 1-2

2.0 Site Description **2-1**

2.1 Location and Legal Description 2-1

2.2 Site and Vicinity Characteristics 2-1

2.3 Description of Structures, Roads, and Other Site Improvements 2-2

2.4 Area Geology and Hydrogeology 2-2

3.0 User-Provided Information **3-1**

4.0 Records Review **4-1**

4.1 Environmental Records Review 4-1

4.2 Summary of Listed Records 4-4

4.3 Historical Use Information 4-11

4.3.1 Fire Insurance Maps 4-11

4.3.2 Historical Aerial Photographs 4-12

4.3.3 City Directory Information 4-12

4.3.4 Historical Topographic Maps 4-12

4.4 Environmental Liens and Additional Information 4-13

4.5 Summary of Previous Environmental Investigations 4-13

5.0 Site Reconnaissance and Interviews **5-1**

5.1 Site Reconnaissance 5-1

5.2 Interview 5-1

5.3 Known Current and Past Uses of the Site and Adjoining Properties 5-1

5.4 Utilities 5-1

6.0 Data Gap Analysis **6-1**

7.0 Findings and Conclusions **7-1**

7.1 Findings 7-1

7.2 Conclusions 7-3

8.0 Recommendations 8-1
8.1 Recommendation 1 8-1
8.2 Recommendation 2 8-1
9.0 Qualifications of Environmental Professionals 9-1
9.1 Signatures and Qualifications 9-1
9.1.1 Qualifications of Environmental Professionals 9-2
10.0 References 10-1

List of Tables

Table 4-1 Summary of Environmental Database Search 4-1
Table 4-2 Hazardous Materials Release Cases 4-4
Table 4-3 Leaking Underground Storage Tank Cases 4-8
Table 4-4 Underground Storage Tank Sites 4-10
Table 4-5 Sites of Concern Identified from Sanborn Insurance Maps 4-11

List of Appendices

Appendix A Figures

Appendix B Photographic Documentation

Appendix C EDR Information

Acronyms

AAI	All Appropriate Inquiries
AIRS	Aerometric Information Retrieval System
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
CA WDS	California Waste Discharge System
Cal/EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	California Code of Regulations
CHMIRS	California Hazardous Materials Incident Reporting System
CORRACTS	Corrective Action Report
DHS	Department of Homeland Security
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EPCRA	Emergency Planning and Community Right-to-Know Act
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FINDS	Facility Index System
FRDS	Federal Reporting Data System
FTTS	Federal FIFRA/TSCA Tracking System
HDR	HDR Engineering, Inc.
HREC	Historical Recognized Environmental Condition
LPA	Locally Preferred Alternative
LUST	leaking underground storage tank
MFS	Maintenance Facility Site
MINES	Mines Master Index File
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
PADS	PCB Activity Database System

RAATS	RCRA Administrative Action Tracking System
RCRA	Resource Conservation and Recovery Act
RCRIS LQG	Resource Conservation and Recovery Information System Large Quantity Generators
RCRIS SQG	Resource Conservation and Recovery Information System Small Quantity Generators
RCRIS TSD	Resource Conservation and Recovery Information System Treatment, Storage, and Disposal
REC	Recognized Environmental Condition
RWQCB	Regional Water Quality Control Board
R/W	right-of-way
SI	site inspection
SLIC	Spills, Leaks, Investigation and Cleanup Database
SMBRP	Site Mitigation and Brownfields Reuse Program
SWF/LF	Solid Waste Facilities/Landfill
SWIS	Solid Waste Information System
SWRCB	State Water Resources Control Board
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal
TPSS	traction power substation
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VCP	Voluntary Cleanup Program

Note: An additional acronym list is located in Appendix C.

EXECUTIVE SUMMARY

HDR Engineering, Inc. (HDR) has conducted a Corridor Phase I Environmental Site Assessment (ESA) for the Restoration of Historic Streetcar Service in Downtown Los Angeles, located in Los Angeles, Los Angeles County, California. The proposed streetcar project is situated in Downtown Los Angeles from approximately 1st Street to 11th Street, and from Broadway to Figueroa Street (hereafter referenced as the project area). The project area also includes the proposed locations for the Maintenance Facility Site (MFS). The three options are the west of Broadway / north of 3rd Street MFS option, the west of Hill Street / north of 5th Street MFS option and the south of 11th Street / west of Olive Street MFS option. In addition to the project area, a one-eighth-mile surrounding vicinity was also evaluated for the purposes of this report. Figures depicting the configuration and location of the project area are included in Appendix A, with photographs included in Appendix B.

This Phase I ESA identifies recognized environmental conditions (RECs), as defined by the American Society for Testing and Materials (ASTM) Environmental (E) 1527-05 standard for the project area that may adversely affect construction or project area right-of-way acquisition (if required). In the event that a REC's regulatory issue has been resolved by the regulatory agency with jurisdiction, it may be classified as a "Historical REC" (HREC). In addition to the ASTM-based REC classification of a site, HDR also utilizes a risk ranking system to describe "sites of concern" located within the project area. A site of concern is one that the investigative process has determined to have sufficient possibility of contamination, which warrants special attention during the Phase I ESA investigation. A site of concern may or may not ultimately be classified as a REC as defined by ASTM, yet still may be "of concern" and is therefore highlighted in the report. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues associated with the site.

This ESA includes a summary of the site reconnaissance conducted on August 15-16, 2012, a review of environmental databases, and a review of historical data sources.

The ESA process resulted in the following findings and conclusions:

FINDINGS

- The project area is located in an urban area of mixed-use development in Los Angeles, California. Development in the area consists of the paved roadways of the Locally Preferred Alternative (LPA), surrounded by high-rise office buildings, music and sporting event venues, commercial and retail facilities, churches, libraries, hotels, residential complexes, multi-story parking garages, and public parks. Potential locations for the MFS within the project area currently consist of paved parking lots and a high-rise building with retail and office facilities. Locations of the traction power substations (TPSSs) are dispersed throughout the project area, adjacent to the LPA, and include parking lots, parking structures and an alley. Prior streetcar tracks have existed within the project area. Subsurface utilities typical of urban development exist within the project area, as well as subsurface petroleum exploration, production and distribution facilities.
- The Environmental Data Resources, Inc. (EDR) environmental database report identified 493 environmental records for sites located within the project area and the one-eighth-mile surrounding vicinity. Within an urban area, it is anticipated

that commercial operations will increase the number of listings in a database search. As a result, 426 of the 494 records listed are not considered to be of concern to the project. The remaining 68 records correspond to 37 sites considered to be of concern to the project. The discrepancy between the number of records and the number of sites is a result of sites often being listed in multiple databases.

- For the purposes of this report, sites listed in the State Underground Storage Tank (UST) database (and no other database) were considered a concern if the site was listed as a moderate, high and indeterminate-risk sites, as well as sites located in or adjacent to a proposed MFS or TPSS location.
- Eight additional sites of concern were identified from historical resource review (Sanborn fire insurance maps, historical aerial imagery, and city directories). The sites are considered to be of concern based on the likelihood for USTs to have previously been stored onsite. It has been the experience of HDR professionals that oftentimes subsurface contamination is present in the area of USTs not otherwise classified as a leaking UST (LUST).
- The site reconnaissance of the project area did not identify other sites of concern. No indications of large-scale, previous spills or hazardous material usage or disposal were identified within the project area. No pits, ponds, lagoons, or other indications of buried or large-scale hazardous material were identified during the reconnaissance of the project area.

CONCLUSION

HDR has identified RECs and HRECs in connection with the project area. The following statement is required by the ASTM E 1527-05 standard as a positive declaration of whether REC(s) were found:

HDR has performed a Phase I Environmental Site Assesssment (ESA) in conformance with the scope and limitations of ASTM E 1527-05 of the project area (as defined elsewhere in this report). Any exceptions to or deletions from these practices are described in the report. This report has revealed evidence of 27 Recognized Environmental Conditions (RECs) and 10 HRECs, in connection with the project area.

RECOMMENDATIONS

Based on the findings and conclusions reached in this report, HDR makes the following recommendations for the project area:

RECOMMENDATION 1

HDR recommends that a focused Preliminary Site Investigation (PSI) be conducted at specified locations adjacent to the identified sites of concern for moderate, high and indeterminate-risk sites, as well as the proposed locations for the MFS and TPSSs. A PSI in these areas will include a soil boring and laboratory analytical program, to address contaminants of concern specific to each site.

RECOMMENDATION 2

HDR recommends that all construction contractors should be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible. Contractors should be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process.

1.0 INTRODUCTION

1.1 PURPOSE AND INVOLVED PARTIES

This Corridor Phase I Environmental Site Assessment (ESA) documents the evaluation of the project area for indications of "recognized environmental conditions." A recognized environmental condition (REC) is defined by ASTM Practice E 1527-05 as: *"The presence or likely presence of any hazardous substances or petroleum products on a project site under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the project site or into the ground, groundwater, or surface water of the project site. The term includes hazardous substances or petroleum products even under conditions of storage and use in compliance with local and state laws and regulations. In the event that a site's regulatory issue has been resolved by the regulatory agency with jurisdiction, that site may be classified as a "Historical REC". This classification means that although the issue has been resolved to the satisfaction of the regulatory agency, a possibility exists that residual contamination may be present at the site. The terms "REC" and "Historical REC" are not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of regulatory agencies. Conditions determined to be de minimis are not recognized environmental conditions."*

HDR Engineering, Inc. (HDR), received authorization from Metro to conduct an ESA for the Restoration of Historic Streetcar Service in Downtown Los Angeles project, located in Los Angeles, Los Angeles County, California. This Phase I ESA has been prepared for Metro and the city of Los Angeles (the ultimate users of the report), and only Metro and the City of Los Angeles have the right to rely on the contents of this Phase I ESA.

1.2 ESA METHODOLOGY

This ESA was designed to conform to the level of documentation recommended in the ASTM standard (ASTM E 1527-05) for the performance of ESAs. Deviations from the ASTM standard include the deletion of certain records sources determined to be inapplicable or of limited value to the specific needs of this project. In accordance with HDR's contracted scope of work, HDR did not conduct interviews with property owners or operators with facilities located within the project area.

HDR included the four primary activities included in the ASTM guidance (conforming to EPA's All Appropriate Inquiry [AAI] requirements), namely (1) records review, (2) site reconnaissance, (3) review of historic data sources, and (4) preparation of this report.

In addition to the ASTM-based REC classification, HDR also employs a relative risk ranking system that includes several investigative elements to describe "sites of concern" located within a project area. A site of concern is a site that the investigative process has determined to have sufficient possibility of contamination, which warrants special attention during the Phase I ESA investigation. A site of concern may or may not ultimately be classified as a REC as defined by ASTM, yet still may be "of concern" and is therefore highlighted in the report. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues associated with the site.

Once the elements of the investigation process are completed, identified sites of concern are categorized using a subjective risk ranking system, classifying the sites as low-risk, moderate-risk, high-risk, or (in some instances) indeterminate-risk. The following paragraphs provide general descriptions of each category.

Low-risk sites are those sites that have few indications of potential for release of hazardous materials. On some occasions, sites that have had a hazardous materials issue in the past but have been remediated with approval of the local state environmental agency (or EPA) may qualify as low-risk. Examples of low-risk sites include undeveloped or agricultural property, residential property, or benign commercial properties such as office buildings, warehouses, distribution facilities, or municipal facilities with no listed violation.

Moderate-risk sites are those sites that have some indications of possible hazardous materials issues. A moderate-risk site may appear on a database as having a permit to handle hazardous materials, but has recorded no violations to date. Another way that a site could be interpreted as moderate risk would be if the environmental records search indicated no listing, but the site is an auto repair facility with visible surface staining. Examples of moderate-risk sites include auto repair garages, welding shops, or manufacturing facilities with minor listings in the environmental database.

High-risk sites are those sites that have a high potential for releasing hazardous materials to the soil or groundwater, or have a recorded release issue. Examples of high-risk sites include current service stations, bulk fueling terminals, sites listed in environmental databases as having had a release, or a known release that has not been remediated.

Indeterminate sites are those which, at the time of report preparation, did not include sufficient information to include a high, medium or low ranking. Indeterminate sites often require additional file review to determine the details of any related environmental issues at the site.

When HDR assigns a risk ranking to a site, the risk ranking criteria are reviewed and concurred with by at least one Environmental Professional as defined in ASTM. It is HDR policy to have subjective criteria cross-reviewed for accuracy and adherence to its assessment protocols and internal quality assurance standards. It is worthwhile to note that risk ranking does not directly correspond to whether a site qualifies as a REC; rather, the risk ranking system is intended as a method of categorizing sites on large projects for consideration of common contamination characteristics.

1.3 Scope of Services, Significant Assumptions, and Limitations

The services provided for this project consisted of the following:

- Provide a description of the project area including current land uses.
- Provide a general description of the topography, soils, geology, and groundwater flow direction.
- Review reasonably ascertainable and reviewable regulatory information published by federal, state, local, tribal, health, and/or environmental agencies pertaining to the project area.
- Review historical data sources for the project area, including aerial photographs, topographic maps, fire insurance maps, city directories, and other readily available development data.

- Conduct an area reconnaissance and an environmental review—including a visual inspection of adjoining properties—with a focus on indications of hazardous substances, petroleum products, polychlorinated biphenyls (PCBs), wells, storage tanks, solid waste disposal pits and sumps, and utilities.
- Prepare a written report of methods, findings, and conclusions.

The goal of this scope of services is to assist the user in identifying conditions near the project area that may indicate risks regarding hazardous materials storage, disposal, or other impacts. The resulting report may qualify the user for relief from liabilities as one of three “defenses” identified in the 2002 Brownfields Amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 9607 (AAI subsections). These three defenses include:

1. The “innocent landowner” defense to potential liabilities under 42 United States Code [U.S.C.] § 9601
2. The “contiguous project corridor owner” defense pursuant to 42 U.S.C. § 9607q
3. The “bona fide prospective purchaser” defense pursuant to 42 U.S.C. § 9607r

Federal regulations at 40 Code of Federal Regulations [C.F.R.] Part 312, promulgated by EPA, require that liability release be based (in part) on completion of AAI prior to purchase of a property. Those inquiries are documented by Phase I reports, or ESAs. EPA has agreed that the recently developed ASTM guidance (ASTM Practice E 1527-05) specifies and interprets AAI requirements.

A user is defined by ASTM Practice E 1527-05 as the party seeking to use Practice E 1527 to complete an ESA of the project area and may include a potential purchaser of land at the project area, a potential tenant of the project area, an owner of land at the project area, a lender, or a project area manager. Investigative areas not included in the standard ASTM ESA scope include: asbestos, lead-based paint, lead in drinking water, radon, urea formaldehyde, wetland issues, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, and high voltage power lines. The scope of services for ESA projects also does not include the completion of soil borings, the installation of groundwater monitoring wells, or the collection of soil or groundwater samples. Likely sources of vapor intrusion, from potential on-site or off-site sources, are identified. State and national policies and standards relevant to vapor intrusion are in flux and subject to change.

HDR has made certain assumptions in preparing the scope of this assessment:

- Data gathered from public information sources (i.e., libraries or public regulatory agencies) are accurate and reliable.
- Site operations reflect site conditions relative to potential releases, and no intentional concealment of environmental conditions or releases has occurred.
- Interview information (if gathered) is directly reported as gathered by the assessor and is limited by the accuracy of the interviewee’s recollection and experience.

- Published geologic information and site observations made by the environmental professional are used to estimate likely contaminant migration pathways in the subsurface. These estimates by the environmental professional are limited in accuracy and are generally cross-referenced with existing information about similar sites and environmental releases in the area.

Regulatory information is limited to sites discovered after the late 1980s because reliable records were not kept by regulatory agencies prior to that time frame.

Where a REC has resulted from historical uses or conditions, but apparently no longer persists at the site, the term Historical REC (HREC) is used.

The findings and conclusions presented in this report are based on the procedures described in ASTM Practice E 1527-05, informal discussions with various agencies, a review of the available literature cited in this report, conditions noted at the time of this ESA, and HDR's interpretation of the information obtained as part of this Phase I ESA. The findings and conclusions are limited to the specific project and properties described in this report, and by the accuracy and completeness of the information provided by others.

An ESA cannot entirely eliminate uncertainty regarding the potential for RECs. Conducting this assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the project area within reasonable limits of time and cost. In conducting its services, HDR used a degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession practicing in the same locality. No other warranty is made or intended. This ESA generally conforms to the level of documentation required in ASTM Practice E 1527-05. Deviations from the ASTM standard included deletion of certain records sources deemed to be inapplicable, or of limited value, to the specific needs of this client. The ASTM standard offers several options for sources of information. In the course of the investigation, some sources are determined to be of little or no value and other, more informative/applicable options are selected and utilized.

2.0 SITE DESCRIPTION

2.1 LOCATION AND LEGAL DESCRIPTION

The Restoration of Historic Streetcar Service in Downtown Los Angeles project is located in downtown Los Angeles, Los Angeles County, California. The Locally Preferred Alternative (LPA) is situated between 1st Street and 11th Street, with the southern half located between Broadway and Figueroa Street, and the northern half extending roughly between Broadway and Hill Street (a short segment extends to Grand Avenue). Adjacent to the LPA are potential locations for maintenance facility sites (MFS). Three specific MFS options were considered for the purposes of this report, referred to as MFS 1 (located north of Third Street, between Hill Street and Broadway), MFS 2 (located west of Hill Street and north of 5th Street), and MFS 3 (located south of 11th Street, between Olive Street and Grand Avenue). Five traction power substation (TPSS) locations and five alternate TPSS locations were also considered for the purpose of this report. The TPSS locations are presented below (the TPSS numbering is for use with this report only).

- TPSS 1 and Alt TPSS 1 – north of 2nd Street, east side of Grand Avenue
- TPSS 2 – northeast corner of Broadway and 2nd Street
- Alt TPSS 2 – west side of Broadway, south of 2nd Street
- TPSS 3 – east side of Broadway, between 8th Street and 9th Street
- Alt TPSS 3 – west side of Broadway, south of 9th Street
- TPSS 4 – between Figueroa and Flower Streets and between 8th and 9th Streets
- Alt TPSS 4 – east side of Figueroa Street, south of 9th Street
- TPSS 5 – west side of Hill Street, south of 4th Street
- Alt TPSS 5 – east of Hill Street, south of 6th Street

In addition to the LPA, an alternate route was also considered for this project. The LPA Variation extends along Hill Street from 7th Street to 9th Street, and on 9th Street from Broadway to Figueroa Street (see Figure 2). The LPA, LPA Variation, potential MFS and TPSS locations are considered the “project area” for the purposes of this report (and only this report). All land in the project area was included for analysis, including public rights-of-way and private properties. In addition to the project area, a one-eighth-mile surrounding buffer (referred to as the surrounding vicinity) was also evaluated for the purposes of this report. Figures depicting the configuration and location of the project area are included in Appendix A. Photographic documentation of the project area is included in Appendix B.

2.2 SITE AND VICINITY CHARACTERISTICS

The project area consists of eight different streets located in downtown Los Angeles: 1st Street, Grand Avenue, Hill Street, Broadway, 7th Street, 11th Street, 9th Street and Figueroa Street. The development located adjacent to the roadways is typical of a downtown area, including high-rise office buildings, music and sporting event venues, commercial and retail facilities, churches, libraries, hotels, residential complexes, multi-story parking garages, and public parks. The surrounding vicinity consists of similar urban development. California State Route 110 (SR 110) is located approximately 500 feet to one-half-mile west of the project area. Interstate 10 (I-10) is located approximately one-half-mile south of the project area, and US Route 101 (US

101) is located approximately 1500 feet north of the project area. According to the United States Geological Survey 7.5 minute series quadrangle maps for Hollywood, California (1994), the elevation of the project area ranges from approximately 240 to 280 feet above mean sea level. The natural topography in the area is relatively flat, sloping slightly to the southwest. One exception is the Bunker Hill area (located to the west of the northern portion of the project area) where the elevation increases to the northwest.

2.3 Description of Structures, Roads, and Other Site Improvements

Structures located within the project area consist largely of multi-story buildings that include office/commercial/retail space. Commercial warehouses and other retail and commercial structures are also present. Structures include both first and second generation construction, with many dating back to at least the late 1920s. Based on the mixed use of the area, the configuration, construction, and size of the structures within the project area and surrounding vicinity vary depending on the type of development (residential, commercial, retail, etc) and the date of construction. In addition to the structures, numerous paved parking lots are also located within the project area. All of the roads located within the project area are paved and multi-lane. Prior streetcar tracks have existed within the project area. Subsurface utilities typical of urban development exist within the project area, as well as subsurface petroleum exploration, production, and distribution facilities.

2.4 Area Geology and Hydrogeology

The project area is located in the Coastal Plain of Los Angeles County. The project area is underlain by interbedded layers of sandy silt, silt with sand, and gravelly sand. According to the California Department of Water Resources, the project area is located within the Los Angeles Forebay Area of the Central Groundwater Basin, with groundwater between 30 and 50 feet below ground surface (Perry, 2011).

3.0 USER-PROVIDED INFORMATION

Metro provided HDR with documents identifying the proposed location of the project area. Survey maps were provided by Coast Surveying, Inc. Information provided by Metro indicated that it has no specialized information for the project area pertaining to land use, previous environmental cleanups, previous chemical spills or releases, purchase price of any properties within the area or cleanup liens against properties within the project area or surrounding vicinity. If applicable at a later date, further analysis of the sites identified will include a request of information from other agencies that have information related to hazardous materials concerns or releases (such as the local fire department).

4.0 RECORDS REVIEW

4.1 ENVIRONMENTAL RECORDS REVIEW

Environmental Data Resources, Inc. (EDR) was contracted by HDR to complete an environmental records search of federal, state, local, tribal databases (as defined by ASTM E 1527-05) and EDR proprietary databases. HDR provided EDR with the project area location and search parameters (radius of concern) for the database search. The database report contains a map and a report of pertinent environmental records found for the specified area. For the purposes of this report, the radius of concern was limited to one-eighth-mile in an attempt to focus the results of the search to sites most likely to affect the project area given the current project scope. The boundaries provided to EDR were based on the LPA for the project (including the LPA Variation), as defined in July 2012. The database search report was produced by EDR on July 5, 2012. A complete copy of the EDR environmental database report is included in Appendix C.

Table 4-1 Summary of Environmental Database Search

Database	Description	Records Listed	Records of Concern to the Project
Federal			
NPL	The National Priorities List (NPL) is the U.S. EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund program.	0	0
Delisted NPL	The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) established the criteria that the EPA uses to delete sites from the NPL.	0	0
CERCLIS	The CERCLIS database is a compilation of facilities that the USEPA has investigated or is currently investigating for a release or threatened release of hazardous substances pursuant to CERCLA. No Further Remedial Action Planned (NFRAP) refers to facilities that have been removed and archived from its inventory of CERCLA sites.	2	2
LIENS 2	CERCLIS lien information. A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.	0	0
TSCA	The Toxic Substances Control Act (TSCA) identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.	1	1
RCRA TSD/ CORRACTS	The USEPA maintains a database of Resource Conservation and Recovery Act (RCRA) facilities associated with treatment, storage, and disposal (TSD) of hazardous materials that are undergoing "corrective action." A Corrective Action Report (CORRACTS) order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.	0	0
RCRA INFO	The RCRA INFO database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as large, small, or conditionally exempt. Large quantity generators (LQG) produce at least 1,000 kg/month of nonacutely hazardous waste or 1 kg/month of acutely hazardous waste. Small quantity generators (SQG) produce 100 to 1,000 kg/month of nonacutely hazardous waste. Conditionally exempt small quantity generators (CESQG) are those that generate less than 100 kg/month of nonacutely hazardous waste.	133	1

Database	Description	Records Listed	Records of Concern to the Project
US ENG Controls	A listing of sites with engineering controls in place.	0	0
US INST Controls	A listing of sites with institutional controls in place.	0	0
ERNS	Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances.	14	0
PADS	PCB Activity Database System (PADS) identifies generators, transporters, commercial storers, and/or brokers and disposers of PCBs who are required to notify the USEPA of such activities.	0	0
FTTS	FIFRA/TSCA Tracking System, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)/Toxic Substances Control Act (TSCA). FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA, and EPCRA (Emergency Planning and Community Right-to-Know Act).	7	0
ICIS	The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.	3	1
State			
RESPONSE	The Department of Toxic Substances Control's (DTSC) list which identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.	0	0
HIST CAL-SITES	The CALSITES database contains potential or confirmed hazardous substance release properties. In 1996, California EPA (Cal/EPA) reevaluated and significantly reduced the number of sites in the Calsites database. The database is no longer updated by the State agency. It has been replaced by ENVIROSTOR.	0	0
ENVIROSTOR	DTSC Site Mitigation and Brownfields Reuse Program's EnviroStor database identifies sites that have known contamination or sites for which there may be reason to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)), State Response, including Military Facilities and State Superfund, Voluntary Cleanup, and School sites. EnviroStor provides information including, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.	6	6
LUST	Leaking Underground Storage Tanks (LUST) Incident Report – State Water Resources Control Board (SWRCB) LUST records contain an inventory of reported leaking UST incidents.	16	14
CA FID UST	The California Facility Inventory Underground Storage Tank (CA FID UST) database contains historical active and inactive UST listings as provided by the SWRCB. The database has not been updated since 1994.	94	12
State UST	UST Database – SWRCB provides a database of registered Underground Storage Tanks within the specified area.	37	7
HIST UST	The Hazardous Substance Storage Container Database is a historical listing of UST sites previously maintained by SWRCB. Current data can be found in the State or local UST database.	34	7

Database	Description	Records Listed	Records of Concern to the Project
SWEEPS UST	Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.	100	15
SWF/LF State Landfill/ Historical Landfill	Solid Waste Information System – The Integrated Waste Management Board maintains a list of Solid Waste Facilities/Landfill (SWF/LF) Sites, including active and inactive, permitted and non-permitted solid waste disposal facilities.	1	0
CHMIRS	California's Hazardous Materials Incident Report System (CHMIRS) contains information on reported hazardous material incidents (accidental releases or spills), as maintained by the Office of Emergency Services.	24	0
DEED	The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.	0	0
DRYCLEANERS	DTSC's list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; dry cleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.	1	1
Manufactured Gas Plants	The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.	0	0
CA WDS	California Waste Discharge Systems (CA WDS) include sites which have been issued waste discharge requirements by the SWRCB.	10	0
NPDES	The National Pollutant Discharge Elimination System (NPDES) database contains a list of NPDES permits, as provided by the SWRCB.	6	0
Cortese/HIST Cortese	Cortese Hazardous Waste & Substances Sites – The Cal/EPA/Office of Emergency Information previously maintained a list of sites designated as LUST, SWF/LF or Cal-Sites. The list is no longer updated and cases are maintained by the SWRCB, Integrated Waste Management Board and DTSC.	0	0
SWRCY	A listing of recycling facilities in the state of California, provided by the Department of Conservation.	0	0
SLIC	The SLIC (Spills, Leaks, Investigations and Cleanup) program is designated to protect and restore water quality from spills, leaks and similar discharges. Statewide SLIC cases are maintained by the SWRCB.	3	1
UIC	A listing of underground control injection wells, maintained by the Department of Conservation.	1	0
HAZNET	Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments.	0	0
PROC	A list of certified processors maintained by the Department of Conservation	0	0

Database	Description	Records Listed	Records of Concern to the Project
Brownfields	A Brownfield site is an industrial or commercial project corridor that is abandoned, inactive, or underutilized, on which expansion or redevelopment is complicated because of the actual or perceived environmental contamination.	1	0
	Total Records	**494**	**68**

4.2 SUMMARY OF LISTED RECORDS

The EDR report identified 494 environmental records in the databases identified above for listings located within the project area or the one-eighth-mile surrounding vicinity. Within an urban area, it is anticipated that commercial operations will increase the number of listings in a database search. Many of the database listings, however, are not considered to be of concern to the project due to the scope of the project, the distance of the listed site from the project, and/or a facility's lack of or compliance with any previously noted violation(s). Additional database findings are not considered to be of concern to the project due to the nature of the database. For example, records listed in the HAZNET database only identify facilities that have shipped hazardous waste with a manifest, which does not necessarily indicate a hazardous materials release concern. As a result of these factors, 426 of the 494 records listed are not considered to be of concern to the project. The remaining 68 records correspond to 37 sites considered to be of concern to the project, based on the evaluation of HDR's environmental professionals (as defined by ASTM). The discrepancy between the number of records and the number of sites is a result of sites often being listed in multiple databases.

Details regarding each of the sites are presented in Tables 4-2 and 4-3 below. Table 4-2 contains information related to sites listed in various hazardous materials release-related databases. Table 4-3 contains information specific to leaking underground storage tank (LUST) sites. Regulatory files for each of the sites listed Tables 4-2 and 4-3 were requested for review from the Los Angeles Regional Water Quality Control Board (LARWQCB), or reviewed via the associated online file database (GeoTracker). Only files related to some of the LUST sites were returned from the LARWQCB. Regulatory files typically provide specific information regarding a release, including location of underground tanks, boundaries and type of contamination, and/or remediation activities (when conducted). Without being provided files to review, this type of information may not otherwise be available. As available, regulatory file information is presented below. Map codes indicated below are for use with Figure 2, in Appendix B.

Table 4-2 Hazardous Materials Release Cases

Map Code	Site Name	Address	Associated Database(s)[1]	Risk Ranking/ REC or HREC[2]
U	Jewelry Design Center/Kirk-Rick Dials	404 W. 7th Street	CERCLIS, Envirostor, ICIS	Low/HREC
AE	Staples Center	1111 S. Figueroa	CERCLIS, SLIC, UST	High/REC
O	Unique Premium Metals	640 S. Hill Street	RCRA Large Quantity Generator (with violations)	Moderate/ No REC
Q	West Sixth and	314 W. 6th Street	Envirostor	Indeterminate/REC

Map Code	Site Name	Address	Associated Database(s)[1]	Risk Ranking/ REC or HREC[2]
	Broadway Partnership			
P	Los Angeles United Investment Co	650 S. Hill Street	Envirostor	Indeterminate/REC
N	M&M Holding, LLC	629 S. Hill Street	Envirostor	Indeterminate/REC
T	United Building Associates	707 S. Broadway	Envirostor	Indeterminate/REC
R	Park Central Building	412 W. 6th Street	Envirostor	Indeterminate/REC
S	Arco-Lyondell Petrochemical	911 Wilshire Boulevard	TSCA	Indeterminate/REC
AP	Biltmore Cleaners	342 W. 9th Street	Drycleaners	Moderate/REC

[1] CERCLIS = Comprehensive Environmental Response, Compensation and Liability Information System, ICIS = Integrated Compliance Information System, SLIC = Spills, Leaks, Investigations and Cleanup, UST = underground storage tank, RCRA = Resource Conservation and Recovery Act, TSCA = Toxic Substances and Control Act tracking

[2] REC = Recognized Environmental Condition, HREC = Historical REC

- Jewelry Design Center/Kirk-Rick Dials located at 404 W. 7th Street (map code U) is listed in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), Envirostor, and Integrated Compliance Information System (ICIS) databases. The CERCLIS listing stems from the potential for radium contamination onsite, likely due to its jewelry making/metal plating operations. The site was classified as a “removal only site (no site assessment work needed)” and was listed with a priority level of “cleaned up” in April 2005. The site is not listed in the CERCLIS-No Further Remedial Action Planned (CERCLIS-NFRAP) database, indicating it has not yet been archived. The site’s Envirostor listing did not contain any specific details, only that the case had been referred to another agency.

  The site is also listed in the Integrated Compliance Information System (ICIS) database with three enforcement action items listed. Based on the location of the site (directly adjacent to proposed LPA) the site is considered to be a concern. However, based on the “cleaned up” status of the CERCLIS listing, this site is considered low-risk, and an HREC.

- Staples Center located at 1111 S. Figueroa Street (map code AE) is listed in the CERCLIS and Spills, Leaks, Investigations and Cleanup (SLIC) databases. The facility is also listed in the State Underground Storage Tank (UST) database. According to the EDR report, the CERCLIS listing results from operations at the site in 2000 designed to track counter-terrorism actions and funding. No additional details related to known or suspected contaminants or affected media (soil, water) were mentioned. Two SLIC cases are also listed for the site, one active case and one closed case. The active case involves total petroleum hydrocarbon (TPH), volatile organic compound (VOC) and metal contamination onsite. According to the active SLIC listing, the site is currently undergoing remediation. The second, closed SLIC case involved chromium, heavy metals, petroleum/fuels/oils and VOC contamination; however, the affected media was not listed. The SLIC case was opened in 1999 and closed in 2005. A permitted UST is also listed at the site; no additional details regarding UST contents or tank status were provided. Based on the active status of the SLIC case and possible active UST(s) onsite, the site is considered high-risk, and a REC.

- Unique Premium Metals located at 640 S. Hill Street (map code O) is listed as a Resource Conservation and Recovery Act (RCRA) Large Quantity Generator (LQG) site, with violations. The areas of violations involve container use and administrative issues. Based on the site's location along the LPA and listed violations, the site is of concern. However, based upon the nature of the violations, the site is considered moderate-risk, and not a REC.
- West Sixth and Broadway Partnership located at 314 W. 6th Street (map code Q) is listed in the Envirostor database. No specific details regarding the case are listed in the EDR report, and no regulatory files were returned for review. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- Los Angeles United Investment Co. located at 650 S. Hill Street (map code P) is listed in the Envirostor database. No specific details regarding the case are listed in the EDR report, and no regulatory files were returned for review. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- M&M Holding, LLC located at 629 S. Hill Street (map code N) is listed in the Envirostor database. No specific details regarding the case are listed in the EDR report, and no regulatory files were returned for review. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- United Building Associates located at 707 S. Broadway (map code T) is listed in the Envirostor database. No specific details regarding the case are listed in the EDR report and no regulatory files were returned for review. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- Park Central Building located at 412 W. 6th Street (map code R) is listed in the Envirostor database. No specific details regarding the case are listed in the EDR report and no regulatory files were returned for review. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- Arco-Lyondell Petrochemical located at 911 Wilshire Boulevard (map code S) is listed in the Toxic Substances and Control Act (TSCA) chemical substance inventory list. According to the EDR report, the facility imported or manufactured chemicals including distillates, petroleum and paraffinic products. The site is also listed in two UST databases, neither of which is still updated. According to Statewide Environmental Evaluation and Planning System (SWEEPS) UST database, paint sludge was stored in a UST onsite. No additional information regarding the number of tanks, tank(s) size or content was available. Based on the limited information provided, this site is considered to be of indeterminate risk to the project, and a REC.
- Biltmore Cleaners located at 342 W. 9th Street (map code AR) is listed in the Drycleaners database. Facilities with (current or former) drycleaning operations are considered to be of concern based on the hazardous waste streams associated with onsite operations. According to the EDR report, Biltmore Cleaners operated from 1995 until 1998. No regulatory information for the site was available. Based on the former

drycleaning operations conducted at the site, and its location along the LPA Variation, this site is considered moderate-risk, and a REC.

The 14 sites presented in Table 4-3 are listed in the LUST database, Cortese and/or Hist Cortese database(s). The Cortese and Hist Cortese databases include LUST sites, but records are no longer updated, and information listed in these databases may not be current. Both active and closed LUST cases are of concern to the project, based on the potential for residual subsurface contamination (often present even in closed cases). During the regulatory file review, it was identified that many of the USTs involved in these LUST cases were located under the sidewalk of the associated address. In these cases, it is possible for contaminants to have migrated into the path of the LPA/LPA Variation or TPSS/MFS if either is located within 100 feet of the LUST site. In the event that the tanks were not located under the sidewalk (or where no information as to the tanks' location was available), the potential for contaminant migration into the path of the LPA/LPA Variation is still present.

Table 4-3 Leaking Underground Storage Tank Cases

Map Code	Site Name	Address	LUST Listing	Cortese Listing	Hist Cortese Listing	LUST Case Opened	LUST Case Closed	Soil Impact	Ground-water Impact	Contaminants of Concern[1]	Other Details and/or File Review Notes (when available)[2]	Risk Ranking/ REC or HREC[3]
K	Times Mirror	240 S. Hill Street	x		x	12/91	08/97	x	x	Solvents, non-petroleum hydrocarbon	Site located adjacent to LPA.	High (based on location and groundwater impact) /HREC
L	Bradbury Building	304 S. Broadway	x			06/05	03/08	x		Gasoline	Site located adjacent to LPA.	High (based on location) /HREC
V	Carrier Center LA	600 W. 7th Street	x			07/94	06/95	x		Diesel	Site located adjacent to LPA.	High (based on location) /HREC
M	Twin Springs	433 S. Spring Street	x		x	02/02	09/11	x		Gasoline	Release located approximately 400 feet east of LPA. Case closed with residual contamination present onsite.	Moderate/HREC
B	**County of LA**	**145 N. Grand Ave**	**x**			**05/95**		**x**		**Gasoline**	**LUST case remains open. Site is located approximately 200 feet north of LPA.**	**High (based on open LUST case) /REC**
C	Times Mirror Corp	145 S. Spring Street	x		x	04/88	03/89	x		Gasoline	No additional information available.	Moderate/HREC
A	LA Co Hall of Admin	500 W. Temple Street	x		x	10/86	09/90	x		Diesel	No additional information available.	Moderate/HREC
AD	No site name listed	1050-1070 S. Flower Street	x			12/03	03/07	x		Heating/fuel oil	Impacted soil excavated from site in 2003.	Moderate/HREC
AB	Unocal #1300	730 W. Olympic Boulevard	x		x	03/94	06/94	x		Other solvents, non-petroleum hydrocarbon	Site located adjacent to LPA.	High (based on location) /HREC
AA	**Shell**	**504 W. Olympic Boulevard**	**x**			**02/05**	**Open**	**x**	**x**	**Gasoline, diesel, MTBE, TBA, other fuel oxygenates**	**Extent of contamination not yet fully defined, per regulatory agency.**	**High (based on open LUST case) /REC**
Z	801 Tower Bld.	845 S. Figueroa Street	x		x	10/93	03/96	x	x	Gasoline	Site located adjacent to LPA. According to regulatory agency, extent of contamination is limited.	High (based on location and groundwater impact) /HREC
AG	**Arco #5033**	**1151 S. Flower Street**	**x**			**08/95**	**Open**	**x**		**Gasoline**	**Site located approximately 250 feet south of the LPA. No additional information regarding LUST case was available.**	**High (based on open LUST case)/REC**
W	Morllin Management/ Former Union Oil Co	617 W. 7th Street			x	Unknown	Unknown	Unknown	Unknown	Unknown	Site located adjacent to LPA. No additional information available via EDR report, or via LACRWQCB.	Indeterminate/REC

Map Code	Site Name	Address	LUST Listing	Cortese Listing	Hist Cortese Listing	LUST Case Opened	LUST Case Closed	Soil Impact	Ground-water Impact	Contaminants of Concern[1]	Other Details and/or File Review Notes (when available)[2]	Risk Ranking/ REC or HREC[3]
AC	**Chevron/Former Car Wash**	**811 W. Olympic Boulevard**	**x**			**03/03**		**x**	**x**	**Gasoline**	**Site located adjacent to LPA. Non-actionable levels of TPH-gasoline, benzene, ethylbenzene, toluene and xylenes detected in soil samples collected in January 2012. Case closure letter submitted.**	**High (based on OPEN LUST case) /REC**

[1] MTBE = methyl tertiary butyl ether, TBA = tertiary butyl alcohol, TPH = total petroleum hydrocarbon

[2] Regulatory files reviewed at the Los Angeles County Regional Water Quality Control Board, and/or associated Geotracker website.

[3] REC = Recognized Environmental Condition, HREC = Historical REC

Bold text indicates open or active regulatory case.

In addition to the above-listed sites, 112 UST sites were also listed in the EDR report. (Some of the USTs identified in the EDR report are listed above). It is important to note that in the state of California, several databases exist for the purpose of tracking USTs. Many of the databases are no longer updated, and limited information is available for the tanks identified in these UST databases (HIST UST, SWEEPS UST, CA FID UST). The current, actively updated UST database is the State UST database. While some overlap of findings does exist among the databases, each database may contain USTs not listed elsewhere. Often, the USTs identified in historical databases are not listed in the current State UST database. According to the EDR report, 36 sites are listed as “permitted UST” sites in the State UST database. The remaining 76 sites are listed in historical UST databases, and not in the State UST database. While not listed as currently permitted facilities, it is possible that USTs remain onsite at these 76 locations. In order to serve the most valuable purpose for this report, only UST sites located at or adjacent to a potential MFS and/ or TPSS are mentioned below. A complete listing of all UST sites located within the project area can be found in the EDR report included in Appendix C. The lack of specific mention of the UST sites located adjacent to the LPA/LPA Variation (not otherwise at or adjacent to a TPSS or MFS) is not anticipated to affect the findings of this report. Analysis of the UST sites listed in the EDR report identified a high density of sites located throughout the project area. Based on the close proximity of the current and former UST sites to one another, and the amount of ground disturbance associated with track construction only, a general recommendation regarding USTs was made for this report (See Section 8.1 for additional information). Based on the potential for acquisition and increased ground disturbance in the area of a MFS/TPSS, and the potential for soil contamination to be present in the vicinity of USTs even if not classified as a LUST, the UST sites listed in Table 4-4 are considered to be a moderate risk, and a REC.

Table 4-4 Underground Storage Tank Sites

Map Code	Site Name	Address	Associated Database(s)[1]	Potentially Impacted MFS or TPSS[2]
G	Current Occupant	208 S. Hill Street	SWEEPS, CA FID	MFS 1
H	Webster Career College	222 S. Hill Street	SWEEPS, CA FID	MFS 1
I	Current Occupant	240 S. Hill Street	SWEEPS, CA FID	MFS 1
J	The Angeles Plaza	245 S. Hill Street	State UST, SWEEPS, CA FID	MFS 1
AI	TransAmerica Center	1133 S. Olive Street	State UST, SWEEPS, CA FID, HIST UST	MFS 3
AJ	TransAmerica Occidental	1150 S. Olive Street	SWEEPS, CA FID	MFS 3
AK	Office of Fleet Management	122 S. Hill Street	State UST, SWEEPS, CA FID, HIST UST	TPSS 1, Alt TPSS 1
AL	LA Times	130 S. Broadway	SWEEPS	TPSS 2
AL	Transamerica Center	150 S. Broadway	SWEEPS	TPSS 2
AM	9th and Hill Partnership	220 W. 9th Street	SWEEPS	Alt TPSS 3
AN	800 Figueroa Building	800 S. Figueroa Street	State UST, SWEEPS, CA FID, HIST UST	TPSS 4
AO	Service Station	860 S. Figueroa Street	HIST UST	TPSS 4

Map Code	Site Name	Address	Associated Database(s)[1]	Potentially Impacted MFS or TPSS[2]
AO	Cushman and Wakefield	888 S. Figueroa Street	SWEEPS	TPSS 4
AS	Metro Rail SCRTD	411 W. 5th Street	SWEEPS, CA FID	MFS 2

[1] SWEEPS = Statewide Environmental Evaluation and Planning System UST database, CA FID = CA Facility Inventory UST database, HIST UST = Historical UST Registered Database
[2] MFS = Maintenance Facility Site, TPSS = traction power substation (location options defined in Section 2.1)

4.3 Historical Use Information

The objective of reviewing historical use information is to develop a history of previous land uses in the vicinity of the project area, and to assess these uses for potential hazardous materials impacts that may affect the project. HDR reviewed those historical sources that were readily available and reviewable, and likely to provide useful information, given the time and cost constraints inherent in ESA projects.

4.3.1 Fire Insurance Maps

Fire insurance maps are produced by private fire insurance companies to indicate uses of the project area on specified dates. HDR reviewed Sanborn fire insurance maps at the Los Angles Public Library in Los Angeles, California. Sanborn maps for the years 1888, 1906, 1923 and 1950 were reviewed for the project area.

From 1888 to 1950, the maps depicted the project area and surrounding vicinity's development as typical urban facilities including banks, churches, hotels, municipal buildings, parking garages (or carriage sheds), residences, retail stores, post offices, restaurants and service stations. The seven sites listed in Table 4-5 were identified as a concern from the Sanborn map review. These sites are considered to be of concern, based on waste streams likely associated with onsite operations, and the location relative to the project area. Based on the lack of additional or regulatory information, most of the sites are considered to be an indeterminate risk, but not RECs (based on the ASTM definition of a REC). One exception is noted below. The site names are listed as they appeared on the Sanborn maps. Map codes listed below are for use with Figure 2.

Table 4-5 Sites of Concern Identified from Sanborn Insurance Maps

Map Code	Site Name	Location	Year(s) Depicted	Notes
D	Gas & Oil	Southwest corner of 1st Street and Hill Street	1906, 1923, 1950	Site located adjacent to LPA.
E	Gas & Oil	Southeast corner of 1st Street and Hill Street	1906, 1923, 1950	Site located adjacent to LPA.
F	Gas & Oil	Southeast corner of 2nd Street and Grand Avenue	1906, 1923, 1950	Site located adjacent to LPA.
AH	Gas Station	South of 11th Street, between Grand Avenue and Olive Street	1888	Historic gas station was located in the location of MFS 3[1].
AB	Gas & Oil	Southeast corner of Figueroa Street and Olympic Boulevard	1906, 1923, 1950	Site is in the location of the Unocal Station identified from the EDR review. **Risk ranking**

Map Code	Site Name	Location	Year(s) Depicted	Notes
				elevated to high-risk based on regulatory listing.
Y	Gas & Oil	Southwest corner of 8th Street and Figueroa Street	1906, 1923, 1950	Site located adjacent to LPA.
AF	Gas & Oil	Southwest corner of Flower and 11th Street	1906, 1923, 1950	Site located adjacent to LPA.
AP	Gas & Oil	Northwest corner of 9th Street and Flower Street	1906, 1923, 1950	Site located adjacent to LPA Variation
AQ	Gas & Oil	Southwest corner of 9th Street and Hope Street	1906, 1923, 1950	Site located adjacent to LPA Variation

[1] Maintenance Facility Site (MFS) location options defined in Section 2.1

4.3.2 Historical Aerial Photographs

Historical aerial photographs are valuable for the environmental assessor to review features of properties in/near the project area over a long period of time. HDR reviewed historical aerial photographs provided by EDR for the years 1927, 1938, 1947, 1956, 1965, 1976, 1989, 1994, and 2005. Details related to the aerial photography review are presented below.

Since at least 1927, the project area and surrounding vicinity have been extensively developed with commercial, retail, residential and other typical urban development. The density of development within the project area has undergone changes over the past 85 years, though some structures have been demolished and reconstructed throughout the area. Some of the commercial/warehouse buildings located in the project area, particularly in the southern half, were replaced with parking areas by the mid-1950s. Many of the multi-story buildings located throughout downtown Los Angeles were present by the mid-1950s. One noticeable change is in the area of the current Los Angeles Convention Center and Staples Center. Prior to the early 1970s, the area consisted of commercial and retail development. By 1972, the northernmost building of the convention center was built, and the southernmost building by the late 1980s. Construction of the Staples Center began 1998. Based on the scale of the aerial photographs and the condensed nature of a downtown area, specific details are difficult to determine from aerial imagery. No additional sites of concern were identified from historical photographs.

4.3.3 City Directory Information

A review of city directories was conducted at the Los Angeles Public Library in Los Angeles, California. The years between 1956 and 2009 were reviewed, in intervals of approximately five years (not all years between 1949 and 2009 were available for review). The directory review identified the project area's development as similar to that which was depicted in the Sanborn maps and historical aerial images. One additional site of concern was identified in the city directory review. A Union Oil Service Station located at 705 S. Figueroa Street (map code X) was listed beginning in 1961. The service station, which is no longer present, was located adjacent to the LPA. Based on the likelihood for USTs to have previously been located onsite, but the lack of any regulatory information, the site is considered to be an indeterminate risk and a REC.

4.3.4 Historical Topographic Maps

Historical topographic maps provide an overview of the area relative to potential previous land uses. HDR reviewed historical topographic maps of the project area and adjoining properties from the United States Geological Survey 7.5 minute series quadrangle maps for Hollywood, California (1954, photorevised 1967, 1973, and 1994). These maps served to verify the information gathered in the historic aerial photograph review.

4.4 Environmental Liens and Additional Information

No information regarding the chain-of-title ownership history or environmental liens recorded against the project area was provided by the user. Environmental lien searches were not conducted as part of the scope of work for this project.

4.5 Summary of Previous Environmental Investigations

No previous environmental investigations were reviewed for the purposes of this report. Exceptions include the information provided by regulatory file review, which is provided in Section 4.2.

5.0 SITE RECONNAISSANCE AND INTERVIEWS

5.1 SITE RECONNAISSANCE

On August 15 and 16, 2012, HDR personnel conducted a site reconnaissance of the project area (including MFS and TPSS location options) and surrounding vicinity. The project area consisted of the eight paved roadways of the proposed project area (1st Street, Grand Avenue, Hill Street, Broadway, 7th Street, 9th Street 11th Street and Figueroa Street), located in an urban area of mixed-use development in downtown Los Angeles. The development located within the project area was typical of a downtown area, including high-rise office buildings, music and sporting event venues, commercial and retail facilities, churches, libraries, hotels, residential complexes, multi-story parking garages, and public parks. Many of the sites identified as a concern were either no longer present, or no indications of suspected contamination (such as soil staining or distressed vegetation) were visible during the site reconnaissance. The locations of the MFS options consisted of paved parking lots and a high-rise building with office and retail facilities. The surrounding vicinity consists of similar urban development. No pits, ponds, lagoons, or other indications of large-scale hazardous material were identified during the reconnaissance of the project area.

5.2 INTERVIEW

Interviews were not conducted for the purposes of this report.

5.3 KNOWN CURRENT AND PAST USES OF THE SITE AND ADJOINING PROPERTIES

The project area currently consists of the mixed-use development that is typical in a downtown area. Development includes high-rise office buildings, restaurants, commercial and retail facilities, churches, libraries, hotels, residential complexes, multi-story parking garages, and public parks. The area has been developed since at least the late 1880s, according to historic source review. The area consisted of residential, commercial and retail properties as early as 1888. Expansion of the project area continued and by the mid-1950s, many of the multi-story buildings located throughout downtown Los Angeles were present. The surrounding vicinity experienced a similar development history. The surrounding vicinity consists of residential, commercial and retail development, as well as I-10, SR 110 and US 101 (are all located within one-half-mile of the project area). Prior streetcar tracks have existed within the project area. Subsurface utilities typical of urban development exist within the project area, as well as subsurface petroleum exploration, production, and distribution facilities.

5.4 UTILITIES

HDR did not observe indications of subsurface utilities other than typical municipal utilities such as water, sewer, electrical, and telecommunications facilities. The presence of subsurface petroleum exploration, production, and distribution facilities is likely in the project area, but no indications of widespread contamination from these facilities was reported in regulatory files.

6.0 DATA GAP ANALYSIS

The ASTM E 1527-05 standard requires a listing of “data gaps” encountered during the investigative process that may affect the validity of the conclusions drawn by the environmental professional. The ASTM E 1527-05 standard also requires that the environmental professional estimate the relative importance of the data gaps. Generally, gaps in available data are related to the availability of historical data sources for specific sites of concern. The environmental professional uses multiple historical data sources as a method to provide coverage for data gaps. Historical information is collected on a recurring basis, and the passage of time between data sets may or may not constitute a significant gap in data coverage. For this project, the following items may constitute a data gap as defined by ASTM:

- Lack of site-specific interviews
- Lack of adequate regulatory files available for review

The absence of site-specific interviews is not anticipated to be a significant data gap based on the other supporting information gathered during the investigative process.

Because regulatory files were already requested for the suspected or known release-related sites of concern, and many were not returned by the regulatory agency, the lack of adequate regulatory files available for review is considered a significant data gap. Section 8.1 of this report addresses the next step in the investigative process, which would account for the information missing from regulatory file review.

7.0 FINDINGS AND CONCLUSIONS

HDR has conducted a Corridor Phase I ESA for the Restoration of Historic Streetcar Service in Downtown Los Angeles project located in Los Angeles, Los Angeles County, California. The proposed streetcar project is situated in Downtown Los Angeles, from approximately 1st Street to 11th Street, and from Broadway to Figueroa Street. In addition to the project area, a one-eighth-mile surrounding vicinity was also evaluated for the purposes of this report. Figures depicting the configuration and location of the project area are included in Appendix A, with photographs included in Appendix B.

This Phase I ESA identifies recognized environmental conditions (RECs, as defined in ASTM E 1527-05) for the project area that may adversely affect construction or project area right-of-way acquisition. In the event that the regulatory issue has been resolved by the regulatory agency with jurisdiction, the condition may be classified as a “Historical REC”.

This ESA includes a summary of the site reconnaissance conducted on August 15-16, 2012, a review of environmental databases, and a review of historical data sources.

The ESA process resulted in the following findings and conclusions:

7.1 FINDINGS

- The project area is located in an urban area of mixed-use development in Los Angeles, California. Development in the area consists of the paved roadways of the LPA and the Variation, surrounded by high-rise office buildings, music and sporting event venues, commercial and retail facilities, churches, libraries, hotels, residential complexes, multi-story parking garages, and public parks. Potential locations for the Maintenance Facility Sites (MFSs) within the project area currently consist of paved parking lots and a retail shopping center. Locations of the traction power substations (TPSSs) are dispersed throughout project area, adjacent to the LPA, and include parking lots, parking structures and an alley. Prior streetcar tracks have existed within the project area. Subsurface utilities typical of urban development exist within the project area, as well as subsurface petroleum exploration, production, and distribution facilities.
- The EDR environmental database report identified 493 environmental records for sites located within the project area and the one-eighth-mile surrounding vicinity. Within an urban area it is anticipated that commercial operations will increase the number of listings in a database search. As a result, 426 of the 494 records listed are not considered to be of concern to the project. The remaining 68 records correspond to 37 sites considered to be of concern to the project. The discrepancy between the number of records and the number of sites is a result of sites often being listed in multiple databases.
- For the purposes of this report, sites listed in the State UST database (and no other database) were considered a concern only if the site is located in or adjacent to a proposed MFS or TPSS location.
- Eight additional sites of concern were identified from historical resource review (Sanborn fire insurance maps, historical aerial imagery and city directories). The sites are considered to be a concern based on the likelihood for USTs to have previously been stored onsite. It has been the experience of HDR professionals that oftentimes, subsurface contamination is present in the area of USTs not

otherwise classified as a LUST.

- The site reconnaissance of the project area did not identify any additional sites of concern. No indications of large-scale, previous spills or hazardous material usage or disposal were identified within the project area. No pits, ponds, lagoons, or other indications of buried or large-scale hazardous material were identified during the reconnaissance of the project area.

7.2 CONCLUSIONS

HDR has identified RECs and HRECs in connection with the project area. The following statement is required by ASTM E 1527-05 as a positive declaration of whether REC(s) were found:

HDR has performed a Phase I Environmental Site Assesssment (ESA) in conformance with the scope and limitations of ASTM E 1527-05 of the project area (as defined elsewhere in this report). Any exceptions to or deletions from these practices are described in the report. This report has revealed evidence of 27 Recognized Environmental Conditions (RECs) and 10 HRECs, in connection with the project area.

8.0 RECOMMENDATIONS

Recommendations included in this report have been developed through the investigative procedures described in the *Scope of Services, Significant Assumptions, and Limitations* section of this report. These findings should be reviewed within the context of the limitations provided in the *Scope of Services, Significant Assumptions, and Limitations* section. Based on the location and specific details of the identified risks, HDR has identified 27 RECs and 10 HRECs associated with the project area.

Based on the findings and conclusions reached in this report, HDR makes the following recommendations for the project area:

8.1 RECOMMENDATION 1

HDR recommends that a focused Preliminary Site Investigation (PSI) be conducted at specified locations adjacent to the identified sites of concern for moderate, high and indeterminate-risk sites, as well as the proposed locations for the MFS and TPSSs. A PSI in these areas will include a soil boring and laboratory analytical program, to address contaminants of concern specific to each site.

8.2 RECOMMENDATION 2

HDR recommends that all construction contractors should be instructed to immediately stop all subsurface activities in the event that potentially hazardous materials are encountered, an odor is identified, or significantly stained soil is visible. Contractors should be instructed to follow all applicable regulations regarding discovery and response for hazardous materials encountered during the construction process

9.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

9.1 SIGNATURES AND QUALIFICATIONS

We declare that, to the best of our professional knowledge and belief, we meet the definition of environmental professional as defined in Section 312.10 of 42 C.F.R. Part 312. This Phase I ESA was conducted under the supervision of a qualified environmental professional.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the project area. We have developed and performed the AAI in conformance with standards and practices set forth in 40 C.F.R. Part 312.

The preceding report has been prepared in general conformance with standard industry practice for performance of ESAs, and includes the applicable portions of the investigation procedures codified in ASTM E 1527-05, *Standard Practice for Environmental Site Assessments: Environmental Site Assessment Process*. The end user of this report may rely on the contents, findings, and conclusions to be accurate within the limitations stated in this report and in the ASTM standard. The report also complies with specific requirements supplied by the client.

Environmental Professional
Kelly W. Kading, CPG, CHMM
Senior Professional Associate

9.1.1 Qualifications of Environmental Professionals

Mr. Kelly W. Kading, CPG, CHMM, an environmental professional as defined by ASTM E 1527-05, has more than 25 years of experience in assessment and remediation of impacted properties and compliance with environmental regulations. He has a B.S. in Geology from Colorado State University and is a Certified Professional Geologist (#9173), and a Certified Hazardous Materials Manager (#1995). He specializes in forensic investigation of hazardous materials-impacted properties for municipal and state agencies, as well as commercial clients. His experience covers assessment of more than 3,000 properties ranging from agricultural land to multigenerational industrial properties in 34 states and 2 foreign countries. He is highly knowledgeable of federal, state, and local environmental regulations and standards and has served on the National Board of Directors of the Academy of Certified Hazardous Materials Managers. He serves as HDR's National Phase I Best Practices Team leader, and is responsible for training HDR's Phase I practitioners nationwide.

10.0 REFERENCES

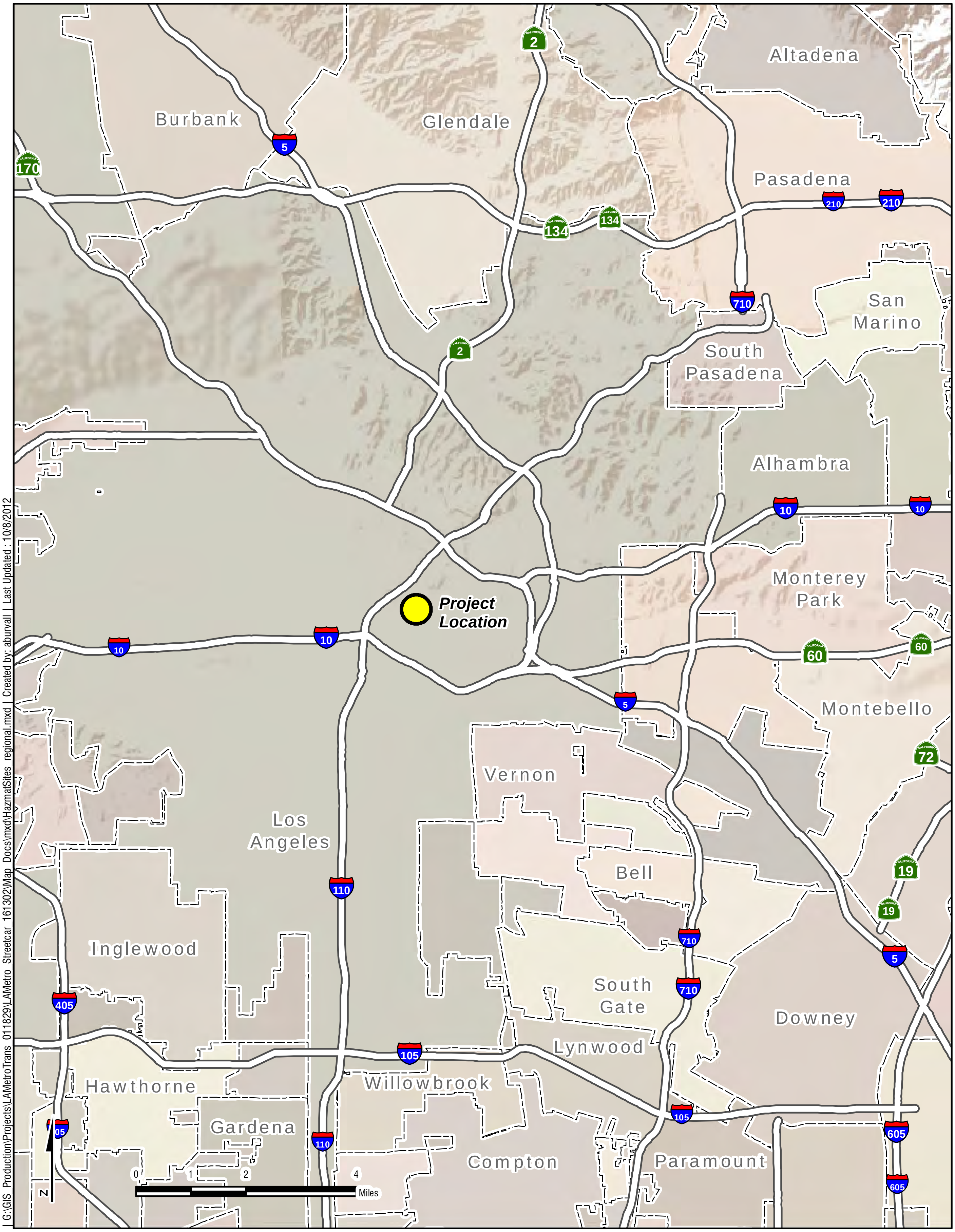
American Society for Testing and Materials (ASTM). 2005. ASTM Practice E 1527-05. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

California EPA GeoTracker® website (August 15-September 21, 2012). http://geotracker.waterboards.ca.gov /default.asp.

Environmental Data Resources, Inc. (EDR). Report: *LA Streetcar,* July 5, 2012.

Perrry, Wayne. 2011. *Additional Site Assessment Report Shell Service Station.*

Appendix A
Figures



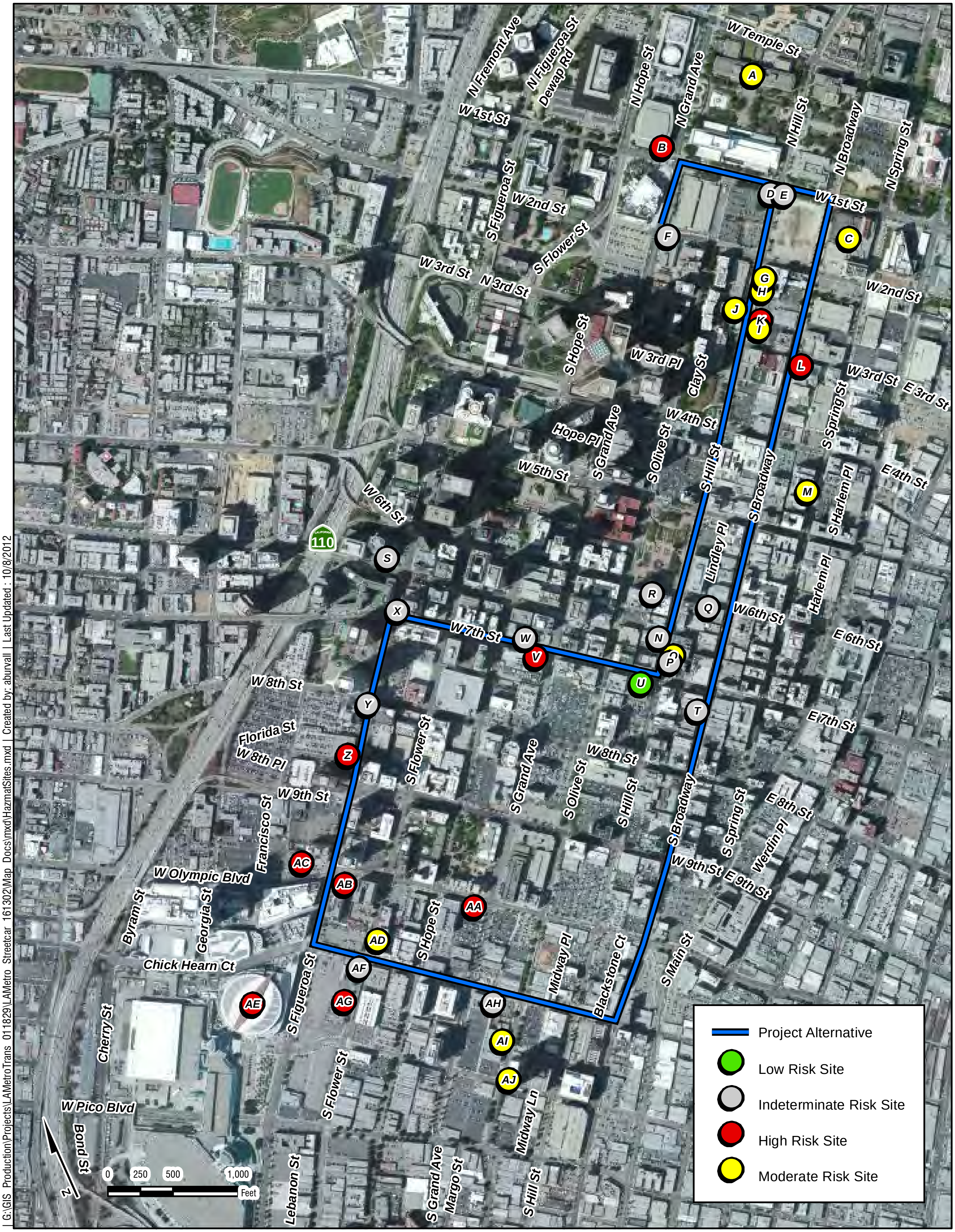
Project Location

FIGURE 1

Los Angeles Streetaar

HDR
ONE COMPANY | *Many Solutions*℠

G:\GIS_Production\Projects\LAMetroTrans_011829\LAMetro_Streetcar_161302\Map_Docs\mxd\HazmatSites.mxd | Created by: aburvall | Last Updated : 10/8/2012



Phase 1 Environmental Site Assessment

FIGURE 2

Los Angeles Streetaar

HDR
ONE COMPANY | *Many Solutions*℠

Appendix B
Photographic Documentation

Photo 1: Northeastern boundary of the locally approved alternative (LPA), Broadway from 1st Street. View is toward the south.

Photo 2: Development along the LPA, Hill Street from 1st Street. View is toward the south.

Photo 3: Development along the LPA, Hill Street from 7th Street. View is toward the north.

Photo 4: Development along the LPA, 7th Street from Figueroa Street. View is toward the east.

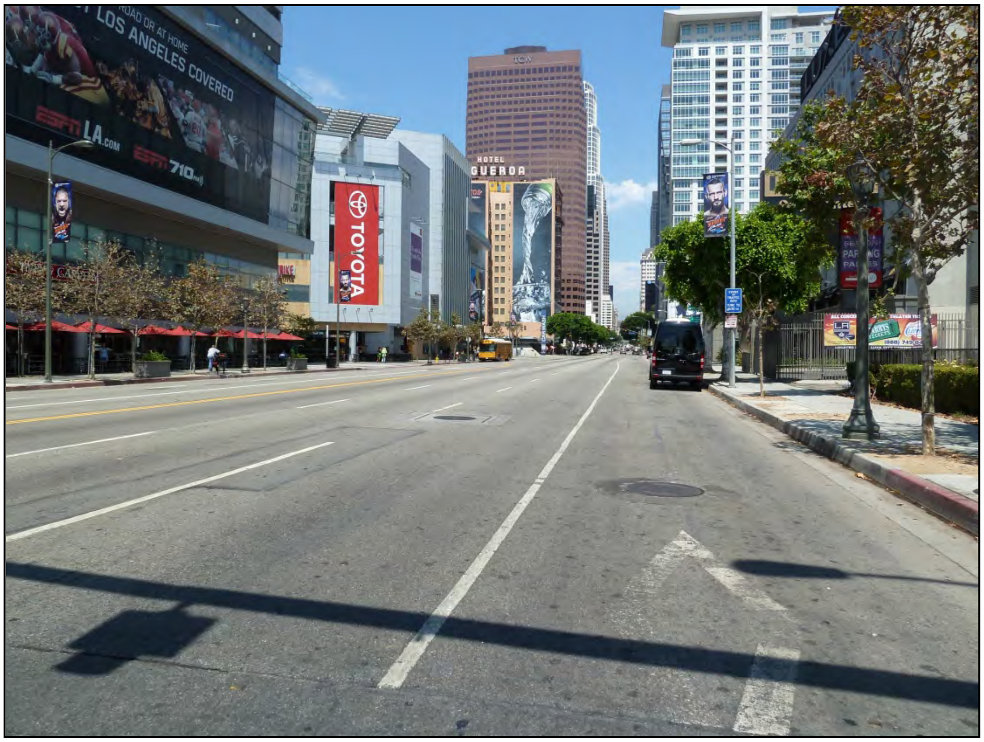


Photo 5: Development along the LPA, Figueroa Street from 11th Street. View is toward the north.

Photo 6: Development along the LPA, 11th Street from Broadway. View is toward the west.

Photo 7: Development along the LPA, Broadway from 11th Street. View is toward the north.

Photo 8: Location of maintenance facility site (MFS) option located north of 3rd street. View is toward the east.

Photo 9: Optional MFS location located east of Broadway. View is toward the northeast.

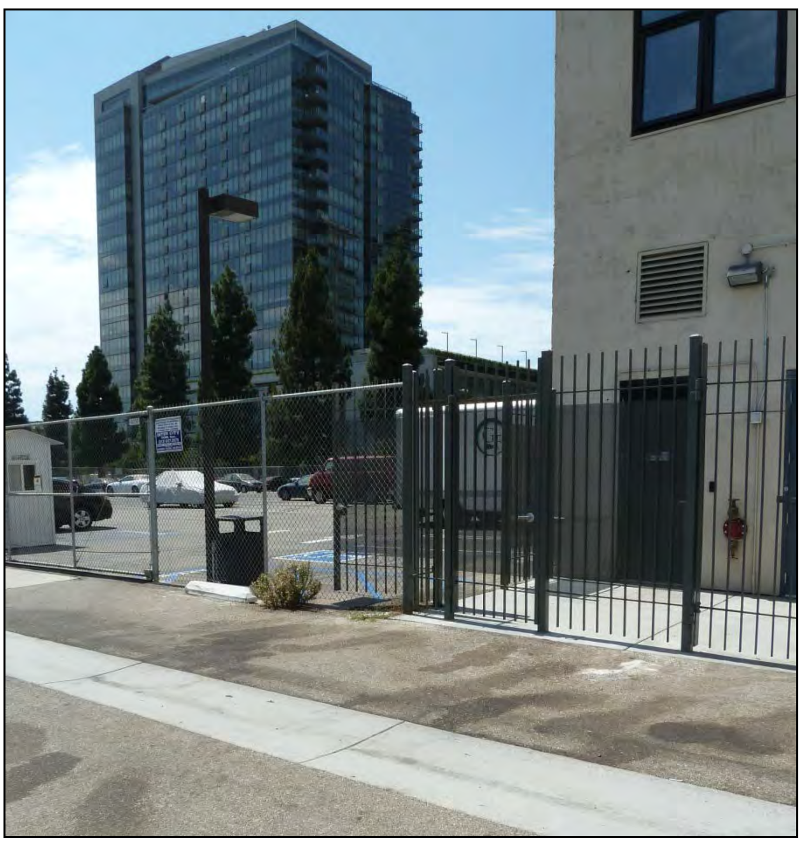


Photo 10: Optional MFS located south of 11th Street. View is toward the southwest.

Appendix C
EDR Information

LA Streetcar
7th Street and Broadway
Los Angeles, CA 90015

Inquiry Number: 3359610.1s
July 05, 2012

The EDR Radius Map™ Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	**ES1**
Overview Map	**2**
Detail Map	**3**
Map Findings Summary	**4**
Map Findings	**8**
Orphan Summary	**1031**
Government Records Searched/Data Currency Tracking	**GR-1**

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

7TH STREET AND BROADWAY
LOS ANGELES, CA 90015

COORDINATES

Latitude (North):	34.0439000 - 34˚ 2' 38.04''
Longitude (West):	118.2588000 - 118˚ 15' 31.68''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	383806.2
UTM Y (Meters):	3767543.5
Elevation:	255 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	34118-A3 HOLLYWOOD, CA
Most Recent Revision:	1994
East Map:	34118-A2 LOS ANGELES, CA
Most Recent Revision:	1994

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2009, 2010
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL.......................... National Priority List

EXECUTIVE SUMMARY

Proposed NPL - - - - - - - - - - Proposed National Priority List Sites
NPL LIENS - - - - - - - - - - Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL - - - - - - - - - - National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY - - - - - - Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP - - - - - - - - - - CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS - - - - - - - - - - Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF - - - - - - - - - - RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

US ENG CONTROLS - - - - - - Engineering Controls Sites List
US INST CONTROL - - - - - - Sites with Institutional Controls

State- and tribal - equivalent NPL

RESPONSE - - - - - - - - - - State Response Sites

State and tribal leaking storage tank lists

INDIAN LUST - - - - - - - - - - Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

INDIAN UST - - - - - - - - - - Underground Storage Tanks on Indian Land
FEMA UST - - - - - - - - - - Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP - - - - - - - - - - - - - - Voluntary Cleanup Program Properties
INDIAN VCP - - - - - - - - - - Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 - - - - - - Torres Martinez Reservation Illegal Dump Site Locations
ODI - - - - - - - - - - - - - - Open Dump Inventory
SWRCY - - - - - - - - - - - - Recycler Database
HAULERS - - - - - - - - - - - Registered Waste Tire Haulers Listing

EXECUTIVE SUMMARY

Local Lists of Hazardous waste / Contaminated Sites

US CDL	Clandestine Drug Labs
HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
Toxic Pits	Toxic Pits Cleanup Act Sites
AOCONCERN	San Gabriel Valley Areas of Concern
CDL	Clandestine Drug Labs
US HIST CDL	National Clandestine Laboratory Register

Local Land Records

LIENS 2	CERCLA Lien Information
LUCIS	Land Use Control Information System
LIENS	Environmental Liens Listing
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing

Other Ascertainable Records

DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
RAATS	RCRA Administrative Action Tracking System
CA BOND EXP. PLAN	Bond Expenditure Plan
Notify 65	Proposition 65 Records
WIP	Well Investigation Program Case List
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
FINANCIAL ASSURANCE	Financial Assurance Information Listing
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
COAL ASH DOE	Sleam-Electric Plan Operation Data
MWMP	Medical Waste Management Program Listing
PCB TRANSFORMER	PCB Transformer Registration Database
PROC	Certified Processors Database

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS list

CERCLIS: The Comprehensive Environmental Response, Compensation and Liability Information System contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the CERCLIS list, as provided by EDR, and dated 12/27/2011 has revealed that there are 2 CERCLIS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KIRK-RICH DIALS	404 W. 7TH STREET, SUIT	ENE 0 - 1/8 (0.005 mi.)	M524	421

Lower Elevation	Address	Direction / Distance	Map ID	Page
DEMOCRATIC NATIONAL CONVENTION	***1111 SOUTH FIGUEROA STR***	***W 0 - 1/8 (0.018 mi.)***	***AV715***	***599***

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 6 RCRA-LQG sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNIQUE PREMIUM METALS, INC	***640 S HILL ST, STE 743***	***0 - 1/8 (0.000 mi.)***	***M244***	***211***
CALIFORNIA ACADEMY EARLY COLLE	700 WILSHIRE BLVD	NNE 0 - 1/8 (0.061 mi.)	BR857	712
VAN NUYS APARTMENTS	***210 W 7TH ST***	***E 0 - 1/8 (0.067 mi.)***	***CG897***	***745***
LADWP JOHN FERRARO BUILIDING	***111 N HOPE ST***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1064***	***894***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CITY HALL	200 NORTH SPRING STREET	NE 0 - 1/8 (0.120 mi.)	CT1156	983
SOUTHERN CALIFORNIA GAS CO	***555 W FIFTH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1162***	***992***

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 125 RCRA-SQG sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CALIF STATE GARAGE	***122 SO HILL ST***	***0 - 1/8 (0.000 mi.)***	***C8***	***16***
CALIFORNIA DEPT OF JUSTICE	***107 S BROADWAY RM 3131***	***0 - 1/8 (0.000 mi.)***	***A9***	***19***
UNIQUE TIME SERVICE	***448 S HILL ST #408***	***0 - 1/8 (0.000 mi.)***	***F42***	***45***
BOB CISNEROS JEWERLY MFG	***315 W 5TH ST #708A***	***0 - 1/8 (0.000 mi.)***	***K45***	***48***
ALVIN I SOLOMON CO	***315 W 5TH ST RM 704***	***0 - 1/8 (0.000 mi.)***	***K47***	***50***
SAKS STYLING	***448 S HILL ST STE 510***	***0 - 1/8 (0.000 mi.)***	***F50***	***53***
PLAZA ONE HOUR PHOTO	***735 SO FIGUEROA SUITE 1***	***0 - 1/8 (0.000 mi.)***	***J52***	***55***
GARUN JEWELRY MANUFACTURING, I	***448 SOUTH HILL STREET #***	***0 - 1/8 (0.000 mi.)***	***F58***	***61***
BROADWAY PLAZA	***700 S FLOWER ST SUTIE 4***	***0 - 1/8 (0.000 mi.)***	***G79***	***75***
GOLDEN SCOPE INC	***650 S HILL ST #827***	***0 - 1/8 (0.000 mi.)***	***M111***	***95***
LOS ANGELES UNITED INVEST CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M113***	***96***
JEWELS BY JACKING INC	***712 S OLIVE #311***	***0 - 1/8 (0.000 mi.)***	***P118***	***103***
OLYMPIA DESIGN	***314 W 6TH ST #424***	***0 - 1/8 (0.000 mi.)***	***S127***	***112***
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
JOHNS EXCHANGE INC	650 SOUTH HILL ST NUMBE	0 - 1/8 (0.000 mi.)	M143	125
N T A INVESTMENTS	***718 S HILL ST STE 103***	***0 - 1/8 (0.000 mi.)***	***AB144***	***126***
S OLIVE PARTNERSHIP	***712 SOUTH OLIVE ST # 20***	***0 - 1/8 (0.000 mi.)***	***P149***	***130***
ASK GOLD INC	716 S OLIVE ST	0 - 1/8 (0.000 mi.)	P160	137
M AND M HOLDING L L C	***728 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AB161***	***139***
K AND K JEWELRY INC	***606 S HILL ST #709***	***0 - 1/8 (0.000 mi.)***	***AC165***	***142***
DESIGNED BY SCORPIO INC	***650 S HILL ST. #915***	***0 - 1/8 (0.000 mi.)***	***M166***	***143***
WESTERN MGMT CORP	***314 W SIXTH ST***	***0 - 1/8 (0.000 mi.)***	***S171***	***148***
MARTIN BUILDING COMPANY	816 S. GRAND AVENUE	0 - 1/8 (0.000 mi.)	O180	157
SO CALIF GAS CO/FLOWER ST FACI	***810 S FLOWER ST.***	***0 - 1/8 (0.000 mi.)***	***N190***	***166***
W SIXTH AND BROADWAY PARTNERSH	***314 W SIXTH ST 626***	***0 - 1/8 (0.000 mi.)***	***S195***	***170***
SUNSHINE PLATING	***650 S HILL ST SUITE 818***	***0 - 1/8 (0.000 mi.)***	***M199***	***175***
JOHNS EXCHANGE INC	***650 SOUTH HILL ST NUMBE***	***0 - 1/8 (0.000 mi.)***	***M203***	***178***
ABKARIAN JEWELRY	***650 S HILL ST #916***	***0 - 1/8 (0.000 mi.)***	***M217***	***186***
VARDERESSIAN JEWELRY	***550 S HILL ST #764***	***0 - 1/8 (0.000 mi.)***	***AC223***	***192***
UNIDOR JEWELRY	***606 S HILL ST #417***	***0 - 1/8 (0.000 mi.)***	***AC229***	***197***
ASTOURIAN JEWELRY INC.	***650 S. HILL ST. #629***	***0 - 1/8 (0.000 mi.)***	***M233***	***202***
SAVENA JEWELRY INC	***550 S HILL ST #1648***	***0 - 1/8 (0.000 mi.)***	***X237***	***205***
MARVEL JEWELRY	***550 S HILL ST 940***	***0 - 1/8 (0.000 mi.)***	***X240***	***208***
BETTER DIAMOND SETTING CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M246***	***215***
RAINBOW ONE HOUR & STUDIO	***304 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K257***	***221***
PIERELDA JEWELRY	***314 W 6M ST***	***0 - 1/8 (0.000 mi.)***	***S259***	***223***
US FEDERAL RESERVE BANK	***950 S GRAND***	***0 - 1/8 (0.000 mi.)***	***AO279***	***235***
BILTMORE CLEANERS	***342 W 9TH ST***	***0 - 1/8 (0.000 mi.)***	***AL373***	***291***
HAYTAYAN JEWELERS INC	***621 S HILL ST #806***	***0 - 1/8 (0.000 mi.)***	***AC399***	***314***
V J JEWELRY	***629 S HILL ST #607***	***0 - 1/8 (0.000 mi.)***	***AC401***	***316***
SHINE JEWELRY	***629 SOUTH HILL ST #906***	***0 - 1/8 (0.000 mi.)***	***AC403***	***320***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMERICAN HOME PROPERTIES	*629 S HILL ST*	*0 - 1/8 (0.000 mi.)*	*AC404*	*321*
GOLDERN PYRAMID MFG, INC.	*629 SOUTH HILL ST. #204*	*0 - 1/8 (0.000 mi.)*	*AC408*	*325*
PACIFIC CHAIN & JLY MFG CO INC	*607 S HILL ST*	*0 - 1/8 (0.000 mi.)*	*AC412*	*328*
VARTKES JEWELRY CO INC	*607 SO HILL ST RM 731*	*0 - 1/8 (0.000 mi.)*	*AC413*	*329*
KAZU JEWELERS, INC	*607 S HILL ST, STE 928*	*0 - 1/8 (0.000 mi.)*	*AC423*	*342*
SHIMA PEARL CO, INC	*607 S HILL ST #602*	*0 - 1/8 (0.000 mi.)*	*AC425*	*345*
VALLE VELASCO CO	*607 S HILL ST*	*0 - 1/8 (0.000 mi.)*	*AC426*	*346*
JEWELERS MALL THE	*625 S HILL ST*	*0 - 1/8 (0.000 mi.)*	*AC428*	*348*
CAMERA READY	*417 S HILL SUITE #301*	*NE 0 - 1/8 (0.001 mi.)*	*F454*	*369*
HIGH PERFORMANCE MAGAZINE	*240 S BROADWAY 5TH FL*	*NE 0 - 1/8 (0.001 mi.)*	*BB456*	*371*
BROADWAY PLAZA PHOTO	*750 W 7TH ST*	*N 0 - 1/8 (0.002 mi.)*	*G475*	*385*
CAL-MART PLATING CO	*404 W 7TH ST*	*ENE 0 - 1/8 (0.005 mi.)*	*M522*	*418*
SARKISSIAN DESIGNS	*404 W 7TH 11TH FLOOR*	*ENE 0 - 1/8 (0.005 mi.)*	*M523*	*420*
RENE CESPEDES	*404 W 7TH #1415*	*ENE 0 - 1/8 (0.005 mi.)*	*M527*	*425*
FRONTIER JEWELRY	*404 W 7TH ST, STE 901*	*ENE 0 - 1/8 (0.005 mi.)*	*M528*	*427*
JEWELRY DESIGN CENTER	*404 W 7TH ST STE 1020*	*ENE 0 - 1/8 (0.005 mi.)*	*M529*	*428*
F W WOOLWORTHS	*719 S BROADWAY*	*ENE 0 - 1/8 (0.005 mi.)*	*BD546*	*447*
LOS ANGELES ATHLETIC CLUB	431 W 7TH ST	NE 0 - 1/8 (0.006 mi.)	AB567	467
PAULEEN JEWELRY	*411 W 7TH ST*	*ENE 0 - 1/8 (0.006 mi.)*	*M578*	*476*
GOLD ANGLES	*650 S HILL ST # 418 B*	*NE 0 - 1/8 (0.008 mi.)*	*M590*	*486*
G&R JEWELRY	*610 S BROADWAY #516*	*ENE 0 - 1/8 (0.008 mi.)*	*S594*	*489*
ANTRO JEWELRY INC	*610 SOUTH BROADWAY #808*	*ENE 0 - 1/8 (0.008 mi.)*	*S597*	*492*
ADAMIAN JEWELRY	*610 S BROADWAY*	*ENE 0 - 1/8 (0.008 mi.)*	*S600*	*494*
GOLDEN ART JEWELRY	*610 S. BROADWAY #308*	*ENE 0 - 1/8 (0.008 mi.)*	*S604*	*497*
MESROBIAN JEWELRY	*610 S. BROADWAY #710*	*ENE 0 - 1/8 (0.008 mi.)*	*S608*	*500*
ROSE JEWELRY	*610 S BROADWAY #925*	*ENE 0 - 1/8 (0.008 mi.)*	*S611*	*503*
610 BROADWAY ASSOCIATES	*610 S BROADWAY STE 714*	*ENE 0 - 1/8 (0.008 mi.)*	*S615*	*505*
AGOB BEHLOORIAN	*610 SOUTH BROADWAY #306*	*ENE 0 - 1/8 (0.008 mi.)*	*S619*	*511*
INTERSTATE JEWELRY	*610 S BROADWAY #612*	*ENE 0 - 1/8 (0.008 mi.)*	*S621*	*513*
PRESTIGE JEWELRY	*610 S BROADWAY #320*	*ENE 0 - 1/8 (0.008 mi.)*	*S623*	*515*
FORT KNOX DESIGNS	*610 S. BROADWAY - #226*	*ENE 0 - 1/8 (0.008 mi.)*	*S625*	*517*
KEVO'S JEWELRY	*610 S. BROADWAY #1102*	*ENE 0 - 1/8 (0.008 mi.)*	*S627*	*519*
ADN JEWELRY MFG	*610 S BROADWAY ST #802*	*ENE 0 - 1/8 (0.008 mi.)*	*S628*	*520*
ASTRO DISTRIBUTORS INC.	*610 S. BROADWAY #820*	*ENE 0 - 1/8 (0.008 mi.)*	*S630*	*522*
A&V MANUFACTURING CO INC	*610 S BROADWAY #620*	*ENE 0 - 1/8 (0.008 mi.)*	*S635*	*525*
610 BROADWAY ENTERPRISE	*610 BROADWAY*	*ENE 0 - 1/8 (0.008 mi.)*	*S636*	*527*
R AND M JEWELRY	*610 S BROADWAY 804*	*ENE 0 - 1/8 (0.009 mi.)*	*S650*	*537*
JMC JEWELRY	*610 S BROADWAY 703*	*ENE 0 - 1/8 (0.009 mi.)*	*S652*	*539*
TASLAKHYAN JEWELRY INC	*610 S BROADWAY NO 413*	*ENE 0 - 1/8 (0.009 mi.)*	*S653*	*540*
DAVID DESIGN JEWELER	*610 S BROADWAY 424*	*ENE 0 - 1/8 (0.009 mi.)*	*S654*	*542*
SARKES JEWELRY	*412 W 6TH ST SUITE 325*	*NE 0 - 1/8 (0.011 mi.)*	*AC669*	*554*
PARK CENTRAL BUILDING	*412 W 6TH ST*	*NE 0 - 1/8 (0.011 mi.)*	*AC672*	*557*
CALIFORNIA LATIN JEWELERS	*412 WEST SIXTH ST ROOM*	*NE 0 - 1/8 (0.011 mi.)*	*AC673*	*564*
TOYO PEARL CO INC	*412 W 6TH ST SUITE 421*	*NE 0 - 1/8 (0.011 mi.)*	*AC674*	*565*
BALLERINA JEWELERS	*412 W 6TH ST #1320*	*NE 0 - 1/8 (0.011 mi.)*	*AC678*	*569*
DAVID H FELL & CO, INC	*412 W 6TH ST #909*	*NE 0 - 1/8 (0.011 mi.)*	*AC683*	*573*
A & S JEWELRY	*412 W 6TH ST #204*	*NE 0 - 1/8 (0.011 mi.)*	*AC692*	*580*
K&A FINE JEWELRY	*412 W 6TH ST #601*	*NE 0 - 1/8 (0.011 mi.)*	*AC693*	*581*
HERRERAS JEWELRY	*220 W 5TH 713*	*ENE 0 - 1/8 (0.040 mi.)*	*BK748*	*624*
IDEAL JEWELRY	*220 W 5TH ST*	*ENE 0 - 1/8 (0.040 mi.)*	*BK749*	*627*
VERSAILLES JEWERLY	*220 W 5TH ST #505*	*ENE 0 - 1/8 (0.040 mi.)*	*BK752*	*629*
MYRNA'S JEWELRY	*220 W 5TH STREET - R-20*	*ENE 0 - 1/8 (0.040 mi.)*	*BK757*	*633*
WALTER ZIMMER CO	*220 W FIFTH ST*	*ENE 0 - 1/8 (0.040 mi.)*	*BK764*	*639*
GEUVJEHIZIAN GARABED JEWELRY	*220 W 5TH ST #510*	*ENE 0 - 1/8 (0.040 mi.)*	*BK766*	*641*
DAN'S JEWELERS	*220 W 5TH ST #608*	*ENE 0 - 1/8 (0.040 mi.)*	*BK767*	*642*
LOS ANGELES TIMES - LOS ANGELE	*202 W. 1ST ST.*	*NE 0 - 1/8 (0.059 mi.)*	*BY834*	*689*

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
811 WILSHIRE LLC	811 WILSHIRE BLVD	N 0 - 1/8 (0.061 mi.)	BJ854	710
TIMES MIRROR COMPANY	***202 WEST 1ST STREET***	***NE 0 - 1/8 (0.073 mi.)***	***BY912***	***757***
SIMPSON & CHAVIRA	***643 S OLIVE ST 2ND FLOO***	***NE 0 - 1/8 (0.075 mi.)***	***CI920***	***765***
SIMPSON & CHAVIRA INC	***643 S OLIVE ST #1000***	***NE 0 - 1/8 (0.077 mi.)***	***CI933***	***774***
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
AMER TELE & TELE CO LOS ANGELE	***433 S OLIVE ST***	***NE 0 - 1/8 (0.078 mi.)***	***CR955***	***793***
DEPT OF TRANSPORTATION	120 S SPRING ST	NE 0 - 1/8 (0.078 mi.)	BP966	809
HOTEL INTER CONTINENTAL	***251 S OLIVE***	***NE 0 - 1/8 (0.078 mi.)***	***BU978***	***820***
E. H. K. JEWELRY	***453 S. SPRING STREET***	***ENE 0 - 1/8 (0.080 mi.)***	***CU998***	***843***
ANTONIO URIBE MFG	***453 S SPRING ST #421***	***ENE 0 - 1/8 (0.080 mi.)***	***CU1000***	***845***
CONTINENTAL BUILDING	***408 S SPRING ST***	***ENE 0 - 1/8 (0.081 mi.)***	***BL1004***	***848***
RAIL CONSTRUCTION CORP	***METRO RAIL PROJECT OF L***	***ENE 0 - 1/8 (0.082 mi.)***	***CB1013***	***853***
523 W 6TH ST ASSOCIATES,LTD	***523 W 6TH STREET SUITE***	***NE 0 - 1/8 (0.096 mi.)***	***DB1093***	***928***
STANTON, INC	***530 W 6TH ST, STE 407***	***NE 0 - 1/8 (0.102 mi.)***	***DB1106***	***940***
PLANNING DEPT LA CITY OF	***200 N SPRING ST ROOM 10***	***NE 0 - 1/8 (0.120 mi.)***	***CT1153***	***979***
MICROPRINT	***605 SOUTH GRAND AVE***	***NNE 0 - 1/8 (0.124 mi.)***	***DF1185***	***1012***
METROPOLITAN STUCTURE WEST	***300 S GRAND***	***NE 0 - 1/8 (0.125 mi.)***	***DM1192***	***1018***

Lower Elevation	Address	Direction / Distance	Map ID	Page
SHELL SERVICE STATION	***504 W OLYMPIC***	***0 - 1/8 (0.000 mi.)***	***AK340***	***268***
SHELL SERVICE STATION	***504 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AK391***	***305***
A AND B AUTO BODY WORKS	***1101 S BROADWAY***	***0 - 1/8 (0.000 mi.)***	***AY397***	***312***
BIG TICKET PROD ASIAN MKT PL	***1100 S FLOWER***	***WSW 0 - 1/8 (0.005 mi.)***	***AV563***	***462***
DOWNTOWN ONE HOUR PHOTO	***951 S FIGUEROA***	***WNW 0 - 1/8 (0.007 mi.)***	***W583***	***480***
ADAMS PRESS	***830 S BROADWAY ST***	***E 0 - 1/8 (0.010 mi.)***	***AM660***	***547***
CHEVRON STATION 9 0518	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX704***	***591***
ASSOCIATED PRESS	***1111 S HILL ST***	***SSW 0 - 1/8 (0.026 mi.)***	***BF726***	***606***
PHILIPS 1 HR PHOTO	***123 W 9TH ST***	***SE 0 - 1/8 (0.070 mi.)***	***CJ902***	***749***
SINA SILK SCREEN SHOP	***833 S SPRING ST UNIT 30***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1047***	***876***
PHILIPS 1 HOUR PHOTO	***110 E 9TH ST SUITE B-26***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1129***	***964***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/15/2012 has revealed that there are 2 RCRA-CESQG sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HELMUT H DREYER MFG	***607 S HILL ST #734***	***0 - 1/8 (0.000 mi.)***	***AC414***	***331***
RITE AID 6383	600 W SEVENTH ST	NNE 0 - 1/8 (0.003 mi.)	U502	406

EXECUTIVE SUMMARY

Federal ERNS list

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 04/02/2012 has revealed that there are 14 ERNS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	404 W. 7TH ST	0 - 1/8 (0.000 mi.)	M81	81
Not reported	334 WEST 6TH ST	0 - 1/8 (0.000 mi.)	S152	134
Not reported	707 S BROADWAY ST	ENE 0 - 1/8 (0.004 mi.)	BD510	411
Not reported	727 WEST 7TH ST	N 0 - 1/8 (0.005 mi.)	BE532	432
Not reported	7TH FLOOR, 707 SOUTH BR	ENE 0 - 1/8 (0.005 mi.)	BD551	453
Not reported	707 S BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD557	459
Not reported	220 W. 5TH ST.	ENE 0 - 1/8 (0.040 mi.)	BK761	638
Not reported	220 W 5TH ST	ENE 0 - 1/8 (0.040 mi.)	BK765	641
Not reported	L.A. TIMES BLDG 120 S S	NE 0 - 1/8 (0.044 mi.)	BP787	657
Not reported	530 S OLIVE ST	NE 0 - 1/8 (0.075 mi.)	CN922	767
Not reported	200 NORTH SPRING ST/LA	NE 0 - 1/8 (0.078 mi.)	CT971	814
Not reported	200 N. SPRING ST	NE 0 - 1/8 (0.120 mi.)	CT1155	982

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	1130 S. FLOWER ST.	WSW 0 - 1/8 (0.040 mi.)	BM770	645
Not reported	110 E 9TH ST	SE 0 - 1/8 (0.108 mi.)	CJ1122	957

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 05/07/2012 has revealed that there are 6 ENVIROSTOR sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WEST SIXTH & BROADWAY PARTNERS Status: Refer: Other Agency	***314 W. SIXTH STREET***	***0 - 1/8 (0.000 mi.)***	***S182***	***159***
LOS ANGELES UNITED INVESTMENT Status: Refer: Other Agency	650 S. HILL STREET #101	0 - 1/8 (0.000 mi.)	M198	174
M & M HOLDING, LLC Status: Refer: Other Agency	629 S. HILL STREET #120	0 - 1/8 (0.000 mi.)	AC409	326
JEWELRY DESIGN CENTER Status: Refer: Other Agency	404 W. 7TH STREET #221	ENE 0 - 1/8 (0.005 mi.)	M517	414

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNITED BUILDING ASSOCIATES Status: Refer: Other Agency	707 S BROADWAY #411	ENE 0 - 1/8 (0.005 mi.)	BD556	458
PARK CENTRAL BUILDING Status: Refer: Other Agency	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC672***	***557***

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, and dated 05/21/2012 has revealed that there is 1 SWF/LF site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOPEZ CANYON ENVIRONMENTAL CEN	1149 SOUTH BROADWAY #80	S 0 - 1/8 (0.078 mi.)	CO952	792

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 06/14/2012 has revealed that there are 16 LUST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TIMES MIRROR Status: Completed - Case Closed	***240 HILL ST S***	***0 - 1/8 (0.001 mi.)***	***E446***	***362***
BRADBURY BUILDING Status: Completed - Case Closed	304 BROADWAY S.	NE 0 - 1/8 (0.002 mi.)	L474	384
CARRIER CENTER LOS ANGELES Status: Completed - Case Closed	***600 W 7TH ST***	***NNE 0 - 1/8 (0.003 mi.)***	***U499***	***402***
TWIN SPRINGS LLC Status: Completed - Case Closed	433 SPRING STREET, SOUT	ENE 0 - 1/8 (0.044 mi.)	BL791	660
COUNTY OF LOS ANGELES/ISD Status: Open - Remediation	***145 N GRAND AVE***	***NE 0 - 1/8 (0.062 mi.)***	***BS867***	***719***
TIMES MIRROR CORPORATION Status: Completed - Case Closed	***145 SPRING ST S***	***NE 0 - 1/8 (0.076 mi.)***	***BP928***	***770***
LA CITY DEPT WATER & POWER Status: Completed - Case Closed	111 HOPE ST N	NNE 0 - 1/8 (0.078 mi.)	CS960	797
THE MUTUAL GARAGE BUILDING Status: Completed - Case Closed	***363 OLIVE ST S***	***NE 0 - 1/8 (0.078 mi.)***	***CQ961***	***801***
PACIFIC MUTUAL BUILDING Status: Completed - Case Closed	***523 006TH ST W***	***NE 0 - 1/8 (0.099 mi.)***	***DB1102***	***936***
LA CO HALL OF ADMINIST. Status: Completed - Case Closed	***500 TEMPLE ST W***	***NE 0 - 1/8 (0.105 mi.)***	***DD1115***	***948***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HERTZ RENT-A-CAR (FORMER) Status: Completed - Case Closed	1055 006TH ST W	N 0 - 1/8 (0.125 mi.)	DC1198	1028

Lower Elevation	Address	Direction / Distance	Map ID	Page
PROPERTY UNDER CONSTRUCTION Status: Completed - Case Closed	1050-1070 FLOWER ST. S.	0 - 1/8 (0.000 mi.)	AS324	259
UNOCAL #3300 Status: Completed - Case Closed	***730 OLYMPIC BLVD W***	***0 - 1/8 (0.000 mi.)***	***AI346***	***274***
SHELL SERVICE STATION Status: Open - Site Assessment	504 OLYMPIC BLVD. W.	0 - 1/8 (0.000 mi.)	AK349	276
801 TOWER BUILDING Status: Completed - Case Closed	***845 FIGUEROA AVE S***	***NW 0 - 1/8 (0.044 mi.)***	***T788***	***657***
ARCO #5033 Status: Open - Verification Monitoring	1151 S FLOWER ST	WSW 0 - 1/8 (0.063 mi.)	BM872	722

SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 06/14/2012 has revealed that there are 3 SLIC sites within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CITY OF LOS ANGELES - STAPLES	1111 FIGUEROA	W 0 - 1/8 (0.018 mi.)	AV714	598
CITY OF LOS ANGELES - STAPLES Facility Status: Completed - Case Closed	***1111 S FIGUEROA***	***W 0 - 1/8 (0.018 mi.)***	***AV717***	***602***
STAPLES ARENA Facility Status: Open - Remediation	740-750 WEST 10TH PLACE	W 0 - 1/8 (0.088 mi.)	CL1050	878

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 05/09/2012 has revealed that there are 37 UST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OFFICE OF FLEET ADMINISTRATION	***122 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***C10***	***20***
777 TOWER	777 S FIGUEROA ST STE 4	0 - 1/8 (0.000 mi.)	J73	72
MANUFACTURERS LIFE INSURANCE	865 S FIGUEROA ST STE 2	0 - 1/8 (0.000 mi.)	T95	85
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
800 FIGUEROA BUILDING	***800 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***R185***	***161***
FEDERAL RESERVE BANK OF SF	950 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO274	233
CITICORP PLAZA	***725 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J394***	***309***
THE ANGELUS PLAZA	***245 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***E443***	***360***
ANGELUS PLAZA	200 S OLIVE ST	NE 0 - 1/8 (0.002 mi.)	B470	381
HALL OF RECORDS/ LA CO. F.M.D.	320 S BROADWAY	NE 0 - 1/8 (0.003 mi.)	L484	393

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CALIFORNIA INSTITUTE OF TECH	600 W 7TH ST	NNE 0 - 1/8 (0.003 mi.)	U500	404
CHAS F/F G HATHAWAY	***431 W 7TH ST***	***NE 0 - 1/8 (0.006 mi.)***	***AB568***	***468***
COUNTY COURT/LA CO. F.M.D..	111 N HILL ST	NE 0 - 1/8 (0.008 mi.)	C586	482
HAMMERSON PROPERTIES	***655 S HOPE ST***	***NNE 0 - 1/8 (0.030 mi.)***	***BE732***	***611***
MUSIC CENTER OPERATING CO	***135 N GRAND AVE***	***NE 0 - 1/8 (0.051 mi.)***	***BS803***	***668***
L.A. COUNTY FACILITY (PARKING)	140 N GRAND AVE	NE 0 - 1/8 (0.058 mi.)	BS822	683
1ST INTERSTATE TOWER	***707 WILSHIRE BLVD***	***NNE 0 - 1/8 (0.063 mi.)***	***CD879***	***731***
THE LOS ANGELES TIMES	214 W 2ND ST	NE 0 - 1/8 (0.066 mi.)	CE891	741
CITY PARK GARAGE, INC.	530 S OLIVE ST	NE 0 - 1/8 (0.075 mi.)	CN924	768
THE ANGELUS PLAZA	300 S OLIVE ST	NE 0 - 1/8 (0.077 mi.)	CP938	778
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
STATE OF CALIFORNIA	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP967***	***810***
AUTO PARK 10	145 N BROADWAY	NE 0 - 1/8 (0.080 mi.)	BQ996	842
GENERAL OFFICE BUILDING	***111 N HOPE ST***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1069***	***904***
MITSUI FUDOSAN USA INC	***601 S FIGUEROA ST***	***N 0 - 1/8 (0.095 mi.)***	***CZ1081***	***919***
LOS ANGELES CITY HALL	***200 N SPRING ST***	***NE 0 - 1/8 (0.120 mi.)***	***CT1158***	***984***
THE GAS COMPANY TOWER	***555 W 5TH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1163***	***994***
ONE CALIFORNIA PLAZA	***300 S GRAND AVE***	***NE 0 - 1/8 (0.125 mi.)***	***DM1193***	***1020***

Lower Elevation	Address	Direction / Distance	Map ID	Page
GRAND PHOENIX CORP	***501 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AK329***	***262***
HOLIDAY INN	***1020 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***AX344***	***272***
TEXACO STATION	504 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AK371	290
Not reported	409 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AU377	297
DOWNTOWN CAR WASH (CHEVRON)	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX702***	***587***
STAPLES CENTER	***1111 S FIGUEROA ST***	***W 0 - 1/8 (0.018 mi.)***	***AV716***	***600***
TRANSAMERICA CENTER/GARAGE	1133 S OLIVE ST	SSW 0 - 1/8 (0.040 mi.)	AP773	646
MFS INTELENET	1149 S BROADWAY	S 0 - 1/8 (0.078 mi.)	CO953	793
TRANSAMERICA CORP.	1149 S HILL ST	SSW 0 - 1/8 (0.088 mi.)	CH1049	878

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board’s Hazardous Substance Storage Container Database.

A review of the AST list, as provided by EDR, and dated 08/01/2009 has revealed that there are 2 AST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	818 W 7TH ST	N 0 - 1/8 (0.001 mi.)	G458	374
Not reported	611 WILSHIRE BLVD	NNE 0 - 1/8 (0.064 mi.)	BR885	738

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: The EPA’s listing of Brownfields properties from the Cleanups in My Community program, which provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/27/2011 has revealed that there

EXECUTIVE SUMMARY

is 1 US BROWNFIELDS site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ADELANTE EASTSIDE	100 BROADWAY S	0 - 1/8 (0.000 mi.)	A4	12

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is 1 WMUDS/SWAT site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LOS ANGELES CITY-TUJUNGA & SHE	500' E TUJUNGA, 500' N	NE 0 - 1/8 (0.105 mi.)	DD1114	947

Local Lists of Registered Storage Tanks

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 94 CA FID UST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CAILFORINA DEPARTMENT OF GENER	***107 S BROADWAY***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***
METOR RAIL	***120 S OLIVE ST***	***0 - 1/8 (0.000 mi.)***	***12***	***22***
WEBSTER CAREER COLLEGE	***222 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E14***	***23***
CURRENT OCCUPANT	***240 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E15***	***24***
OFFICE OF FLEET ADMINISTRATION	122 S HILL ST	0 - 1/8 (0.000 mi.)	C18	26
CURRENT OCCUPANT	***208 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E22***	***28***
SHANK-OHBAYASHI	***520 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***K37***	***41***
LADT LLC	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K55***	***57***
S. CALIF. RAPID TRANSIT DISTRI	***440 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F57***	***60***
777 TOWER	***777 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J71***	***70***
JMF ENTERPRISES IV LLC	***448 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F80***	***78***
CENTURY PARKING INCORPORATED	***757 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***Q93***	***84***
WESTERN UNION TELEGRAPH CO	***745 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***G102***	***88***
TREPTOW DEVELOPMENT CO	***801 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***O122***	***108***
SERVICE STATION 8419	***706 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M124***	***110***
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
SOUTHERN CALIFORNIA GAS CO	***844 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***N177***	***153***
CHARTER AUTO PARKS INC	***746 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***V184***	***160***
SOUTHERN CALIFORNIA GAS CO	***841 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***Z194***	***170***
SOUTHERN CALIFORNIA GAS CO	***825 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***Z232***	***201***
UNK	***801 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***R238***	***206***
800 FIGUEROA BUILDING	800 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	R261	225
FEDERAL RESERVE BANK OF S F	***950 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***AO285***	***240***
CITICORP PLAZA	725 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	J393	309
CALIFORNIA JEWELRY MART REALTY	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC419***	***338***
ANGELUS PLAZA	***255 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E442***	***359***
THE ANGELUS PLAZA/RHF BUNKER H	***245 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***E444***	***360***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LOS ANGELES TIMES	***130 S BROADWAY***	***0 - 1/8 (0.001 mi.)***	***A451***	***367***
S CALIFORNIA RAPID TRANSIT DIS	***436 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***F452***	***368***
TRANSAMERICA OCCIDENTAL	***150 S BROADWAY***	***NE 0 - 1/8 (0.001 mi.)***	***A455***	***370***
THE HAMMERSON PROPERTY CALIF	***818 E 7TH ST***	***N 0 - 1/8 (0.001 mi.)***	***G461***	***376***
XO COMMUNICATIONS	***600 W 7TH ST***	***NNE 0 - 1/8 (0.003 mi.)***	***U496***	***399***
CENTURY PARKING INCORPORATED	***727 W 7TH ST***	***N 0 - 1/8 (0.005 mi.)***	***BE530***	***431***
BARNES PROPERTIES	***700 S BROADWAY AVE***	***ENE 0 - 1/8 (0.005 mi.)***	***BD549***	***449***
CHAS F/F G HATHAWAY	431 W 7TH ST	NE 0 - 1/8 (0.006 mi.)	AB569	469
COUNTY COURT/LACO F.M.D.	***111 N HILL ST***	***NE 0 - 1/8 (0.008 mi.)***	***C587***	***483***
METRO RAIL SCRTD	***411 W 5TH ST***	***NE 0 - 1/8 (0.009 mi.)***	***K658***	***545***
HOVSEP YACOUBIAN	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC670***	***556***
PARAMOUNT CORPORATION	***640 S GRAND AVE***	***NNE 0 - 1/8 (0.011 mi.)***	***U698***	***586***
COURTS AND RECORDS FEDERAL C/U	***255 W 4TH ST***	***NE 0 - 1/8 (0.023 mi.)***	***H725***	***606***
HAMMERSON PROPERTIES	655 S HOPE ST	NNE 0 - 1/8 (0.030 mi.)	BE731	611
HOME SAVINGS OF AMERICA TOWER	***660 S FIGUEROA ST***	***N 0 - 1/8 (0.034 mi.)***	***BJ737***	***620***
KJELL H QVALE/RAGNAR C QVALE	***419 S SPRING ST***	***ENE 0 - 1/8 (0.044 mi.)***	***BL792***	***661***
COUNTY OF LOS ANGELES ISD	***135 N GRAND***	***NE 0 - 1/8 (0.051 mi.)***	***BS805***	***672***
ENGINE CO 28 LIMITED	***644 S FIGUEROA ST***	***N 0 - 1/8 (0.053 mi.)***	***BJ810***	***676***
AUTO PARK #18/LACO F.M.D.	***140 N GRAND AVE***	***NE 0 - 1/8 (0.058 mi.)***	***BS826***	***686***
EQUITABLE PROPERTIES	***615 S FLOWER ST***	***N 0 - 1/8 (0.060 mi.)***	***BZ839***	***697***
AON CENTER	***707 WILSHIRE BLVD***	***NNE 0 - 1/8 (0.063 mi.)***	***CD874***	***723***
LA ATHLETIC CLUB INC	***646 S OLIVE ST***	***NE 0 - 1/8 (0.070 mi.)***	***CI901***	***748***
THE TIMES MIRROR COMPANY	202 W 1ST ST	NE 0 - 1/8 (0.073 mi.)	BY913	759
PERSHING SQUARE GARAGE	***530 S OLIVE ST***	***NE 0 - 1/8 (0.075 mi.)***	***CN923***	***767***
SAVOY CORPORATION	***406 S OLIVE ST***	***NE 0 - 1/8 (0.076 mi.)***	***BN927***	***769***
DAMES & MOORE	***606 S OLIVE ST***	***NE 0 - 1/8 (0.076 mi.)***	***CI930***	***773***
CROWN PLAZA	***620 S OLIVE ST***	***NE 0 - 1/8 (0.077 mi.)***	***CI935***	***776***
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
CALIFORNIA PLAZA HOTEL, L P	***251 S OLIVE ST***	***NE 0 - 1/8 (0.078 mi.)***	***BU977***	***819***
BUNKER HILL ASSOC	***335 S OLIVE ST***	***NE 0 - 1/8 (0.079 mi.)***	***CP982***	***824***
COMMUNITY REDEVELOPMENT AGENCY	***363 S OLIVE ST***	***NE 0 - 1/8 (0.079 mi.)***	***CQ983***	***824***
CAILFORINA DEPARTMENT OF GENER	***300 S SPRING ST***	***ENE 0 - 1/8 (0.079 mi.)***	***CK986***	***827***
1X COUNTY OF LA	***145 N BROADWAY***	***NE 0 - 1/8 (0.080 mi.)***	***BQ994***	***839***
BANCO POPULAR DE PUERTO RICO	***354 S SPRING ST***	***ENE 0 - 1/8 (0.082 mi.)***	***CV1011***	***852***
MALDEF MEXICAN AMERICAN LEGAL/	***634 S SPRING ST***	***ENE 0 - 1/8 (0.084 mi.)***	***CX1024***	***859***
CITY ENGINEERING	***600 S SPRING ST***	***ENE 0 - 1/8 (0.085 mi.)***	***CB1029***	***862***
ARTHUR ANDERSEN & CO	911 WILSHIRE BLVD	N 0 - 1/8 (0.085 mi.)	CZ1031	864
612 PARTNERS LLC	***612 S FLOWER ST***	***N 0 - 1/8 (0.086 mi.)***	***BZ1035***	***866***
RELIANCE FIGUEROA ASSOCIATES	***930 WILSHIRE BL***	***N 0 - 1/8 (0.089 mi.)***	***CZ1051***	***879***
JIM KRACHMER	***601 S FIGUEROA ST***	***N 0 - 1/8 (0.095 mi.)***	***CZ1079***	***916***
523 W 6TH ST ASSOCIATES LTD/PA	***523 W 6TH ST***	***NE 0 - 1/8 (0.096 mi.)***	***DB1091***	***925***
GRAND AVENUE GARAGE	***525 W 5TH ST***	***NE 0 - 1/8 (0.097 mi.)***	***CN1095***	***931***
BERNARD SICHEL RELIANCE GROUP	***1000 WILSHIRE BLVD***	***NNW 0 - 1/8 (0.120 mi.)***	***CZ1148***	***976***
LOS ANGELES CITY HALL	***200 N SPRING ST***	***NE 0 - 1/8 (0.120 mi.)***	***CT1158***	***984***
SOUTHERN CALIFORNIA GAS CENTER	***555 W 5TH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1169***	***1002***
MUSIC CENTER AHMANSON THEATRE	***215 N GRAND AVE***	***NE 0 - 1/8 (0.122 mi.)***	***DE1177***	***1009***
BUNKER HILL ASSOCIATES	***300 S GRAND AVE***	***NE 0 - 1/8 (0.125 mi.)***	***DM1195***	***1022***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CUSHMAN & WAKEFIELD OF CAL INC	***888 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***T222***	***190***
UNK	501 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AK308	250
MARK GABAY	***1022 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AW319***	***255***
HARRY'S AUTO SERVICE INC.	***504 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AK320***	***256***
CITY OF LOS ANGELES	***1012 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***AX326***	***261***
COMMUNITY REDEVELOPMENT	***956 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***AN335***	***265***

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
EMERIK HOTEL CORP	***1020 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***AX363***	***285***
UNION BANK SERVICE CENTER	***1000 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***AN365***	***287***
9TH & HILL PARTNERSHIP	***220 W 9TH ST***	***0 - 1/8 (0.000 mi.)***	***BA369***	***289***
SHAMMAS REALTY	***714 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AI381***	***299***
UNOCAL SERVICE STATION #3300	***730 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AI384***	***301***
CHEVRON 91030	***599 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AN392***	***307***
DOWNTOWN CAR WASH	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX703***	***589***
LOS ANGELES HERALD EXAMINER	***1111 S BROADWAY***	***S 0 - 1/8 (0.016 mi.)***	***BI711***	***596***
TRANSAMERICA OCCIDENTAL	***1133 S OLIVE ST***	***SSW 0 - 1/8 (0.040 mi.)***	***AP776***	***647***
TRANSAMERICA OCCIDENTAL	***1150 S OLIVE ST***	***SSW 0 - 1/8 (0.061 mi.)***	***BX851***	***706***
BEN P/EDWARD FENTON	***829 S SPRING ST***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1044***	***874***
BEN P OR EDWARD FENTON	***833 S SPRING ST***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1048***	***877***
CURRENT OCCUPANT	***110 E 9TH ST***	***SE 0 - 1/8 (0.103 mi.)***	***CJ1109***	***943***
TRANSAMERICA REALTY SERVICES	***150 W 12TH ST***	***SSW 0 - 1/8 (0.122 mi.)***	***CO1176***	***1008***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 34 HIST UST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OFFICE OF FLEET ADMINISTRATION	***122 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***C10***	***20***
LOS ANGELES STATE OFFICE BUILD	107 S BROADWAY STE 1007	0 - 1/8 (0.000 mi.)	A17	25
LOS ANGELES T.O.C. "LAA"	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K56***	***59***
FLOWER STREET	844 S FLOWER ST	0 - 1/8 (0.000 mi.)	N104	89
SERVICE STATION 8419	706 S HILL ST STE 800	0 - 1/8 (0.000 mi.)	M126	111
FLOWER ST.	844 S FLOWER ST	0 - 1/8 (0.000 mi.)	N137	119
800 FIGUEROA BUILDING	***800 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***R185***	***161***
SERVICE STATION 0999	860 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	T243	210
COUNTY COURTHOUSE	111 N HILL ST	NE 0 - 1/8 (0.008 mi.)	C585	482
MUSIC CENTER PAVILION THEATRE	135 N GRAND AVE	NE 0 - 1/8 (0.036 mi.)	D742	622
MALL PHASE I	***140 N GRAND AVE***	***NE 0 - 1/8 (0.058 mi.)***	***BS821***	***681***
1ST INTERSTATE TOWER	***707 WILSHIRE BLVD***	***NNE 0 - 1/8 (0.063 mi.)***	***CD879***	***731***
RALPH DE FAY	***946 W 8TH ST***	***NNW 0 - 1/8 (0.072 mi.)***	***BT909***	***754***
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
SUB SHOP 03	120 S SPRING ST	NE 0 - 1/8 (0.078 mi.)	BP962	803
07 DIST OFFICE	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP963***	***803***
PHASE II MALL ARCHIVES	145 N BROADWAY	NE 0 - 1/8 (0.080 mi.)	BQ992	838
NEWMAN BULK PLANT	612 S FLOWER ST	N 0 - 1/8 (0.086 mi.)	BZ1036	869
GENERAL OFFICE BLDG.	111 N HOPE ST	NNE 0 - 1/8 (0.093 mi.)	CS1066	900
THORNTON RANCH	523 W 6TH ST	NE 0 - 1/8 (0.096 mi.)	DB1086	923
LOS ANGELES CITY HALL	***200 N SPRING ST***	***NE 0 - 1/8 (0.120 mi.)***	***CT1158***	***984***
MUSIC CENTER ALMANSON THEATRE	215 N GRAND AVE	NE 0 - 1/8 (0.122 mi.)	DE1178	1010

Lower Elevation	Address	Direction / Distance	Map ID	Page
TEXACO	504 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AK264	226
HARRY HAHN	505 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AK284	239
GOODYEAR SERVICE CENTER #9265	***940 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AQ332***	***264***
UNION BANK SERVICE CENTER	1000 S HOPE ST	0 - 1/8 (0.000 mi.)	AN355	282
91030	599 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AN376	296
UNION OIL SERVICE STATION 3300	730 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AI387	303
SERVICE STATION 3300	730 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AI389	304
DOWNTOWN CAR WASH (CHEVRON)	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX702***	***587***

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
LOS ANGELES HERALD EXAMINER	1111 S BROADWAY	S 0 - 1/8 (0.016 mi.)	BI708	593
SERVICE STATION 2686	1133 S OLIVE ST	SSW 0 - 1/8 (0.040 mi.)	AP774	646
SERVICE STATION 7117	110 E 9TH ST	SE 0 - 1/8 (0.103 mi.)	CJ1110	945
DISTRIBUTING STATION 9	926 FRANCISCO ST	WNW 0 - 1/8 (0.109 mi.)	1132	966

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 100 SWEEPS UST sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CAILFORINA DEPARTMENT OF GENER	***107 S BROADWAY***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***
OFFICE OF FLEET ADMINISTRATION	***122 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***C10***	***20***
METOR RAIL	***120 S OLIVE ST***	***0 - 1/8 (0.000 mi.)***	***12***	***22***
WEBSTER CAREER COLLEGE	***222 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E14***	***23***
CURRENT OCCUPANT	***240 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E15***	***24***
CURRENT OCCUPANT	***208 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E22***	***28***
SHANK-OHBAYASHI	***520 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***K37***	***41***
LADT LLC	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K55***	***57***
S. CALIF. RAPID TRANSIT DISTRI	***440 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F57***	***60***
PARKING CONCEPTS INCORPORATED	725 S FLOWER ST	0 - 1/8 (0.000 mi.)	G63	64
777 TOWER	***777 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J71***	***70***
JMF ENTERPRISES IV LLC	***448 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F80***	***78***
CENTURY PARKING INCORPORATED	***757 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***Q93***	***84***
WESTERN UNION TELEGRAPH CO	***745 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***G102***	***88***
MANUFACTURERS LIFE INSURANCE	***865 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***T119***	***104***
TREPTOW DEVELOPMENT CO	***801 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***O122***	***108***
SERVICE STATION 8419	***706 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M124***	***110***
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
SOUTHERN CALIFORNIA GAS CO	***844 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***N177***	***153***
CHARTER AUTO PARKS INC	***746 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***V184***	***160***
800 FIGUEROA BUILDING	***800 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***R185***	***161***
SOUTHERN CALIFORNIA GAS CO	***841 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***Z194***	***170***
SOUTHERN CALIFORNIA GAS CO	***825 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***Z232***	***201***
UNK	***801 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***R238***	***206***
FEDERAL RESERVE BANK OF S F	***950 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***AO285***	***240***
COMMUNITY REDEVELOPMENT AGENCY	943 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO294	244
CITICORP PLAZA	***725 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J394***	***309***
CALIFORNIA JEWELRY MART REALTY	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC419***	***338***
ANGELUS PLAZA	***255 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E442***	***359***
THE ANGELUS PLAZA/RHF BUNKER H	***245 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***E444***	***360***
LOS ANGELES TIMES	***130 S BROADWAY***	***0 - 1/8 (0.001 mi.)***	***A451***	***367***
S CALIFORNIA RAPID TRANSIT DIS	***436 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***F452***	***368***
TRANSAMERICA OCCIDENTAL	***150 S BROADWAY***	***NE 0 - 1/8 (0.001 mi.)***	***A455***	***370***
THE HAMMERSON PROPERTY CALIF	***818 E 7TH ST***	***N 0 - 1/8 (0.001 mi.)***	***G461***	***376***
XO COMMUNICATIONS	***600 W 7TH ST***	***NNE 0 - 1/8 (0.003 mi.)***	***U496***	***399***
CENTURY PARKING INCORPORATED	***727 W 7TH ST***	***N 0 - 1/8 (0.005 mi.)***	***BE530***	***431***
BARNES PROPERTIES	***700 S BROADWAY AVE***	***ENE 0 - 1/8 (0.005 mi.)***	***BD549***	***449***
CHAS F/F G HATHAWAY	***431 W 7TH ST***	***NE 0 - 1/8 (0.006 mi.)***	***AB568***	***468***
COUNTY COURT/LACO F.M.D.	***111 N HILL ST***	***NE 0 - 1/8 (0.008 mi.)***	***C587***	***483***
METRO RAIL SCRTD	***411 W 5TH ST***	***NE 0 - 1/8 (0.009 mi.)***	***K658***	***545***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HOVSEP YACOUBIAN	*412 W 6TH ST*	*NE 0 - 1/8 (0.011 mi.)*	*AC670*	*556*
PARAMOUNT CORPORATION	*640 S GRAND AVE*	*NNE 0 - 1/8 (0.011 mi.)*	*U698*	*586*
COURTS AND RECORDS FEDERAL C/U	*255 W 4TH ST*	*NE 0 - 1/8 (0.023 mi.)*	*H725*	*606*
HAMMERSON PROPERTIES	*655 S HOPE ST*	*NNE 0 - 1/8 (0.030 mi.)*	*BE732*	*611*
HOME SAVINGS OF AMERICA TOWER	*660 S FIGUEROA ST*	*N 0 - 1/8 (0.034 mi.)*	*BJ737*	*620*
KJELL H QVALE/RAGNAR C QVALE	*419 S SPRING ST*	*ENE 0 - 1/8 (0.044 mi.)*	*BL792*	*661*
MUSIC CENTER OPERATING CO	*135 N GRAND AVE*	*NE 0 - 1/8 (0.051 mi.)*	*BS803*	*668*
ENGINE CO 28 LIMITED	*644 S FIGUEROA ST*	*N 0 - 1/8 (0.053 mi.)*	*BJ810*	*676*
AUTO PARK #18/LACO F.M.D.	*140 N GRAND AVE*	*NE 0 - 1/8 (0.058 mi.)*	*BS826*	*686*
EQUITABLE PROPERTIES	*615 S FLOWER ST*	*N 0 - 1/8 (0.060 mi.)*	*BZ839*	*697*
1ST INTERSTATE TOWER	*707 WILSHIRE BLVD*	*NNE 0 - 1/8 (0.063 mi.)*	*CD879*	*731*
THE TIMES MIRROR COMPANY	214 W 2ND ST	NE 0 - 1/8 (0.066 mi.)	CE890	741
LA ATHLETIC CLUB INC	*646 S OLIVE ST*	*NE 0 - 1/8 (0.070 mi.)*	*CI901*	*748*
PERSHING SQUARE GARAGE	*530 S OLIVE ST*	*NE 0 - 1/8 (0.075 mi.)*	*CN923*	*767*
SAVOY CORPORATION	*406 S OLIVE ST*	*NE 0 - 1/8 (0.076 mi.)*	*BN927*	*769*
DAMES & MOORE	*606 S OLIVE ST*	*NE 0 - 1/8 (0.076 mi.)*	*CI930*	*773*
CROWN PLAZA	*620 S OLIVE ST*	*NE 0 - 1/8 (0.077 mi.)*	*CI935*	*776*
PACIFIC BELL	*433 S OLIVE*	*NE 0 - 1/8 (0.077 mi.)*	*CR942*	*781*
STATE OF CALIFORNIA	*120 S SPRING ST*	*NE 0 - 1/8 (0.078 mi.)*	*BP967*	*810*
CALIFORNIA PLAZA HOTEL, L P	*251 S OLIVE ST*	*NE 0 - 1/8 (0.078 mi.)*	*BU977*	*819*
BUNKER HILL ASSOC	*335 S OLIVE ST*	*NE 0 - 1/8 (0.079 mi.)*	*CP982*	*824*
COMMUNITY REDEVELOPMENT AGENCY	*363 S OLIVE ST*	*NE 0 - 1/8 (0.079 mi.)*	*CQ983*	*824*
CAILFORINA DEPARTMENT OF GENER	*300 S SPRING ST*	*ENE 0 - 1/8 (0.079 mi.)*	*CK986*	*827*
1X COUNTY OF LA	*145 N BROADWAY*	*NE 0 - 1/8 (0.080 mi.)*	*BQ994*	*839*
BANCO POPULAR DE PUERTO RICO	*354 S SPRING ST*	*ENE 0 - 1/8 (0.082 mi.)*	*CV1011*	*852*
MALDEF MEXICAN AMERICAN LEGAL/	*634 S SPRING ST*	*ENE 0 - 1/8 (0.084 mi.)*	*CX1024*	*859*
CITY ENGINEERING	*600 S SPRING ST*	*ENE 0 - 1/8 (0.085 mi.)*	*CB1029*	*862*
TEACHERS INSURANCE & ANNUITY	*911 WILSHIRE BLVD*	*N 0 - 1/8 (0.085 mi.)*	*CZ1032*	*864*
612 PARTNERS LLC	*612 S FLOWER ST*	*N 0 - 1/8 (0.086 mi.)*	*BZ1035*	*866*
RELIANCE FIGUEROA ASSOCIATES	*930 WILSHIRE BL*	*N 0 - 1/8 (0.089 mi.)*	*CZ1051*	*879*
GENERAL OFFICE BUILDING	*111 N HOPE ST*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1069*	*904*
MITSUI FUDOSAN USA INC	*601 S FIGUEROA ST*	*N 0 - 1/8 (0.095 mi.)*	*CZ1081*	*919*
523 W 6TH ST ASSOCIATES LTD/PA	*523 W 6TH ST*	*NE 0 - 1/8 (0.096 mi.)*	*DB1091*	*925*
GRAND AVENUE GARAGE	*525 W 5TH ST*	*NE 0 - 1/8 (0.097 mi.)*	*CN1095*	*931*
BERNARD SICHEL RELIANCE GROUP	*1000 WILSHIRE BLVD*	*NNW 0 - 1/8 (0.120 mi.)*	*CZ1148*	*976*
LOS ANGELES CITY HALL	*200 N SPRING ST*	*NE 0 - 1/8 (0.120 mi.)*	*CT1158*	*984*
SOUTHERN CALIFORNIA GAS CENTER	*555 W 5TH ST*	*NE 0 - 1/8 (0.120 mi.)*	*DJ1169*	*1002*
MUSIC CENTER AHMANSON THEATRE	*215 N GRAND AVE*	*NE 0 - 1/8 (0.122 mi.)*	*DE1177*	*1009*
BUNKER HILL ASSOCIATES	*300 S GRAND AVE*	*NE 0 - 1/8 (0.125 mi.)*	*DM1195*	*1022*

Lower Elevation	Address	Direction / Distance	Map ID	Page
CUSHMAN & WAKEFIELD OF CAL INC	*888 S FIGUEROA ST*	*0 - 1/8 (0.000 mi.)*	*T222*	*190*
MARK GABAY	*1022 S HILL ST*	*0 - 1/8 (0.000 mi.)*	*AW319*	*255*
HARRY'S AUTO SERVICE INC.	*504 W OLYMPIC BLVD*	*0 - 1/8 (0.000 mi.)*	*AK320*	*256*
CITY OF LOS ANGELES	*1012 S FIGUEROA ST*	*0 - 1/8 (0.000 mi.)*	*AX326*	*261*
GRAND PHOENIX CORP	*501 W OLYMPIC BLVD*	*0 - 1/8 (0.000 mi.)*	*AK329*	*262*
COMMUNITY REDEVELOPMENT	*956 S HOPE ST*	*0 - 1/8 (0.000 mi.)*	*AN335*	*265*
EMERIK HOTEL CORP	*1020 S FIGUEROA ST*	*0 - 1/8 (0.000 mi.)*	*AX363*	*285*
UNION BANK SERVICE CENTER	*1000 S HOPE ST*	*0 - 1/8 (0.000 mi.)*	*AN365*	*287*
9TH & HILL PARTNERSHIP	*220 W 9TH ST*	*0 - 1/8 (0.000 mi.)*	*BA369*	*289*
SHAMMAS REALTY	*714 W OLYMPIC BLVD*	*0 - 1/8 (0.000 mi.)*	*AI381*	*299*
UNOCAL SERVICE STATION #3300	*730 W OLYMPIC BLVD*	*0 - 1/8 (0.000 mi.)*	*AI384*	*301*
CHEVRON 91030	*599 W OLYMPIC BLVD*	*0 - 1/8 (0.000 mi.)*	*AN392*	*307*
DOWNTOWN CAR WASH	*811 W OLYMPIC BLVD*	*WNW 0 - 1/8 (0.013 mi.)*	*AX703*	*589*
LOS ANGELES HERALD EXAMINER	*1111 S BROADWAY*	*S 0 - 1/8 (0.016 mi.)*	*BI711*	*596*

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
TRANSAMERICA OCCIDENTAL	***1133 S OLIVE ST***	***SSW 0 - 1/8 (0.040 mi.)***	***AP776***	***647***
TRANSAMERICA OCCIDENTAL	***1150 S OLIVE ST***	***SSW 0 - 1/8 (0.061 mi.)***	***BX851***	***706***
BEN P/EDWARD FENTON	***829 S SPRING ST***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1044***	***874***
BEN P OR EDWARD FENTON	***833 S SPRING ST***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1048***	***877***
NIPPON EXPRESS USA INC.	970 FRANCISCO ST	WNW 0 - 1/8 (0.102 mi.)	CC1105	939
CURRENT OCCUPANT	***110 E 9TH ST***	***SE 0 - 1/8 (0.103 mi.)***	***CJ1109***	***943***
TRANSAMERICA REALTY SERVICES	***150 W 12TH ST***	***SSW 0 - 1/8 (0.122 mi.)***	***CO1176***	***1008***

Records of Emergency Release Reports

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 03/28/2012 has revealed that there are 24 CHMIRS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	319 W 6TH ST	0 - 1/8 (0.000 mi.)	S186	162
Date Completed: 19-OCT-88				
Not reported	334 WEST 6TH ST	0 - 1/8 (0.000 mi.)	S216	185
Not reported	FIRST ST AND BROADWAY	0 - 1/8 (0.001 mi.)	A450	365
Not reported	727 W. 7TH ST. (COMMERC	N 0 - 1/8 (0.005 mi.)	BE538	436
Not reported	303 W. 6TH ST.	ENE 0 - 1/8 (0.005 mi.)	S542	442
Not reported	***527 WEST 7TH ST***	***NE 0 - 1/8 (0.005 mi.)***	***P550***	***450***
UNITED BUILDING ASSOCIATES	***707 SO BROADWAY RM 411***	***ENE 0 - 1/8 (0.005 mi.)***	***BD553***	***453***
Not reported	707 S BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD554	456
Date Completed: 09-FEB-89				
Not reported	411 WEST 7TH STREET	ENE 0 - 1/8 (0.006 mi.)	M579	478
Not reported	412 W. 6TH ST. ROOM 507	NE 0 - 1/8 (0.011 mi.)	AC688	577
Date Completed: 14-AUG-89				
Not reported	BEHIND 412 W. 6 TH ST	NE 0 - 1/8 (0.011 mi.)	AC694	583
Not reported	220 WEST 5TH STREET	ENE 0 - 1/8 (0.040 mi.)	BK754	631
Date Completed: 24-MAY-91				
Not reported	433 S. SPRING ST.	ENE 0 - 1/8 (0.044 mi.)	BL796	665
Not reported	637 WILSHIRE BLVD (IN F	NNE 0 - 1/8 (0.063 mi.)	BR881	735
Not reported	433 SOUTH OLIVE ST.	NE 0 - 1/8 (0.077 mi.)	CR941	779
CALTRANS DISTRICT 7 - SHOP	***120 SOUTH SPRING STREET***	***NE 0 - 1/8 (0.078 mi.)***	***BP969***	***812***
Date Completed: 03-APR-91				
SOUTHERN CALIFORNIA GAS COMPAN	***555 WEST 5TH STREET***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1161***	***990***
Not reported	555 W. 5TH STREET	NE 0 - 1/8 (0.120 mi.)	DJ1172	1005
Not reported	300 S. GRAND AVE	NE 0 - 1/8 (0.125 mi.)	DM1190	1016

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	600 WEST 9TH STREET UNI	0 - 1/8 (0.000 mi.)	Z231	200
Not reported	OLYMPIC & OLIVE	0 - 1/8 (0.000 mi.)	AJ375	295
Not reported	1130 SOUTH FLOWER ST	WSW 0 - 1/8 (0.040 mi.)	BM777	648
Not reported	110 E 9TH ST	SE 0 - 1/8 (0.108 mi.)	CJ1121	956
Date Completed: 21-JUN-88				
Not reported	916 SOUTH FRANCISCO STR	WNW 0 - 1/8 (0.115 mi.)	CM1136	967

EXECUTIVE SUMMARY

Other Ascertainable Records

RCRA-NonGen: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA-NonGen list, as provided by EDR, and dated 03/15/2012 has revealed that there are 16 RCRA-NonGen sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BROADWAY STATE OFFICE BLDG	***320 W FOURTH ST***	***0 - 1/8 (0.000 mi.)***	***H30***	***35***
VVA2 JEWELRY CO	***650 S HILL ST #616***	***0 - 1/8 (0.000 mi.)***	***M142***	***124***
O D I MOUNTINGS INC	***718 S HILL ST NO 303***	***0 - 1/8 (0.000 mi.)***	***AB145***	***127***
KITSINIAN JEWELRY	***629 S HILL ST #200***	***0 - 1/8 (0.000 mi.)***	***AC406***	***323***
CALIFORNIA JEWELRY MART	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC418***	***335***
V A OUTPATIENT CLINICS	***425 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F432***	***351***
LENCO JEWELRY, INC	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC679***	***570***
SIERRA INTL INVESTMENT PROPERT	***220 W 5TH ST STE 407***	***ENE 0 - 1/8 (0.040 mi.)***	***BK759***	***635***
OMNI VISION INTERNATIONAL INC	707 WILSHIRE BLVD	NNE 0 - 1/8 (0.063 mi.)	CD877	730
PACIFIC BELL	***611 WILSHIRE***	***NNE 0 - 1/8 (0.064 mi.)***	***BR886***	***739***
CALTRANS DISTRICT 7	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP965***	***806***
SOUTHERN CALIFORNIA GAS CO	555 W 5TH ST	NE 0 - 1/8 (0.120 mi.)	DJ1168	1000

Lower Elevation	Address	Direction / Distance	Map ID	Page
US FEDERAL RESERVE BANK	***409 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AU314***	***253***
BONE DEEP - HERRALD EXAMINER	1111 S BROADWAY	S 0 - 1/8 (0.016 mi.)	BI710	595
ANACOMP INC	***1149 S BROADWAY ST***	***S 0 - 1/8 (0.078 mi.)***	***CO951***	***791***
PHILLIPS 1 HOUR PHOTO	***110 E 9TH STREET***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1119***	***952***

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

A review of the DOT OPS list, as provided by EDR, and dated 07/29/2011 has revealed that there is 1 DOT OPS site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
Not reported	810 SOUTH FLOWER ST	0 - 1/8 (0.000 mi.)	N136	117

TSCA: The Toxic Substances Control Act identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. The United States Environmental Protection Agency has no current plan to update and/or re-issue this database.

A review of the TSCA list, as provided by EDR, and dated 12/31/2006 has revealed that there is 1 TSCA site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ARCO-LYONDELL PETROCHEM	911 WILSHIRE BLVD	N 0 - 1/8 (0.085 mi.)	CZ1034	866

EXECUTIVE SUMMARY

FTTS: FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act) over the previous five years. To maintain currency, EDR contacts the Agency on a quarterly basis.

A review of the FTTS list, as provided by EDR, and dated 04/09/2009 has revealed that there are 7 FTTS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LIBERTY NATIONAL ENT - SHAHRAM	*830 S, HILL ST. #371*	*0 - 1/8 (0.000 mi.)*	*AR345*	*273*
MORLIN MANAGEMENT CORP	*617 W 7TH ST STE 1010*	*NNE 0 - 1/8 (0.005 mi.)*	*U560*	*460*
LOS ANGELES TIMES	*145 S SPRING ST*	*NE 0 - 1/8 (0.077 mi.)*	*BP939*	*778*
LOS ANGELES DEPARTMENT OF WATE	*111 N HOPE ST RM 1121*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1059*	*892*
LOS ANGELES DEPARTMENT OF WATE	*111 N HOPE ST RM 1121*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1060*	*892*
LOS ANGELES DEPT. WATER & POWE	*111 N HOPE ST. RM 1050*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1061*	*893*
LOS ANGELES DEPT. OF WATER & P	*111 NORTH HOPE STREET*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1067*	*902*

HIST FTTS: A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

A review of the HIST FTTS list, as provided by EDR, and dated 10/19/2006 has revealed that there are 7 HIST FTTS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LIBERTY NATIONAL ENT - SHAHRAM	*830 S, HILL ST. #371*	*0 - 1/8 (0.000 mi.)*	*AR345*	*273*
MORLIN MANAGEMENT CORP	*617 W 7TH ST STE 1010*	*NNE 0 - 1/8 (0.005 mi.)*	*U560*	*460*
LOS ANGELES TIMES	*145 S SPRING ST*	*NE 0 - 1/8 (0.077 mi.)*	*BP939*	*778*
LOS ANGELES DEPARTMENT OF WATE	*111 N HOPE ST RM 1121*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1059*	*892*
LOS ANGELES DEPARTMENT OF WATE	*111 N HOPE ST RM 1121*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1060*	*892*
LOS ANGELES DEPT. WATER & POWE	*111 N HOPE ST. RM 1050*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1061*	*893*
LOS ANGELES DEPT. OF WATER & P	*111 NORTH HOPE STREET*	*NNE 0 - 1/8 (0.093 mi.)*	*CS1067*	*902*

ICIS: The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

A review of the ICIS list, as provided by EDR, and dated 07/20/2011 has revealed that there are 3 ICIS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LIBERTY NATIONAL ENTERPRISES	830 HILL STREET LOS	0 - 1/8 (0.000 mi.)	AR278	234
JEWELRY DESIGN CENTER	404 W 7TH ST STE 1020	ENE 0 - 1/8 (0.005 mi.)	M515	413
LOS ANGELES BUREAU OF SANITATI	433 S SPRING ST LOS	ENE 0 - 1/8 (0.044 mi.)	BL793	662

EXECUTIVE SUMMARY

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 10/23/2011 has revealed that there are 169 FINDS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CALIF STATE GARAGE	***122 SO HILL ST***	***0 - 1/8 (0.000 mi.)***	***C8***	***16***
CALIFORNIA DEPT OF JUSTICE	***107 S BROADWAY RM 3131***	***0 - 1/8 (0.000 mi.)***	***A9***	***19***
ADELANTE EASTSIDE	100 BROADWAY S	0 - 1/8 (0.000 mi.)	A13	23
BROADWAY STATE OFFICE BLDG	***320 W FOURTH ST***	***0 - 1/8 (0.000 mi.)***	***H30***	***35***
UNIQUE TIME SERVICE	***448 S HILL ST #408***	***0 - 1/8 (0.000 mi.)***	***F42***	***45***
BOB CISNEROS JEWERLY MFG	***315 W 5TH ST #708A***	***0 - 1/8 (0.000 mi.)***	***K45***	***48***
ALVIN I SOLOMON CO	***315 W 5TH ST RM 704***	***0 - 1/8 (0.000 mi.)***	***K47***	***50***
SAKS STYLING	***448 S HILL ST STE 510***	***0 - 1/8 (0.000 mi.)***	***F50***	***53***
PLAZA ONE HOUR PHOTO	***735 SO FIGUEROA SUITE 1***	***0 - 1/8 (0.000 mi.)***	***J52***	***55***
GARUN JEWELRY MANUFACTURING, I	***448 SOUTH HILL STREET #***	***0 - 1/8 (0.000 mi.)***	***F58***	***61***
BROADWAY PLAZA	***700 S FLOWER ST SUTIE 4***	***0 - 1/8 (0.000 mi.)***	***G79***	***75***
ASK GOLD INC	716 S OLIVE ST	0 - 1/8 (0.000 mi.)	P85	82
GOLDEN SCOPE INC	***650 S HILL ST #827***	***0 - 1/8 (0.000 mi.)***	***M111***	***95***
LOS ANGELES UNITED INVEST CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M113***	***96***
JEWELS BY JACKING INC	***712 S OLIVE #311***	***0 - 1/8 (0.000 mi.)***	***P118***	***103***
OLYMPIA DESIGN	***314 W 6TH ST #424***	***0 - 1/8 (0.000 mi.)***	***S127***	***112***
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
VVA2 JEWELRY CO	***650 S HILL ST #616***	***0 - 1/8 (0.000 mi.)***	***M142***	***124***
N T A INVESTMENTS	***718 S HILL ST STE 103***	***0 - 1/8 (0.000 mi.)***	***AB144***	***126***
O D I MOUNTINGS INC	***718 S HILL ST NO 303***	***0 - 1/8 (0.000 mi.)***	***AB145***	***127***
S OLIVE PARTNERSHIP	***712 SOUTH OLIVE ST # 20***	***0 - 1/8 (0.000 mi.)***	***P149***	***130***
M AND M HOLDING L L C	***728 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AB161***	***139***
K AND K JEWELRY INC	***606 S HILL ST #709***	***0 - 1/8 (0.000 mi.)***	***AC165***	***142***
DESIGNED BY SCORPIO INC	***650 S HILL ST. #915***	***0 - 1/8 (0.000 mi.)***	***M166***	***143***
WESTERN MGMT CORP	***314 W SIXTH ST***	***0 - 1/8 (0.000 mi.)***	***S171***	***148***
MARTIN BUILDING COMPANY	816 S. GRAND AVENUE	0 - 1/8 (0.000 mi.)	O179	156
SO CALIF GAS CO/FLOWER ST FACI	***810 S FLOWER ST.***	***0 - 1/8 (0.000 mi.)***	***N190***	***166***
W SIXTH AND BROADWAY PARTNERSH	***314 W SIXTH ST 626***	***0 - 1/8 (0.000 mi.)***	***S195***	***170***
SUNSHINE PLATING	***650 S HILL ST SUITE 818***	***0 - 1/8 (0.000 mi.)***	***M199***	***175***
JOHNS EXCHANGE INC	***650 SOUTH HILL ST NUMBE***	***0 - 1/8 (0.000 mi.)***	***M203***	***178***
UNIQUE PREMIUM METALS, INC	640 S HILL ST, STE 743	0 - 1/8 (0.000 mi.)	M204	179
ABKARIAN JEWELRY	***650 S HILL ST #916***	***0 - 1/8 (0.000 mi.)***	***M217***	***186***
VARDERESSIAN JEWELRY	***550 S HILL ST #764***	***0 - 1/8 (0.000 mi.)***	***AC223***	***192***
UNIDOR JEWELRY	***606 S HILL ST #417***	***0 - 1/8 (0.000 mi.)***	***AC229***	***197***
ASTOURIAN JEWELRY INC.	***650 S. HILL ST. #629***	***0 - 1/8 (0.000 mi.)***	***M233***	***202***
SAVENA JEWELRY INC	***550 S HILL ST #1648***	***0 - 1/8 (0.000 mi.)***	***X237***	***205***
MARVEL JEWELRY	***550 S HILL ST 940***	***0 - 1/8 (0.000 mi.)***	***X240***	***208***
BETTER DIAMOND SETTING CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M246***	***215***
RAINBOW ONE HOUR & STUDIO	***304 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K257***	***221***
PIERELDA JEWELRY	***314 W 6M ST***	***0 - 1/8 (0.000 mi.)***	***S259***	***223***
US FEDERAL RESERVE BANK	***950 S GRAND***	***0 - 1/8 (0.000 mi.)***	***AO279***	***235***
LIBERTY NATIONAL ENT - SHAHRAM	***830 S, HILL ST. #371***	***0 - 1/8 (0.000 mi.)***	***AR345***	***273***
LIBERTY NATIONAL ENTERPRISES	830 HILL STREET	0 - 1/8 (0.000 mi.)	AR368	289
BILTMORE CLEANERS	***342 W 9TH ST***	***0 - 1/8 (0.000 mi.)***	***AL373***	***291***
HAYTAYAN JEWELERS INC	***621 S HILL ST #806***	***0 - 1/8 (0.000 mi.)***	***AC399***	***314***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
V J JEWELRY	***629 S HILL ST #607***	***0 - 1/8 (0.000 mi.)***	***AC401***	***316***
SHINE JEWELRY	***629 SOUTH HILL ST #906***	***0 - 1/8 (0.000 mi.)***	***AC403***	***320***
AMERICAN HOME PROPERTIES	***629 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC404***	***321***
KITSINIAN JEWELRY	***629 S HILL ST #200***	***0 - 1/8 (0.000 mi.)***	***AC406***	***323***
GOLDERN PYRAMID MFG, INC.	***629 SOUTH HILL ST. #204***	***0 - 1/8 (0.000 mi.)***	***AC408***	***325***
PACIFIC CHAIN & JLY MFG CO INC	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC412***	***328***
VARTKES JEWELRY CO INC	***607 SO HILL ST RM 731***	***0 - 1/8 (0.000 mi.)***	***AC413***	***329***
HELMUT H DREYER MFG	***607 S HILL ST #734***	***0 - 1/8 (0.000 mi.)***	***AC414***	***331***
CALIFORNIA JEWELRY MART	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC418***	***335***
KAZU JEWELERS, INC	***607 S HILL ST, STE 928***	***0 - 1/8 (0.000 mi.)***	***AC423***	***342***
SHIMA PEARL CO, INC	***607 S HILL ST #602***	***0 - 1/8 (0.000 mi.)***	***AC425***	***345***
VALLE VELASCO CO	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC426***	***346***
JEWELERS MALL THE	***625 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC428***	***348***
V A OUTPATIENT CLINICS	***425 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F432***	***351***
CAMERA READY	***417 S HILL SUITE #301***	***NE 0 - 1/8 (0.001 mi.)***	***F454***	***369***
HIGH PERFORMANCE MAGAZINE	***240 S BROADWAY 5TH FL***	***NE 0 - 1/8 (0.001 mi.)***	***BB456***	***371***
BROADWAY PLAZA PHOTO	***750 W 7TH ST***	***N 0 - 1/8 (0.002 mi.)***	***G475***	***385***
RITE AID 6383	600 W SEVENTH ST	NNE 0 - 1/8 (0.003 mi.)	U494	399
KIRK-RICH DIALS	404 W. 7TH STREET, SUIT	ENE 0 - 1/8 (0.005 mi.)	M521	418
CAL-MART PLATING CO	***404 W 7TH ST***	***ENE 0 - 1/8 (0.005 mi.)***	***M522***	***418***
SARKISSIAN DESIGNS	***404 W 7TH 11TH FLOOR***	***ENE 0 - 1/8 (0.005 mi.)***	***M523***	***420***
RENE CESPEDES	***404 W 7TH #1415***	***ENE 0 - 1/8 (0.005 mi.)***	***M527***	***425***
FRONTIER JEWELRY	***404 W 7TH ST, STE 901***	***ENE 0 - 1/8 (0.005 mi.)***	***M528***	***427***
JEWELRY DESIGN CENTER	***404 W 7TH ST STE 1020***	***ENE 0 - 1/8 (0.005 mi.)***	***M529***	***428***
ROOSEVELT BLDG LTD	***727 W 7TH ST***	***N 0 - 1/8 (0.005 mi.)***	***BE541***	***440***
F W WOOLWORTHS	***719 S BROADWAY***	***ENE 0 - 1/8 (0.005 mi.)***	***BD546***	***447***
MORLIN MANAGEMENT CORP	***617 W 7TH ST STE 1010***	***NNE 0 - 1/8 (0.005 mi.)***	***U560***	***460***
LOS ANGELES ATHLETIC CLUB	431 WEST 7TH STREET	NE 0 - 1/8 (0.006 mi.)	AB571	474
LOS ANGELES ATHLETIC CLUB	431 W 7TH ST	NE 0 - 1/8 (0.006 mi.)	AB572	474
PAULEEN JEWELRY	***411 W 7TH ST***	***ENE 0 - 1/8 (0.006 mi.)***	***M578***	***476***
GOLD ANGLES	***650 S HILL ST # 418 B***	***NE 0 - 1/8 (0.008 mi.)***	***M590***	***486***
G&R JEWELRY	***610 S BROADWAY #516***	***ENE 0 - 1/8 (0.008 mi.)***	***S594***	***489***
ANTRO JEWELRY INC	***610 SOUTH BROADWAY #808***	***ENE 0 - 1/8 (0.008 mi.)***	***S597***	***492***
ADAMIAN JEWELRY	***610 S BROADWAY***	***ENE 0 - 1/8 (0.008 mi.)***	***S600***	***494***
GOLDEN ART JEWELRY	***610 S. BROADWAY #308***	***ENE 0 - 1/8 (0.008 mi.)***	***S604***	***497***
MESROBIAN JEWELRY	***610 S. BROADWAY #710***	***ENE 0 - 1/8 (0.008 mi.)***	***S608***	***500***
ROSE JEWELRY	***610 S BROADWAY #925***	***ENE 0 - 1/8 (0.008 mi.)***	***S611***	***503***
610 BROADWAY ASSOCIATES	***610 S BROADWAY STE 714***	***ENE 0 - 1/8 (0.008 mi.)***	***S615***	***505***
AGOB BEHLOORIAN	***610 SOUTH BROADWAY #306***	***ENE 0 - 1/8 (0.008 mi.)***	***S619***	***511***
INTERSTATE JEWELRY	***610 S BROADWAY #612***	***ENE 0 - 1/8 (0.008 mi.)***	***S621***	***513***
PRESTIGE JEWELRY	***610 S BROADWAY #320***	***ENE 0 - 1/8 (0.008 mi.)***	***S623***	***515***
FORT KNOX DESIGNS	***610 S. BROADWAY - #226***	***ENE 0 - 1/8 (0.008 mi.)***	***S625***	***517***
KEVO'S JEWELRY	***610 S. BROADWAY #1102***	***ENE 0 - 1/8 (0.008 mi.)***	***S627***	***519***
ADN JEWELRY MFG	***610 S BROADWAY ST #802***	***ENE 0 - 1/8 (0.008 mi.)***	***S628***	***520***
ASTRO DISTRIBUTORS INC.	***610 S. BROADWAY #820***	***ENE 0 - 1/8 (0.008 mi.)***	***S630***	***522***
A&V MANUFACTURING CO INC	***610 S BROADWAY #620***	***ENE 0 - 1/8 (0.008 mi.)***	***S635***	***525***
610 BROADWAY ENTERPRISE	***610 BROADWAY***	***ENE 0 - 1/8 (0.008 mi.)***	***S636***	***527***
R AND M JEWELRY	***610 S BROADWAY 804***	***ENE 0 - 1/8 (0.009 mi.)***	***S650***	***537***
JMC JEWELRY	***610 S BROADWAY 703***	***ENE 0 - 1/8 (0.009 mi.)***	***S652***	***539***
TASLAKHYAN JEWELRY INC	***610 S BROADWAY NO 413***	***ENE 0 - 1/8 (0.009 mi.)***	***S653***	***540***
DAVID DESIGN JEWELER	***610 S BROADWAY 424***	***ENE 0 - 1/8 (0.009 mi.)***	***S654***	***542***
SARKES JEWELRY	***412 W 6TH ST SUITE 325***	***NE 0 - 1/8 (0.011 mi.)***	***AC669***	***554***
PARK CENTRAL BUILDING	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC672***	***557***
CALIFORNIA LATIN JEWELERS	***412 WEST SIXTH ST ROOM***	***NE 0 - 1/8 (0.011 mi.)***	***AC673***	***564***
TOYO PEARL CO INC	***412 W 6TH ST SUITE 421***	***NE 0 - 1/8 (0.011 mi.)***	***AC674***	***565***
BALLERINA JEWELERS	***412 W 6TH ST #1320***	***NE 0 - 1/8 (0.011 mi.)***	***AC678***	***569***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LENCO JEWELRY, INC	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC679***	***570***
DAVID H FELL & CO, INC	***412 W 6TH ST #909***	***NE 0 - 1/8 (0.011 mi.)***	***AC683***	***573***
A & S JEWELRY	***412 W 6TH ST #204***	***NE 0 - 1/8 (0.011 mi.)***	***AC692***	***580***
K&A FINE JEWELRY	***412 W 6TH ST #601***	***NE 0 - 1/8 (0.011 mi.)***	***AC693***	***581***
HERRERAS JEWELRY	***220 W 5TH 713***	***ENE 0 - 1/8 (0.040 mi.)***	***BK748***	***624***
IDEAL JEWELRY	***220 W 5TH ST***	***ENE 0 - 1/8 (0.040 mi.)***	***BK749***	***627***
VERSAILLES JEWERLY	***220 W 5TH ST #505***	***ENE 0 - 1/8 (0.040 mi.)***	***BK752***	***629***
MYRNA’S JEWELRY	***220 W 5TH STREET - R-20***	***ENE 0 - 1/8 (0.040 mi.)***	***BK757***	***633***
SIERRA INTL INVESTMENT PROPERT	***220 W 5TH ST STE 407***	***ENE 0 - 1/8 (0.040 mi.)***	***BK759***	***635***
WALTER ZIMMER CO	***220 W FIFTH ST***	***ENE 0 - 1/8 (0.040 mi.)***	***BK764***	***639***
GEUVJEHIZIAN GARABED JEWELRY	***220 W 5TH ST #510***	***ENE 0 - 1/8 (0.040 mi.)***	***BK766***	***641***
DAN’S JEWELERS	***220 W 5TH ST #608***	***ENE 0 - 1/8 (0.040 mi.)***	***BK767***	***642***
LOS ANGELES BUREAU OF SANITATI	433 S SPRING ST	ENE 0 - 1/8 (0.044 mi.)	BL794	662
811 WILSHIRE LLC	811 WILSHIRE BLVD	N 0 - 1/8 (0.061 mi.)	BJ852	707
CALIFORNIA ACADEMY EARLY COLLE	700 WILSHIRE BLVD	NNE 0 - 1/8 (0.061 mi.)	BR856	712
CA ACADEMY FOR LIBERAL STUDIES	700 WILSHIRE BLVD FOURT	NNE 0 - 1/8 (0.061 mi.)	BR859	714
OMNI VISION INTERNATIONAL INC	707 WILSHIRE BLVD	NNE 0 - 1/8 (0.063 mi.)	CD873	723
FIRST INTERSTATE TOWER A JOINT	707 WILSHIRE BOULEVARD	NNE 0 - 1/8 (0.063 mi.)	CD876	730
PACIFIC BELL	***611 WILSHIRE***	***NNE 0 - 1/8 (0.064 mi.)***	***BR886***	***739***
VAN NUYS APARTMENTS	210 W 7TH ST	E 0 - 1/8 (0.067 mi.)	CG898	747
TIMES MIRROR COMPANY	***202 WEST 1ST STREET***	***NE 0 - 1/8 (0.073 mi.)***	***BY912***	***757***
SIMPSON & CHAVIRA	***643 S OLIVE ST 2ND FLOO***	***NE 0 - 1/8 (0.075 mi.)***	***CI920***	***765***
SIMPSON & CHAVIRA INC	***643 S OLIVE ST #1000***	***NE 0 - 1/8 (0.077 mi.)***	***CI933***	***774***
LOS ANGELES TIMES	***145 S SPRING ST***	***NE 0 - 1/8 (0.077 mi.)***	***BP939***	***778***
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
AMER TELE & TELE CO LOS ANGELE	***433 S OLIVE ST***	***NE 0 - 1/8 (0.078 mi.)***	***CR955***	***793***
CALTRANS DISTRICT 7	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP965***	***806***
HOTEL INTER CONTINENTAL	***251 S OLIVE***	***NE 0 - 1/8 (0.078 mi.)***	***BU978***	***820***
E. H. K. JEWELRY	***453 S. SPRING STREET***	***ENE 0 - 1/8 (0.080 mi.)***	***CU998***	***843***
ANTONIO URIBE MFG	***453 S SPRING ST #421***	***ENE 0 - 1/8 (0.080 mi.)***	***CU1000***	***845***
CONTINENTAL BUILDING	***408 S SPRING ST***	***ENE 0 - 1/8 (0.081 mi.)***	***BL1004***	***848***
RAIL CONSTRUCTION CORP	***METRO RAIL PROJECT OF L***	***ENE 0 - 1/8 (0.082 mi.)***	***CB1013***	***853***
MONSENOR OSCAR ROMERO CHARTER	440 SHATTO PLACEACE	ENE 0 - 1/8 (0.084 mi.)	CX1025	860
HANJIN INTERNATIONAL CORPORATI	930 WILSHIRE BOULEVARD	N 0 - 1/8 (0.089 mi.)	CZ1053	885
LA CITY, DWP	***P.O. BOX 51111***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1057***	***887***
GENERAL OFFICE BUILDING	111 N HOPE ST	NNE 0 - 1/8 (0.093 mi.)	CS1062	893
LADWP JOHN FERRARO BUILIDING	***111 N HOPE ST***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1064***	***894***
MITSUI FUDOSAN (USA) INC	***600-601 SO FIGUEROA ST***	***N 0 - 1/8 (0.095 mi.)***	***CZ1075***	***912***
COLLEGE READY ACADEMY HIGH #5	1729 WEST MARTIN LUTHER	NE 0 - 1/8 (0.096 mi.)	DB1087	923
COLLEGE READY ACADEMY HIGH #7	1265 EAST 112TH ST	NE 0 - 1/8 (0.096 mi.)	DB1090	925
LA PACIFIC CENTER	***523 W SIXTH ST STE 218***	***NE 0 - 1/8 (0.096 mi.)***	***DB1092***	***926***
523 W 6TH ST ASSOCIATES,LTD	***523 W 6TH STREET SUITE***	***NE 0 - 1/8 (0.096 mi.)***	***DB1093***	***928***
STANTON, INC	***530 W 6TH ST, STE 407***	***NE 0 - 1/8 (0.102 mi.)***	***DB1106***	***940***
CAPITAL & COUNTIES USA,INC	800 WEST 6TH ST SUITE 8	N 0 - 1/8 (0.116 mi.)	DG1137	969
PLANNING DEPT LA CITY OF	***200 N SPRING ST ROOM 10***	***NE 0 - 1/8 (0.120 mi.)***	***CT1153***	***979***
LA CITY, TRANS DEPT	***200 N SPRING ST.***	***NE 0 - 1/8 (0.120 mi.)***	***CT1154***	***981***
CITY HALL	200 NORTH SPRING STREET	NE 0 - 1/8 (0.120 mi.)	CT1157	984
THE GAS COMPANY TOWER	555 W 5TH STREET STE700	NE 0 - 1/8 (0.120 mi.)	DJ1165	997
SOUTHERN CALIFORNIA GAS CO	***555 W. 5TH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1167***	***999***
MICROPRINT	***605 SOUTH GRAND AVE***	***NNE 0 - 1/8 (0.124 mi.)***	***DF1185***	***1012***
METROPOLITAN STUCTURE WEST	***300 S GRAND***	***NE 0 - 1/8 (0.125 mi.)***	***DM1192***	***1018***

Lower Elevation	Address	Direction / Distance	Map ID	Page
US FEDERAL RESERVE BANK	***409 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AU314***	***253***
SHELL SERVICE STATION	***504 W OLYMPIC***	***0 - 1/8 (0.000 mi.)***	***AK340***	***268***

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
A AND B AUTO BODY WORKS	***1101 S BROADWAY***	***0 - 1/8 (0.000 mi.)***	***AY397***	***312***
BIG TICKET PROD ASIAN MKT PL	***1100 S FLOWER***	***WSW 0 - 1/8 (0.005 mi.)***	***AV563***	***462***
DOWNTOWN ONE HOUR PHOTO	***951 S FIGUEROA***	***WNW 0 - 1/8 (0.007 mi.)***	***W583***	***480***
ADAMS PRESS	***830 S BROADWAY ST***	***E 0 - 1/8 (0.010 mi.)***	***AM660***	***547***
CHEVRON STATION 9 0518	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX704***	***591***
BONE DEEP - HERRALD EXAMINER	1111 S BROADWAY	S 0 - 1/8 (0.016 mi.)	BI707	593
DEMOCRATIC NATIONAL CONVENTION	***1111 SOUTH FIGUEROA STR***	***W 0 - 1/8 (0.018 mi.)***	***AV715***	***599***
ASSOCIATED PRESS	***1111 S HILL ST***	***SSW 0 - 1/8 (0.026 mi.)***	***BF726***	***606***
PHILIPS 1 HR PHOTO	***123 W 9TH ST***	***SE 0 - 1/8 (0.070 mi.)***	***CJ902***	***749***
CITY OF LOS ANGELES - SFI-1	1149 S. BROADWAY ST.	S 0 - 1/8 (0.078 mi.)	CO949	790
CITY OF LOS ANGELES - SFI-2	1149 S. BROADWAY ST.	S 0 - 1/8 (0.078 mi.)	CO950	790
ANACOMP INC	***1149 S BROADWAY ST***	***S 0 - 1/8 (0.078 mi.)***	***CO951***	***791***
SINA SILK SCREEN SHOP	***833 S SPRING ST UNIT 30***	***ESE 0 - 1/8 (0.087 mi.)***	***DA1047***	***876***
CALIFORIA MART	***110 E 9TH ST***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1128***	***962***
PHILIPS 1 HOUR PHOTO	***110 E 9TH ST SUITE B-26***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1129***	***964***

NPDES: A listing of NPDES permits, including stormwater.

A review of the NPDES list, as provided by EDR, and dated 05/21/2012 has revealed that there are 16 NPDES sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
DEMOLITION OF JUNIPERO SERRA S	107 BROADWAY	0 - 1/8 (0.000 mi.)	A6	15
LOS ANGELES REGION	***320 W 4TH ST STE 200***	***0 - 1/8 (0.000 mi.)***	***H27***	***33***
830 S FLOWER	***830 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***N188***	***164***
9TH ST MIXED USE PROJECT	900 S FIGUEROA 700 9TH	0 - 1/8 (0.000 mi.)	T260	224
LA LAW LIBRARY	301 WEST FIRST ST	NE 0 - 1/8 (0.002 mi.)	A466	379
THE BROAD	221 SOUTH GRAND AVENUE	NE 0 - 1/8 (0.030 mi.)	BG729	610
GRAND PROMENADE	***225 SOUTH GRAND AVENUE***	***NE 0 - 1/8 (0.034 mi.)***	***BG736***	***614***
PARKING STRUCTURE 220 S. SPRIN	***220 SOUTH SPRING STREET***	***NE 0 - 1/8 (0.080 mi.)***	***CE990***	***832***
CIVIC PARK	***200 N GRAND AVE***	***NE 0 - 1/8 (0.107 mi.)***	***DE1118***	***951***
ONE CALIFORNIA PLAZA	***300 SOUTH GRAND AVENUE***	***NE 0 - 1/8 (0.125 mi.)***	***DM1196***	***1023***

Lower Elevation	Address	Direction / Distance	Map ID	Page
717 OLYMPIC	***717 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AI258***	***222***
11TH & GRAND GLASS TOWER	1050 S GRAND AVE	0 - 1/8 (0.000 mi.)	AT286	242
YWCA GREATER LOS ANGELES	1020 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ312	252
COMMUNITY REDEVELOPMENT AGENCY	***1050 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***AS382***	***300***
1026 SOUTH BROADWAY PL	1026 S BROADWAY PL	SSE 0 - 1/8 (0.006 mi.)	AY573	475
1150 S GRAND AVE	1150 S GRAND AVE	SW 0 - 1/8 (0.063 mi.)	BW870	721

WDS: California Water Resources Control Board - Waste Discharge System.

A review of the WDS list, as provided by EDR, and dated 06/19/2007 has revealed that there are 10 WDS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WALT DISNEY HALL PARKING	111 S GRAND AVE	0 - 1/8 (0.000 mi.)	D11	21
SOUTHERN CA GAS CO	320 W 4TH STREET SUITE	0 - 1/8 (0.000 mi.)	H26	32
LOS ANGELES REGION	***320 W 4TH ST STE 200***	***0 - 1/8 (0.000 mi.)***	***H27***	***33***
GRAND PROMENADE	***255 S GRAND AVE***	***NE 0 - 1/8 (0.066 mi.)***	***CF895***	***743***

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PARKING STRUCTURE 220 S.SPRING	220 S SPRING ST	NE 0 - 1/8 (0.080 mi.)	CE989	831
SANWA BANK PLAZA	601 S FIGUEROA ST	N 0 - 1/8 (0.095 mi.)	CZ1073	911
SOUTHERN CALIFORNIA GAS COMPAN	***555 WEST 5TH STREET***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1161***	***990***
THE GAS COMPANY TOWER	***555 W 5TH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1163***	***994***
SOUTHERN CALIFORNIA GAS CO	555 WEST 5TH STREET GT1	NE 0 - 1/8 (0.120 mi.)	DJ1171	1004
ONE CALIFORNIA PLAZA	***300 S GRAND AVE***	***NE 0 - 1/8 (0.125 mi.)***	***DM1193***	***1020***

UIC: A listing of underground control injection wells.

A review of the UIC list, as provided by EDR, and dated 12/09/2011 has revealed that there is 1 UIC site within approximately 0.125 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CHEVRON U.S.A. INC.		W 0 - 1/8 (0.062 mi.)	CC869	721

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 04/02/2012 has revealed that there is 1 Cortese site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HAIWEE RESERVOIR COMPLEX	***111 N HOPE ST RM A18***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1070***	***905***

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 9 HIST CORTESE sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
TIMES MIRROR	***240 HILL ST S***	***0 - 1/8 (0.001 mi.)***	***E446***	***362***
MOBIL OIL, CORPORATION	617 7TH	NNE 0 - 1/8 (0.002 mi.)	U467	380
TIMES MIRROR CORPORATION	***145 SPRING ST S***	***NE 0 - 1/8 (0.076 mi.)***	***BP928***	***770***
THE MUTUAL GARAGE BUILDING	***363 OLIVE ST S***	***NE 0 - 1/8 (0.078 mi.)***	***CQ961***	***801***
PACIFIC MUTUAL BUILDING	***523 006TH ST W***	***NE 0 - 1/8 (0.099 mi.)***	***DB1102***	***936***
76 PRODUCTS STATION #1099	200 HILL	NE 0 - 1/8 (0.104 mi.)	DD1113	946
LA CO HALL OF ADMINIST.	***500 TEMPLE ST W***	***NE 0 - 1/8 (0.105 mi.)***	***DD1115***	***948***

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNOCAL #3300	***730 OLYMPIC BLVD W***	***0 - 1/8 (0.000 mi.)***	***AI346***	***274***
801 TOWER BUILDING	***845 FIGUEROA AVE S***	***NW 0 - 1/8 (0.044 mi.)***	***T788***	***657***

EXECUTIVE SUMMARY

The Los Angeles County Site Mitigation Log comes from Community Health Services.

A review of the LA Co. Site Mitigation list, as provided by EDR, and dated 12/29/2011 has revealed that there are 3 LA Co. Site Mitigation sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LOS ANGELES UNITED INVEST CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M113***	***96***
WEST SIX & BROADWAY	314 W 6TH	0 - 1/8 (0.000 mi.)	S130	114
L & R INVESTMENTS	600 S SPRING ST	ENE 0 - 1/8 (0.085 mi.)	CB1030	863

DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the DRYCLEANERS list, as provided by EDR, and dated 01/19/2012 has revealed that there is 1 DRYCLEANERS site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BILTMORE CLEANERS	***342 W 9TH ST***	***0 - 1/8 (0.000 mi.)***	***AL373***	***291***

Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, and dated 03/29/2012 has revealed that there are 11 LOS ANGELES CO. HMS sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WALT DISNEY CONCERT HALL	111 S GRAND AVE	0 - 1/8 (0.000 mi.)	D21	28
LA CO ISD L A COURT HOUSE	111 N HILL ST	NE 0 - 1/8 (0.006 mi.)	C575	476
B O A ARCJOTECTURE	279 W 7TH ST	ENE 0 - 1/8 (0.016 mi.)	BD712	597
PATINA GROUP	135 N GRAND AVE	NE 0 - 1/8 (0.036 mi.)	D743	623
AHMANSON THEATRE	135 N GRAND AVE	NE 0 - 1/8 (0.036 mi.)	D744	623
COUNTY OF LOS ANGELES ISD	***135 N GRAND***	***NE 0 - 1/8 (0.051 mi.)***	***BS805***	***672***
PARKING COMPANY OF AMERICA MAN	***140 N GRAND AVE***	***NE 0 - 1/8 (0.058 mi.)***	***BS824***	***684***
CITY OF L A HOT LINE REFERRAL	215 W 6TH ST	ENE 0 - 1/8 (0.062 mi.)	CB866	718
CALTRANS-DISTRICT 7 REFERRALS	120 S SPRING ST	NE 0 - 1/8 (0.075 mi.)	BP925	768
1X COUNTY OF LA	***145 N BROADWAY***	***NE 0 - 1/8 (0.080 mi.)***	***BQ994***	***839***
CIVIC PARK	***200 N GRAND AVE***	***NE 0 - 1/8 (0.107 mi.)***	***DE1118***	***951***

ENF: A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

A review of the ENF list, as provided by EDR, and dated 08/15/2011 has revealed that there are 5 ENF sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GRAND PROMENADE	***225 SOUTH GRAND AVENUE***	***NE 0 - 1/8 (0.034 mi.)***	***BG736***	***614***
PARKING STRUCTURE 220 S. SPRIN	***220 SOUTH SPRING STREET***	***NE 0 - 1/8 (0.080 mi.)***	***CE990***	***832***
STONE HOLLYWOOD TRUNK LINE - 3	111 NORTH HOPE STREET,	NNE 0 - 1/8 (0.093 mi.)	CS1058	890
HAIWEE RESERVOIR COMPLEX	***111 N HOPE ST RM A18***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1070***	***905***
ONE CALIFORNIA PLAZA	***300 SOUTH GRAND AVENUE***	***NE 0 - 1/8 (0.125 mi.)***	***DM1196***	***1023***

EXECUTIVE SUMMARY

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2010 has revealed that there are 484 HAZNET sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CAILFORINA DEPARTMENT OF GENER	***107 S BROADWAY***	***0 - 1/8 (0.000 mi.)***	***A1***	***8***
STATE OF CALIFORNIA DEPT OF GE	107 S BROADWAY AVE #100	0 - 1/8 (0.000 mi.)	A5	14
CALIF STATE GARAGE	***122 SO HILL ST***	***0 - 1/8 (0.000 mi.)***	***C8***	***16***
BANK OF AMERICA	100 S BROADWAY	0 - 1/8 (0.000 mi.)	A16	25
ART MONJARAS	222 SOUTH HILL STREET	0 - 1/8 (0.000 mi.)	E20	27
BASSANO JEWELRY LLC	448 S HILL ST STE 905	0 - 1/8 (0.000 mi.)	F23	29
700 SOUTH FLOWER LLC	700 S FLOWER ST STE 110	0 - 1/8 (0.000 mi.)	G24	29
HOPE & FLOWER LLC	700 SOUTH FLOWER	0 - 1/8 (0.000 mi.)	G25	31
TAG-IT PACIFIC	320 SOUTH HILL ST	0 - 1/8 (0.000 mi.)	I28	34
ANN TAYLOR S0404/7TH & FIGUERO	735 S FIGUEROA SPACE 31	0 - 1/8 (0.000 mi.)	J29	34
BROADWAY STATE OFFICE BLDG	***320 W FOURTH ST***	***0 - 1/8 (0.000 mi.)***	***H30***	***35***
700 SOUTH FLOWER PLAZA	700 S FLOWER ST	0 - 1/8 (0.000 mi.)	G34	39
PERSHING PROPERTIES LIMITED, D	***448 SOUTH HILL ST***	***0 - 1/8 (0.000 mi.)***	***F35***	***40***
SIEROTY COMPANY	323 W 5TH ST	0 - 1/8 (0.000 mi.)	K36	40
JUDY SOBEL	317-319 WEST 5TH ST	0 - 1/8 (0.000 mi.)	K38	42
ARMS JEWELRY	448 SOUTH HILL STRET	0 - 1/8 (0.000 mi.)	F39	42
MCI CENTER	700 S FLOWER ST	0 - 1/8 (0.000 mi.)	G40	43
MULTI CAMERA PHOTO LAB INC	735 SOUTH FIGUEROA ST S	0 - 1/8 (0.000 mi.)	J41	44
GRAND CENTRAL SQ. LTD.	306 W. 3RD STREET	0 - 1/8 (0.000 mi.)	L43	46
MIDAL JEWELERS	448 HILL ST, #1301	0 - 1/8 (0.000 mi.)	F44	48
NEWBERRY 1 HOUR PHOTO	445 SOUTH BRAODWAY BLVD	0 - 1/8 (0.000 mi.)	H46	50
449 SOUTH BROADWAY LLC	315 W 5TH ST	0 - 1/8 (0.000 mi.)	K48	52
METROLINK	700 S FLOWER ST 26 FLOO	0 - 1/8 (0.000 mi.)	G51	54
SPRINT COMMUNICATIONS	312 WEST 5TH STREET	0 - 1/8 (0.000 mi.)	K54	57
LADT LLC	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K55***	***57***
LOS ANGELES T.O.C. "LAA"	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K56***	***59***
STATE OF CALIFORNIA DEPT OF GE	320 W 4TH ST	0 - 1/8 (0.000 mi.)	H59	62
CYANIDE	448 S HILL ST	0 - 1/8 (0.000 mi.)	F60	63
KENNEDY WILSON	818 S. 7TH STE 980	0 - 1/8 (0.000 mi.)	G62	63
PRISM PHOTO LAB	750 WEST 7TH ST, GARDEN	0 - 1/8 (0.000 mi.)	G65	64
AVE JEWELRY INC	448 SOUTH HILL ST #917	0 - 1/8 (0.000 mi.)	F66	66
FIFTH & HILL CENTER	448 S HILL ST	0 - 1/8 (0.000 mi.)	F67	67
ESTHETIC DENTISTRY DENTAL GROU	735 S FIGUEROA ST STE 2	0 - 1/8 (0.000 mi.)	J70	69
777 TOWER	***777 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J71***	***70***
KIRKLAND & ELLIS LLP	777 S FIGUEROA ST STE 3	0 - 1/8 (0.000 mi.)	J72	71
ROSEVELT LOFT LLC	727 W FLOWER ST	0 - 1/8 (0.000 mi.)	G74	72
GEO TECHNOLOGYS INC	250 S HILL ST	0 - 1/8 (0.000 mi.)	E75	72
LOS ANGELES STATE BUILDING AUT	320 WEST 4TH ST	0 - 1/8 (0.000 mi.)	H77	73
PERSHING SQUARE BUILDINGS	448 S HILL ST STE 406	0 - 1/8 (0.000 mi.)	F78	74
BROADWAY PLAZA	***700 S FLOWER ST SUTIE 4***	***0 - 1/8 (0.000 mi.)***	***G79***	***75***
JMF ENTERPRISES IV LLC	***448 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F80***	***78***
FLOWER STREET CORPORATION	741 S FLOWER ST	0 - 1/8 (0.000 mi.)	G84	81
SFRE ASSET INC	757 S FLOWER STREET	0 - 1/8 (0.000 mi.)	Q86	82
MANI BROTHERS LLC	801 S FIGUEROA ST STE 1	0 - 1/8 (0.000 mi.)	R89	83
G & A JEWELRY MFG	640 S HILL ST STE 647	0 - 1/8 (0.000 mi.)	M96	85
GIP 7TH ST LLC	725 GRAND AVE	0 - 1/8 (0.000 mi.)	U98	86
CROWN GEM JEWELERS	650 S HILL ST SUITE #61	0 - 1/8 (0.000 mi.)	M105	90

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
THIRD CHURCH OF CHRIST SCIENTI	730 S HOPE ST	0 - 1/8 (0.000 mi.)	V106	90
DANIEL & SON ASSAYERS, INC	640 S HILL ST STE 558	0 - 1/8 (0.000 mi.)	M107	91
SOLICO INC	712 SOUTH OLIVE STREET,	0 - 1/8 (0.000 mi.)	P109	93
A S K GOLD COMPANY	712 SOUTH OLIVE STREET	0 - 1/8 (0.000 mi.)	P110	93
SARKIS CREATIONS	314 WEST 6TH ST,#602 &	0 - 1/8 (0.000 mi.)	S112	96
LOS ANGELES UNITED INVEST CO	***650 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M113***	***96***
550 SOUTH HILL STREET LLC	***550 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***X114***	***100***
1X CAPITOL S CAPITOL B PARTNER	550 SO HILL ST	0 - 1/8 (0.000 mi.)	X115	100
UNION BANK OF CALIFORNIA	845 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	T117	101
MANUFACTURERS LIFE INSURANCE	***865 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***T119***	***104***
A S K GOLD COMPANY	716 S OLIVE ST	0 - 1/8 (0.000 mi.)	P120	106
TREPTOW DEVELOPMENT CO	***801 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***O122***	***108***
PRIME DESIGNS	706 S HILL ST STE 1050	0 - 1/8 (0.000 mi.)	M125	111
BAGUETTE MASTERS	550 S HILL ST STE 1226	0 - 1/8 (0.000 mi.)	X131	114
A S K GOLD COMPANY	716 SO OLIVE ST	0 - 1/8 (0.000 mi.)	P134	115
714 S HIT ST INC	714 S HILL ST	0 - 1/8 (0.000 mi.)	AB135	116
COUNTACH JEWELRY	606 SOUTH HILL STREET	0 - 1/8 (0.000 mi.)	AC138	119
BULLOCKS	***800 S HOPE ST***	***0 - 1/8 (0.000 mi.)***	***O141***	***121***
LA CREATIONS	718 S HILL ST #M103	0 - 1/8 (0.000 mi.)	AB146	129
ABA LEGACY PARTNERS LLC	718 S HILL ST	0 - 1/8 (0.000 mi.)	AB147	129
S OLIVE PARTNERSHIP	***712 SOUTH OLIVE ST # 20***	***0 - 1/8 (0.000 mi.)***	***P149***	***130***
WESTERN JEWLERY	606 S HILL ST	0 - 1/8 (0.000 mi.)	AC158	136
JM MANUFACTURING	718 SOUTH HILL STE 501	0 - 1/8 (0.000 mi.)	AB159	137
M & M HOLDING, LLC	728 S HILL ST	0 - 1/8 (0.000 mi.)	AB162	140
UNIQUE PREMIUM METALS INC	***640 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M167***	***144***
MINUTEMAN PRESS	821 SOUTH FLOWER ST	0 - 1/8 (0.000 mi.)	N172	149
ARAV INC DBA PROGRESSIVE JEWEL	***712 S OLIVE ST #408***	***0 - 1/8 (0.000 mi.)***	***P173***	***151***
MARTIN BUILDING COMPANY	816 S GRAND AVE	0 - 1/8 (0.000 mi.)	O178	155
816 SOUTH GRAND LLC	816 S GRAND	0 - 1/8 (0.000 mi.)	O181	158
830 S FLOWER	***830 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***N188***	***164***
SHUWA INVESTMENTS CORP/NO AMER	800 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	R189	166
UNIQUE PREMIUM METALS INC	640 SOUTH HILL STREET	0 - 1/8 (0.000 mi.)	M192	168
W SIXTH AND BROADWAY PARTNERSH	***314 W SIXTH ST 626***	***0 - 1/8 (0.000 mi.)***	***S195***	***170***
BULLOCK’S/MACY’S WEST/DIVISION	800 SOUTH HOPE STREET	0 - 1/8 (0.000 mi.)	O197	173
SUNSHINE PLATING	***650 S HILL ST SUITE 818***	***0 - 1/8 (0.000 mi.)***	***M199***	***175***
819 S FLOWER LP	819 S FLOWER	0 - 1/8 (0.000 mi.)	N200	176
OXFORD PROPERTIES	606 SOUTH HILL ST,#1014	0 - 1/8 (0.000 mi.)	AC202	177
SRO HOUSING CORP	845 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	T207	181
CUSHMAN & WAKEFIELD	800 S HOPE ST	0 - 1/8 (0.000 mi.)	O208	181
FOX PLAZA	608 S HILL ST	0 - 1/8 (0.000 mi.)	AC209	182
METALOR TECHNOLOGIES USA	650 S HILL ST SUITE #81	0 - 1/8 (0.000 mi.)	M213	183
GRAND VIEW VILLIA	840 S GRAND AVE	0 - 1/8 (0.000 mi.)	AG214	184
HAYTAYAN INC.	650 S HILL STREET	0 - 1/8 (0.000 mi.)	M215	184
PHAROS JEWELRY	314 W 6TH ST #416	0 - 1/8 (0.000 mi.)	S218	188
MARS	314 W 6TH ST, #402	0 - 1/8 (0.000 mi.)	S219	188
C I M/FLOWER, LLC	800, 810 & 820 S FLOWER	0 - 1/8 (0.000 mi.)	N220	189
KIM’S JEWELRY	314 WEST 6TH ST STE 314	0 - 1/8 (0.000 mi.)	S224	193
L A JEWELRY MART INC	712 S OLIVE ST	0 - 1/8 (0.000 mi.)	P227	195
CIM 810 FLOWER LLC	810 S FLOWER ST	0 - 1/8 (0.000 mi.)	N228	196
ST VINCENT GOLD ASSAYERS	640 S HILL ST STE 662	0 - 1/8 (0.000 mi.)	M236	204
S A SMELTING & ASSAYING LAB	640 S HILL ST STE 755	0 - 1/8 (0.000 mi.)	M239	207
CUSHMAN AND WAKEFIELD	801 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	R241	209
WESTERN JEWELRY MART	606 S HILL ST STE 1109A	0 - 1/8 (0.000 mi.)	AC250	218
MERUELO MADDOUX CA FF LLC	760 S HILL ST	0 - 1/8 (0.000 mi.)	AH252	219
EEXCEL GRAND LTD	400 W 9TH	0 - 1/8 (0.000 mi.)	AL266	227
HOLUALOA COAST OFFICE LLC	315 W 9TH ST	0 - 1/8 (0.000 mi.)	AL269	229

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FEDERAL RESERVE BANK OF SF-LA	950 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO271	231
FEDERAL RESERVE BANK OF SF-LA	950 S GRAND	0 - 1/8 (0.000 mi.)	AO281	237
FEDERAL RESERVE BANK OF S F	***950 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***AO285***	***240***
SHORELAND VISTAS	315 W 9TH ST	0 - 1/8 (0.000 mi.)	AL297	246
BOTACH	403 WEST 8TH ST	0 - 1/8 (0.000 mi.)	AH342	271
BILTMORE CLEANERS	***342 W 9TH ST***	***0 - 1/8 (0.000 mi.)***	***AL373***	***291***
BROADWAY TRADE CTR	830 S HILL ST	0 - 1/8 (0.000 mi.)	AR386	303
EYP REALTY, LLC	725 SO FIGUEROA ST	0 - 1/8 (0.000 mi.)	J395	310
777 TOWER ASSOCATE	777 S FIGUEROA ST_STE 4	0 - 1/8 (0.000 mi.)	J398	313
M & M HOLDING LLC	***629 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC402***	***318***
GOLDEN HORN	629 S HILL ST STE 400	0 - 1/8 (0.000 mi.)	AC405	323
STARLITE JEWELRY MFG CO	607 S HILL ST, STE 846	0 - 1/8 (0.000 mi.)	AC410	327
GOLD PANTHER	607 SOUTH HILL STREET S	0 - 1/8 (0.000 mi.)	AC411	328
VARTKES JEWELRY CO INC	***607 SO HILL ST RM 731***	***0 - 1/8 (0.000 mi.)***	***AC413***	***329***
1X CALF JEWELRY MART REALTY CO	***607 SO HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC415***	***333***
ELDITZ JEWELERS CORPORATION	607 SOUTH HILL ST STE 4	0 - 1/8 (0.000 mi.)	AC416	334
G&G JEWELRY	607 S HILL ST SUITE 215	0 - 1/8 (0.000 mi.)	AC417	335
CALIFORNIA JEWELRY MART	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC418***	***335***
JEWELS BY NICOLAS	607 S HILL STREET	0 - 1/8 (0.000 mi.)	AC420	340
ARSEN JEWELRY	607 SOUTH HILL STREET	0 - 1/8 (0.000 mi.)	AC421	340
ASTOURIAN JEWELRY MANUFACTURIN	607 SOUTH HILL ST STE 8	0 - 1/8 (0.000 mi.)	AC422	342
KAZU JEWELERS, INC	***607 S HILL ST, STE 928***	***0 - 1/8 (0.000 mi.)***	***AC423***	***342***
TOUCH OF GOLD	607 S HILL ST #531	0 - 1/8 (0.000 mi.)	AC424	344
HOVIG JEWELRY	625 S HILL ST STE B7	0 - 1/8 (0.000 mi.)	AC429	349
635 HILL STREET COMPANY LLC	635 HILL ST	0 - 1/8 (0.000 mi.)	M430	350
V A OUTPATIENT CLINICS	***425 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F432***	***351***
ANDERSON PHOTOGRAPHY & ASSOCIA	417 S HILL ST #445	0 - 1/8 (0.000 mi.)	F435	354
1X SUBWAY TERMINAL BUILDING	417 SO HILL ST #1080	0 - 1/8 (0.000 mi.)	F436	354
FOREST CITY DEVELOPMENT	417 S HILL ST	0 - 1/8 (0.000 mi.)	F437	354
FC SUBWAY TERMINAL BLG LESSOR	417 S HILL ST	0 - 1/8 (0.000 mi.)	F438	355
F C SUBWAY TERMINAL LESSOR, LL	***417 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F439***	***355***
THE ANGELUS PLAZA	255 S HILL ST	0 - 1/8 (0.000 mi.)	E441	357
CITY VIEW LOFT PARTNERS LLC	249 S BROADWAY	0 - 1/8 (0.001 mi.)	BB445	361
GRAND CENTRAL SQUARE LTD.	315 SO. BROADWAY	0 - 1/8 (0.001 mi.)	L447	364
GRAND CENTRAL MARKET	317 S BROADWAY	0 - 1/8 (0.001 mi.)	L448	364
GRAND CENTRAL SQUARE LTD PARTE	317 S BROADWAY	0 - 1/8 (0.001 mi.)	L449	365
701 S HILL LLC	701 S HILL ST	0 - 1/8 (0.001 mi.)	M453	368
DOWNTOWN PROPERTIES LLC	818 W 7TH ST	N 0 - 1/8 (0.001 mi.)	G457	372
DOWNTOWN PROPERTIES LLC	818 W 7TH ST STE 720	N 0 - 1/8 (0.001 mi.)	G459	374
DOWNTOWN PROPERTIES LLC	818 W 7TH ST FL 4TH	N 0 - 1/8 (0.001 mi.)	G460	375
T E G THE ENV GROUP	351 S HILL ST	NE 0 - 1/8 (0.002 mi.)	I462	377
LOS ANGELES COUNTY LAW LIBRARY	301 W 1ST ST	NE 0 - 1/8 (0.002 mi.)	A465	378
THE ANGELUS PLAZA	200 SO. OLIVE	NE 0 - 1/8 (0.002 mi.)	B471	381
MATT CONSTRUCTION	201 S OLIVE ST	NE 0 - 1/8 (0.002 mi.)	B473	383
BROADWAY PLAZA PHOTO	***750 W 7TH ST***	***N 0 - 1/8 (0.002 mi.)***	***G475***	***385***
MAS ASSET MGMT CORP	304 S BROADWAY	NE 0 - 1/8 (0.002 mi.)	L476	388
BRADBURY ASSOCIATES	304 SOUTH BROADWAY_#201	NE 0 - 1/8 (0.002 mi.)	L477	389
BRADBURY ASSOCIATES, LP	304 SOUTH BROADWAY STE	NE 0 - 1/8 (0.002 mi.)	L478	390
VICTOR CLOTHING COMPANY	242 S BROADWAY	NE 0 - 1/8 (0.002 mi.)	BB479	390
CLINTON FIBANCIAL LLC	242 S BROADWAY	NE 0 - 1/8 (0.002 mi.)	BB480	391
NEIGHBORHOOD EFFORT INC	242 S BROADWAY	NE 0 - 1/8 (0.002 mi.)	BB481	391
COLOR AD INC	240 S BROADWAY 5TH FLOO	NE 0 - 1/8 (0.002 mi.)	BB482	392
NEWBERRY 1 HOUR PHOTO	437 S BROADWAY	NE 0 - 1/8 (0.003 mi.)	H485	394
GEORGE & NIA PIYKAR	500 WEST 7TH STREET	NE 0 - 1/8 (0.003 mi.)	P489	395
RITE AID PHARMACY	501 SO BROADWAY	ENE 0 - 1/8 (0.003 mi.)	K490	396
RITE AID STORE #5429	501 SOUTH BROADWAY	ENE 0 - 1/8 (0.003 mi.)	K491	397

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
RITE AID	501 S BROADWAY	ENE 0 - 1/8 (0.003 mi.)	K492	398
GIP 7TH ST LLP	600 W 7TH ST	NNE 0 - 1/8 (0.003 mi.)	U493	398
CARRIER CENTER BUILDING	600 W 7TH ST	NNE 0 - 1/8 (0.003 mi.)	U495	399
XO COMMUNICATIONS	***600 W 7TH ST***	***NNE 0 - 1/8 (0.003 mi.)***	***U496***	***399***
GIP 7TH ST LLC	600 W 7TH ST STE 540	NNE 0 - 1/8 (0.003 mi.)	U497	402
WESTERN WEATERPROOFING CO	600 7TH STREET	NNE 0 - 1/8 (0.003 mi.)	U498	402
CARRIER CENTER LOS ANGELES	***600 W 7TH ST***	***NNE 0 - 1/8 (0.003 mi.)***	***U499***	***402***
CARRIER CENTER LOS ANGELES	600 W 7TH ST	NNE 0 - 1/8 (0.003 mi.)	U501	404
RITE AID 6383	600 W SEVENTH ST	NNE 0 - 1/8 (0.003 mi.)	U503	408
600 WEST 7TH STREET ASSOCIATES	600 WEST 7TH STREET	NNE 0 - 1/8 (0.003 mi.)	U504	409
THE SALTER COMPANY	520 W 7TH ST	NE 0 - 1/8 (0.003 mi.)	P505	409
AMERICAN FLORIST EXCHANGE LTD	410 W 7TH ST	ENE 0 - 1/8 (0.004 mi.)	M512	411
D & Z	404 WEST 7TH ST.	ENE 0 - 1/8 (0.005 mi.)	M513	412
A&S JEWELRY CO	404 W 7TH #1226	ENE 0 - 1/8 (0.005 mi.)	M519	416
CAL-MART PLATING CO	***404 W 7TH ST***	***ENE 0 - 1/8 (0.005 mi.)***	***M522***	***418***
GOLD SPECTRUM CORP	***404 W 7TH ST #1407***	***ENE 0 - 1/8 (0.005 mi.)***	***M525***	***423***
RMS GOLD ASSAYING	404 W 7TH ST STE 1226	ENE 0 - 1/8 (0.005 mi.)	M526	424
JEWELRY DESIGN CENTER	***404 W 7TH ST STE 1020***	***ENE 0 - 1/8 (0.005 mi.)***	***M529***	***428***
KATHY MAASOUMI DDS	727 W 7TH ST STE 924	N 0 - 1/8 (0.005 mi.)	BE531	431
ROOSEVELT BLDG	727 W 7TH ST	N 0 - 1/8 (0.005 mi.)	BE533	432
SUMI OFFICE SERVICES	***727 W SEVENTH ST STE 35***	***N 0 - 1/8 (0.005 mi.)***	***BE534***	***433***
1X ROOSEVELT BLDG	727 WEST 7TH ST	N 0 - 1/8 (0.005 mi.)	BE535	434
THE ROOSEVELT LOFTS INC	727 W 7TH ST	N 0 - 1/8 (0.005 mi.)	BE536	435
MCI WORLD COM INC	727 W. 7TH ST	N 0 - 1/8 (0.005 mi.)	BE537	435
KNOX ATTORNEY SERVICES INC	727 W 7TH ST STE 732	N 0 - 1/8 (0.005 mi.)	BE539	437
ROMAN VASILE F MD	727 W 7TH ST #959	N 0 - 1/8 (0.005 mi.)	BE540	438
424 OWNER LLC	424 S BROADWAY	NE 0 - 1/8 (0.005 mi.)	H543	443
VENATOR GROUP, INC	719 S BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD545	446
RAINBOW PHOTO DBA: WOOLWORTH C	719 S BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD548	449
Not reported	***527 WEST 7TH ST***	***NE 0 - 1/8 (0.005 mi.)***	***P550***	***450***
UNITED BUILDING ASSOCIATES	***707 SO BROADWAY RM 411***	***ENE 0 - 1/8 (0.005 mi.)***	***BD553***	***453***
ALEX JEWELERY	707 SOUTH BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD555	457
HIRO REAL ESTATE	617 WEST 7TH ST	NNE 0 - 1/8 (0.005 mi.)	U559	459
WALGREENS #12460	617 W 7TH ST	NNE 0 - 1/8 (0.005 mi.)	U561	461
RITZ CAMERA CENTERS #128	613 WEST SEVENTH STREET	NNE 0 - 1/8 (0.005 mi.)	U564	464
RITE AID #5429	500 S BROADWAY	ENE 0 - 1/8 (0.005 mi.)	K565	466
CHAS F/F G HATHAWAY	***431 W 7TH ST***	***NE 0 - 1/8 (0.006 mi.)***	***AB568***	***468***
LA ATHLETIC CLUB	***431 W 7TH ST***	***NE 0 - 1/8 (0.006 mi.)***	***AB570***	***469***
THE COLBURM SCHOOL	200 S GRAND AVE	NE 0 - 1/8 (0.006 mi.)	BG574	475
LEE’S GOLD ASSAY COMPANY	411 W 7TH ST STE 613	ENE 0 - 1/8 (0.006 mi.)	M580	479
KEVORRANDSONS	707 S BROADWEY #401	ENE 0 - 1/8 (0.007 mi.)	BD582	480
COUNTY COURT/LACO F.M.D.	***111 N HILL ST***	***NE 0 - 1/8 (0.008 mi.)***	***C587***	***483***
CNTY OF LOS ANGELES/ISD	111 N HILL ST	NE 0 - 1/8 (0.008 mi.)	C588	485
LOS ANGELES COUNTY	111 NORTH HILL ST	NE 0 - 1/8 (0.008 mi.)	C589	485
RAY’S JEWELRY REPAIR	640 S BROADWAY	ENE 0 - 1/8 (0.008 mi.)	592	488
VIKEN’S JEWELRY	610 S BROADWAY #1024	ENE 0 - 1/8 (0.008 mi.)	S593	488
H AND T JEWELERY REMFG	610 S BROADWAY #1007	ENE 0 - 1/8 (0.008 mi.)	S614	505
610 BROADWAY ASSOCIATES	***610 S BROADWAY STE 714***	***ENE 0 - 1/8 (0.008 mi.)***	***S615***	***505***
BERBERIAN JEWELRY MANUFACTURIN	610 S BROADWAY #1107	ENE 0 - 1/8 (0.008 mi.)	S617	509
CA LINKS INC	610 S BROADWAY #1020	ENE 0 - 1/8 (0.008 mi.)	S624	516
R & M FINE INC	610 S BROADWAY AVE STE	ENE 0 - 1/8 (0.008 mi.)	S642	531
LOS ANGELES THEATRE	612 SO. BROADWAY	ENE 0 - 1/8 (0.008 mi.)	S645	532
GOLDEN HORN JEWELRY	610 SOUTH BROADWAY 1010	ENE 0 - 1/8 (0.009 mi.)	S651	538
SANG PARK	610 S BROADWAY	ENE 0 - 1/8 (0.009 mi.)	S655	543
AMERICAN TILE BUILDING	719 S LOS ANGELES ST	ENE 0 - 1/8 (0.009 mi.)	BD656	544
DANIEL SWARTZ	411 W 5TH ST APT 560	NE 0 - 1/8 (0.009 mi.)	K657	545

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LA OPINION	411 W FIFTH STREET 12TH	NE 0 - 1/8 (0.009 mi.)	K659	546
GRIGOR SIRKEDZHYAN	412 WEST 6TH STREET	NE 0 - 1/8 (0.011 mi.)	AC664	552
RAMON MORENO JEWELRY	412 WEST 6TH STREET	NE 0 - 1/8 (0.011 mi.)	AC665	552
E AND A JEWELRY	412 W 6TH ST SUITE 319	NE 0 - 1/8 (0.011 mi.)	AC667	553
GIVANICH JEWELRY MFG INC	412 W 6TH ST SUITE 1021	NE 0 - 1/8 (0.011 mi.)	AC668	554
PARK CENTRAL BUILDING	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC672***	***557***
JMT JEWELRY LTD	412 WEST 6TH STREET	NE 0 - 1/8 (0.011 mi.)	AC675	567
TOYO PEARL CO INC	412 W 6TH ST STE 1418	NE 0 - 1/8 (0.011 mi.)	AC676	567
CAL-MART PLATING COMPANY	412 WEST 6TH ST STE 140	NE 0 - 1/8 (0.011 mi.)	AC680	572
KOJIAN JEWELERS	412 WEST 6TH ST #720E	NE 0 - 1/8 (0.011 mi.)	AC684	575
CHAIN & CHARM	412 W 6TH ST RM 1104	NE 0 - 1/8 (0.011 mi.)	AC685	575
R & G BLACK ONYX FINE JEW	412 W 6TH ST STE 701	NE 0 - 1/8 (0.011 mi.)	AC686	576
HYE-TECH GOLD CO	412 W 6TH ST	NE 0 - 1/8 (0.011 mi.)	AC687	576
JEWEL 2000	412 W 6TH ST STE 1416	NE 0 - 1/8 (0.011 mi.)	AC691	580
UNITED LA JEWELERS	412 W 6TH ST #608	NE 0 - 1/8 (0.011 mi.)	AC695	584
BARKER PACIFIC GROUP	811 W 7TH ST STE 201	N 0 - 1/8 (0.018 mi.)	G720	604
MACY'S CITICORP-209	920 W 7TH ST	NNW 0 - 1/8 (0.033 mi.)	J735	612
HOMES SAVINGS TOWER	660 SOUTH FIGUEROA #195	N 0 - 1/8 (0.034 mi.)	BJ738	621
1X HOMES SAVINGS TOWER	660 S. FIGUEROA ST.,	N 0 - 1/8 (0.034 mi.)	BJ739	621
HERRERAS JEWELRY	***220 W 5TH 713***	***ENE 0 - 1/8 (0.040 mi.)***	***BK748***	***624***
RAMON MORENO JEWELRY	220 W 5TH STREET, STE 5	ENE 0 - 1/8 (0.040 mi.)	BK750	628
M K JEWELRY	220 WEST 5TH STREET	ENE 0 - 1/8 (0.040 mi.)	BK751	628
UNIVERSAL JEWELRY	220 WEST 5TH STREET #41	ENE 0 - 1/8 (0.040 mi.)	BK753	631
PREMIER CASTING & FINISHING IN	220 W 5TH ST STE 805	ENE 0 - 1/8 (0.040 mi.)	BK756	633
EL DIAMANTE JEWELRY	220 WEST 5TH STREET	ENE 0 - 1/8 (0.040 mi.)	BK758	635
SIERRA INTL INVESTMENT PROPERT	***220 W 5TH ST STE 407***	***ENE 0 - 1/8 (0.040 mi.)***	***BK759***	***635***
FIFTH STREET FUNDING INC	220 WEST 5TH STREET	ENE 0 - 1/8 (0.040 mi.)	BK760	637
MIDEB MANAGEMENT	220 WEST 5TH STREET	ENE 0 - 1/8 (0.040 mi.)	BK768	644
LOS ANGELES DENTAL CENTER	215 W 5TH ST STE 210	ENE 0 - 1/8 (0.042 mi.)	BK781	651
CHESTER WILLIAMS BLDG	215 W 5TH ST	ENE 0 - 1/8 (0.042 mi.)	BK782	652
ALLISON KAUFMAN CO	215 W 5TH ST 11TH FLOOR	ENE 0 - 1/8 (0.042 mi.)	BK783	652
CHESTER WILLIAMS BUILDING	215 W 5TH ST	ENE 0 - 1/8 (0.042 mi.)	BK784	654
TWIN SPRINGS, LLC	***433 S SPRING ST***	***ENE 0 - 1/8 (0.044 mi.)***	***BL795***	***663***
BARRY SHY & ASSOCIATES	215 W 7TH ST	ENE 0 - 1/8 (0.048 mi.)	BD799	667
TOYO REAL ESTATE	626 WILSHIRE BLVD	NNE 0 - 1/8 (0.049 mi.)	BR801	667
PARKER PACIFIC GRP	626 WILSHIRE BLVD STE 5	NNE 0 - 1/8 (0.049 mi.)	BR802	668
MUSIC CENTER OPERATING CO	***135 N GRAND AVE***	***NE 0 - 1/8 (0.051 mi.)***	***BS803***	***668***
MUSIC CTR PERFORMING ARTS CTR	135 NORTH GRAND AVENUE	NE 0 - 1/8 (0.051 mi.)	BS804	670
COUNTY OF LOS ANGELES ISD	***135 N GRAND***	***NE 0 - 1/8 (0.051 mi.)***	***BS805***	***672***
MUSIC CENTER OPERATING COMPANY	135 N GRAND AVE	NE 0 - 1/8 (0.051 mi.)	BS806	674
MUSEUM TOWERS	225 S OLIVE ST	NE 0 - 1/8 (0.054 mi.)	BU812	677
GRAND TOWERS	225 S OLIVE	NE 0 - 1/8 (0.054 mi.)	BU813	678
1X HINOMARU INTERNATIONAL CORP	835 WILSHIRE	N 0 - 1/8 (0.057 mi.)	BJ819	680
LA WILSHIRE CORP	811 WILSHIRE	N 0 - 1/8 (0.057 mi.)	BJ820	681
MALL PHASE I	***140 N GRAND AVE***	***NE 0 - 1/8 (0.058 mi.)***	***BS821***	***681***
JOHNSON CONTROLS/HALL OF ADMIN	140 N GRAND AVE	NE 0 - 1/8 (0.058 mi.)	BS823	683
PARKING COMPANY OF AMERICA MAN	***140 N GRAND AVE***	***NE 0 - 1/8 (0.058 mi.)***	***BS824***	***684***
MPR FLEET SERVICES INC	140 NORTH GRAND AVENUE	NE 0 - 1/8 (0.058 mi.)	BS825	685
THE ANGELUS PLAZA	220 S OLIVE ST	NE 0 - 1/8 (0.059 mi.)	BU831	688
MUSEUM OF CONTEMPORARY ARTS	250 SOUTH GRAND AVENUE	NE 0 - 1/8 (0.059 mi.)	BG832	688
DOWN TOWN PROP LLC	611 WILSHIRE_BLVD	NNE 0 - 1/8 (0.059 mi.)	BR833	689
LOS ANGELES TIMES - LOS ANGELE	***202 W. 1ST ST.***	***NE 0 - 1/8 (0.059 mi.)***	***BY834***	***689***
LOS ANGELES TIMES - TIMES MIRR	220 W 1ST ST	NE 0 - 1/8 (0.059 mi.)	BY835	692
COLUMN CAPITAL LLC	501 S SPRING ST	ENE 0 - 1/8 (0.059 mi.)	BK836	694
1X SUMITOMO LIFE REALTY (N Y)	800 WILSHIRE BLVD	N 0 - 1/8 (0.060 mi.)	BZ837	695
S W C 800 WILSHIRE LLC	800 WILSHIRE BLVD STE 1	N 0 - 1/8 (0.060 mi.)	BZ838	696

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
1X INTER GEN ASSOC. LTD PARTNE	615 S. FLOWER STREET	N 0 - 1/8 (0.060 mi.)	BZ840	698
LOS ANGELES COMMUNITY COLLEGE	770 WILSHIRE BLVD	N 0 - 1/8 (0.060 mi.)	BZ842	699
300 PROSPECT PROPERTIES, INC	770 WILSHIRE BLVD	N 0 - 1/8 (0.060 mi.)	BZ843	700
811 WILSHIRE LLC	***811 WILSHIRE BLVD***	***N 0 - 1/8 (0.061 mi.)***	***BJ853***	***708***
DOWNTOWN PORPERTIES III LLC	700 WILSHIRE BL	NNE 0 - 1/8 (0.061 mi.)	BR858	714
NEVER BEEN KISSED	612 WILSHIRE BLVD	NNE 0 - 1/8 (0.062 mi.)	BR860	714
LEGACY 600 WILSHIRE ASSOCIATES	600 WILSHIRE BLVD STE 1	NNE 0 - 1/8 (0.062 mi.)	BR861	716
600 WILSHIRE PROPERTY LLC	600 WILSHIRE BLVD STE 9	NNE 0 - 1/8 (0.062 mi.)	BR863	717
AEW CAPITOL MANAGMENT LLP	600 WILSHIRE BLVD	NNE 0 - 1/8 (0.062 mi.)	BR864	717
WILSHIRE GRAND BLDG	600 WILSHIRE BLVD STE 8	NNE 0 - 1/8 (0.062 mi.)	BR865	718
COUNTY OF LOS ANGELES/ISD	***145 N GRAND AVE***	***NE 0 - 1/8 (0.062 mi.)***	***BS867***	***719***
AON CENTER	***707 WILSHIRE BLVD***	***NNE 0 - 1/8 (0.063 mi.)***	***CD874***	***723***
E-COPY	707 WILSHIRE BLVD STE 1	NNE 0 - 1/8 (0.063 mi.)	CD878	731
FIRST INTERSTATE BANK	707 WILSHIRE BLVD	NNE 0 - 1/8 (0.063 mi.)	CD880	733
DOWNTOWN PROPERTIES LLC	611 WILSHIRE BLVD	NNE 0 - 1/8 (0.064 mi.)	BR882	736
COLISEE DESIGNS	611 WILSHIRE BLVD STE 3	NNE 0 - 1/8 (0.064 mi.)	BR883	737
611 WILSHIRE PROPERTY	611 WILSHIRE BLVD STE 1	NNE 0 - 1/8 (0.064 mi.)	BR884	738
GRAND TOWERS	255 S GRAND AVE	NE 0 - 1/8 (0.066 mi.)	CF894	742
GRAND PROMENADE	***255 S GRAND AVE***	***NE 0 - 1/8 (0.066 mi.)***	***CF895***	***743***
LEHNE & SON PAINTING CONTRACTO	210 W 7TH ST	E 0 - 1/8 (0.067 mi.)	CG896	744
VAN NUYS APARTMENTS	***210 W 7TH ST***	***E 0 - 1/8 (0.067 mi.)***	***CG897***	***745***
SOUTH SPRINGS STREET CO	311 S SPRINGS ST	ENE 0 - 1/8 (0.070 mi.)	CK903	751
1X TOM BELL	206 W SIXTH ST	ENE 0 - 1/8 (0.072 mi.)	CB906	753
HAYWARD MANOR APTS	206 W 6TH ST	ENE 0 - 1/8 (0.072 mi.)	CB907	753
RALPH DE FAY	***946 W 8TH ST***	***NNW 0 - 1/8 (0.072 mi.)***	***BT909***	***754***
THE ANGELUS PLAZA	245 S OLIVE	NE 0 - 1/8 (0.073 mi.)	BU910	755
1X DEMETRIOU DEL GUERCIO & LOV	***215 W 6TH ST***	***ENE 0 - 1/8 (0.073 mi.)***	***CB914***	***760***
AMPAC CAPITAL INC	643 S OLIVE STREET 10TH	NE 0 - 1/8 (0.074 mi.)	CI917	764
JEWELRY BY MICHAEL	643 S OLIVE ST STE 800	NE 0 - 1/8 (0.075 mi.)	CI919	765
606 OLIVE LLC	606 S OLIVE ST	NE 0 - 1/8 (0.076 mi.)	CI929	772
TISMAN SPEYER PROPERTIES	606 SOUTH OLIVE STREET	NE 0 - 1/8 (0.076 mi.)	CI931	773
CITY OF LOS ANGELES/PERSHING S	525 SOUTH OLIVE STREET	NE 0 - 1/8 (0.077 mi.)	CN937	778
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
AT&T CORP	433 S OLIVE ST	NE 0 - 1/8 (0.078 mi.)	CR956	795
257 S SPRING ST LLC	257 S SPRING ST	NE 0 - 1/8 (0.078 mi.)	957	796
THE ANGELUS PLAZA	300 SO. OLIVE	NE 0 - 1/8 (0.078 mi.)	CP958	796
SPECIALIZED ENVIORNMENTAL INC	410 SO SPRING STREET	ENE 0 - 1/8 (0.078 mi.)	BL959	796
07 DIST OFFICE	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP963***	***803***
CALTRANS DISTRICT 7	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP965***	***806***
CALTRANS -EQUIPMENT SHOP	120 S SPRING ST	NE 0 - 1/8 (0.078 mi.)	BP968	811
CALTRANS DISTRICT 7 - SHOP	***120 SOUTH SPRING STREET***	***NE 0 - 1/8 (0.078 mi.)***	***BP969***	***812***
OVIATT INVESTMENT GROUP LLC	617 S OLIVE ST	NE 0 - 1/8 (0.078 mi.)	CI972	814
NBBJ WEST LIMITED PARTNERSHIP	631 SOUTH OLIVE # 900	NE 0 - 1/8 (0.078 mi.)	CI974	815
CHROMA COPY INTERNATIONAL	631 S OLIVE ST STE 600	NE 0 - 1/8 (0.078 mi.)	CI975	816
OMNI LOS ANGELES HOTEL	251 S OLIVE ST	NE 0 - 1/8 (0.078 mi.)	BU976	817
HOTEL INTER CONTINENTAL	***251 S OLIVE***	***NE 0 - 1/8 (0.078 mi.)***	***BU978***	***820***
311 SOUTH SPRING STREET CO	311 S SPRING ST	ENE 0 - 1/8 (0.078 mi.)	CK979	822
S & H DRY CLEANERS	511 S SPRING	ENE 0 - 1/8 (0.079 mi.)	BK985	825
CAILFORINA DEPARTMENT OF GENER	***300 S SPRING ST***	***ENE 0 - 1/8 (0.079 mi.)***	***CK986***	***827***
DAILY JOURNAL CORP	210 S SPRING ST	NE 0 - 1/8 (0.079 mi.)	CE987	829
COUNTY OF LOS ANGELES - ISD	145 N BROADWAY	NE 0 - 1/8 (0.080 mi.)	BQ993	839
1X COUNTY OF LA	***145 N BROADWAY***	***NE 0 - 1/8 (0.080 mi.)***	***BQ994***	***839***
LOS ANGELES COUNTY-INTERNAL SV	145 N BROADWAY	NE 0 - 1/8 (0.080 mi.)	BQ995	840
PHONE BOOTH	449 S SPRING ST	ENE 0 - 1/8 (0.080 mi.)	CU997	842
LOS ANGELES ELEVATOR INC	453 S SPRING ST STE 506	ENE 0 - 1/8 (0.080 mi.)	CU999	845
LOS ANGELES CENTER STUDIOS INC	201 W 5TH ST	ENE 0 - 1/8 (0.081 mi.)	BK1002	847

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OLD FINANCIAL DISTRICT	408 S SPRING ST	ENE 0 - 1/8 (0.081 mi.)	BL1005	850
DOWNTOWN PROPERTY HOLDINGS LLC	416 S SPRING ST	ENE 0 - 1/8 (0.082 mi.)	BL1008	851
POPULAR CENTER LLC	354 S SPRING	ENE 0 - 1/8 (0.082 mi.)	CV1012	853
MSGG ROWEN REALTY PARTNERS LLC	460 S SPRING ST	ENE 0 - 1/8 (0.082 mi.)	CU1014	855
H C G G RONIN REALTY PARTNERS	458 S SPRING ST	ENE 0 - 1/8 (0.082 mi.)	CU1015	856
510 S SPRING ST ASOCC	510 SO SPRING ST	ENE 0 - 1/8 (0.083 mi.)	BK1018	857
DROMY INTERNATIONAL INVESTMENT	626 S SPRING ST	ENE 0 - 1/8 (0.084 mi.)	CX1021	858
ROBERT MASSEY	618 S SPRING ST	ENE 0 - 1/8 (0.084 mi.)	CX1023	859
1X MALDEF PROP MGMNT	634 SO SPRING ST	ENE 0 - 1/8 (0.084 mi.)	CX1026	861
MALDEF PROP MGMNT	634 SO SPRING ST	ENE 0 - 1/8 (0.084 mi.)	CX1027	861
CITY ENGINEERING	***600 S SPRING ST***	***ENE 0 - 1/8 (0.085 mi.)***	***CB1029***	***862***
TEACHERS INSURANCE & ANNUITY	***911 WILSHIRE BLVD***	***N 0 - 1/8 (0.085 mi.)***	***CZ1032***	***864***
TEACHERS INSURANCE & ANNUITANT	911 WILSHIRE BLVD STE 1	N 0 - 1/8 (0.085 mi.)	CZ1033	865
612 PARTNERS LLC	***612 S FLOWER ST***	***N 0 - 1/8 (0.086 mi.)***	***BZ1035***	***866***
DOWNTOWN PROPERTIES II LLC	612 S FLOWER ST	N 0 - 1/8 (0.086 mi.)	BZ1037	869
TOUCH TONE TELEVISION PRODUCTI	650 S SPRING ST	ENE 0 - 1/8 (0.086 mi.)	CX1042	873
GAMA JEWELRY	510 W 6TH ST STE 1118	NE 0 - 1/8 (0.087 mi.)	DB1046	876
WILSHIRE GRAND HOTEL & CENTRE	***930 WILSHIRE BLVD***	***N 0 - 1/8 (0.089 mi.)***	***CZ1052***	***880***
HANJIN INTL CORP	930 WILSHIRE BLVD	N 0 - 1/8 (0.089 mi.)	CZ1054	885
LA DEPARTMENT WATER & POWER	111 N HOPE ST #638	NNE 0 - 1/8 (0.093 mi.)	CS1065	898
L A DWP/GENERAL OFFICE BUILDIN	111 N HOPE ST	NNE 0 - 1/8 (0.093 mi.)	CS1068	903
FIGUEROA AT WILSHIRE LLC	601 S FIGUEROA ST	N 0 - 1/8 (0.095 mi.)	CZ1072	910
MITSUI AND CO	601 SOUTH FIGUEROA ST,	N 0 - 1/8 (0.095 mi.)	CZ1074	912
HINES	601 S FIGUEROA	N 0 - 1/8 (0.095 mi.)	CZ1076	915
SAN WA BANK	601 S FIGUEROA	N 0 - 1/8 (0.095 mi.)	CZ1078	916
JIM KRACHMER	***601 S FIGUEROA ST***	***N 0 - 1/8 (0.095 mi.)***	***CZ1079***	***916***
TRIZEC 601 FIGUEROA LLC	601 S FIGUEROA ST	N 0 - 1/8 (0.095 mi.)	CZ1080	918
PACIFIC CENTER	523 W 6TH ST STE 220	NE 0 - 1/8 (0.096 mi.)	DB1085	922
523 PACIFIC CENTER ASSOCIATES	523 W 6TH ST STE 330	NE 0 - 1/8 (0.096 mi.)	DB1088	923
LA PACIFIC CENTER	***523 W SIXTH ST STE 218***	***NE 0 - 1/8 (0.096 mi.)***	***DB1092***	***926***
523 W 6TH ST ASSOCIATES,LTD	***523 W 6TH STREET SUITE***	***NE 0 - 1/8 (0.096 mi.)***	***DB1093***	***928***
5TH STREET LOFT LLC	548 S SPRING ST	ENE 0 - 1/8 (0.097 mi.)	CB1094	931
FOX PHOTO INC	525 W 6TH ST	NE 0 - 1/8 (0.098 mi.)	DB1098	933
WOLF CAMERA #05020	525 WEST 6TH ST	NE 0 - 1/8 (0.098 mi.)	DB1099	935
TOBANC ASSOCIATES LTD	530 W 6TH STREET	NE 0 - 1/8 (0.102 mi.)	DB1107	941
RO-MEL MFG INC	530 W 6TH ST SUITE 1100	NE 0 - 1/8 (0.102 mi.)	DB1108	943
COUNTY LOS ANGELES ISD	222 N HILLS ST	NE 0 - 1/8 (0.107 mi.)	DD1117	950
CIVIC PARK	***200 N GRAND AVE***	***NE 0 - 1/8 (0.107 mi.)***	***DE1118***	***951***
PACIFIC FINANCIAL CENTER	800 W 6TH ST	N 0 - 1/8 (0.116 mi.)	DG1138	969
DR HUBBS	609 S GRAND AVE, #609	NNE 0 - 1/8 (0.119 mi.)	DF1142	972
GRAND PACIFIC LOFTS INC	609 S GRAND AVE	NNE 0 - 1/8 (0.119 mi.)	DF1143	974
ISSAC SHOMOS	609 S GRAND AVE	NNE 0 - 1/8 (0.119 mi.)	DF1144	974
VISTA REALTY	609 S GRAND AVE	NNE 0 - 1/8 (0.119 mi.)	DF1145	974
PLANNING DEPT LA CITY OF	***200 N SPRING ST ROOM 10***	***NE 0 - 1/8 (0.120 mi.)***	***CT1153***	***979***
LOS ANGELES CITY HALL	***200 N SPRING ST***	***NE 0 - 1/8 (0.120 mi.)***	***CT1158***	***984***
SOUTHERN CALIFORNIA GAS COMPAN	***555 WEST 5TH STREET***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1161***	***990***
SOUTHERN CALIFORNIA GAS CO	***555 W FIFTH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1162***	***992***
SOUTHERN CALIFORNIA GAS CO	555 W FIFTH ST (GT)	NE 0 - 1/8 (0.120 mi.)	DJ1164	995
MAGUIRE PROPERTIES-555 WEST FI	555 W 5TH ST	NE 0 - 1/8 (0.120 mi.)	DJ1166	997
SOUTHERN CALIFORNIA GAS CO	***555 W. 5TH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1167***	***999***
MAGUIRE THOMAS PARTNERS-FIFTH	555 W 5TH ST	NE 0 - 1/8 (0.120 mi.)	DJ1170	1003
MUSIC CENTER OPERATING CO	215 N GRAND AVE	NE 0 - 1/8 (0.121 mi.)	DE1174	1007
ROSSLYN HOTEL	112 W 5TH	ENE 0 - 1/8 (0.123 mi.)	DL1181	1011
PARAGON PARKING INC	426 S SPRING	ENE 0 - 1/8 (0.124 mi.)	CU1187	1014
CALIFORNIA PLAZA	300 S GRAND AVE	NE 0 - 1/8 (0.125 mi.)	DM1189	1015
CALIFORNIA PLAZA	300 S GRAND AVE	NE 0 - 1/8 (0.125 mi.)	DM1191	1018

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAGUIRE PROPERTIES	300 S GRAND AVE STE LT-	NE 0 - 1/8 (0.125 mi.)	DM1194	1021

Lower Elevation	Address	Direction / Distance	Map ID	Page
L & R AUTO PARTS	925 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	W108	92
THE HANOVER CO	948 FIGUEROA ST	0 - 1/8 (0.000 mi.)	W148	130
PHOTO KING	951 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	W153	134
SFPP, L.P.	888 S FIGUEROA	0 - 1/8 (0.000 mi.)	T164	141
COMMUNITY RE-DEVELOPMENT AGENC	645 W 9TH ST	0 - 1/8 (0.000 mi.)	Y169	147
WRIGHT/ROBINSON/MCCAMMON/OSTHI	888 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	T210	182
MINUTEMAN PRESS	600 W 9TH ST STE 135	0 - 1/8 (0.000 mi.)	Z230	198
SOUTH PARK ASSOCIATES	888 S FIGUEROA STE 630	0 - 1/8 (0.000 mi.)	T235	204
717 OLYMPIC	***717 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AI258***	***222***
HOPE ENTERPRISES LLC	1000 S HOPE ST	0 - 1/8 (0.000 mi.)	AN268	228
UNION BANK OF CALIFORNIA	1000 SO HOPE ST	0 - 1/8 (0.000 mi.)	AN270	230
LOS ANGELES JOB CORE	221 W 11TH ST	0 - 1/8 (0.000 mi.)	AP275	234
MICHAEL GILARDIAN	409 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AU287	243
TEXACO REFINING AND MARKETING	504 W OLYMPIC	0 - 1/8 (0.000 mi.)	AK295	245
HOPE AND OIL PICK	1000 S HOPE ST	0 - 1/8 (0.000 mi.)	AN299	246
HOLIDAY INN	1020 S FIGUEROA	0 - 1/8 (0.000 mi.)	AX302	247
SHAMMAS GROUP	1037 FLOWER ST	0 - 1/8 (0.000 mi.)	AS303	248
LOS ANGELES JOB CORP	1031 S HILL ST	0 - 1/8 (0.000 mi.)	AW310	250
EQUILON ENTERPRISES LLC	504 W OLYMPIC/GRAND	0 - 1/8 (0.000 mi.)	AK311	251
C I PRINTING	1035 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ330	262
GOODYEAR SERVICE CENTER #9265	***940 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AQ332***	***264***
J E ROBERTS CO	300 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	337	266
CAST REAL ESTATE HOLDINGS	939 S BROADWAY	0 - 1/8 (0.000 mi.)	AZ339	267
SHELL SERVICE STATION	***504 W OLYMPIC***	***0 - 1/8 (0.000 mi.)***	***AK340***	***268***
BICKERGON IRON WORKS	CORNER OF 11TH & FIGUER	0 - 1/8 (0.000 mi.)	AV341	271
ZEMMI WHOLDING INC	323 W 8TH ST	0 - 1/8 (0.000 mi.)	AM350	279
HOLIDAY INN/EMERIK CORP	1020 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	AX351	281
HOLIDAY INN	1020 FIGUEROA ST	0 - 1/8 (0.000 mi.)	AX356	283
FOOTHILL THRIFT & LOAN	1010-1012 SOUTH OLIVE S	0 - 1/8 (0.000 mi.)	AJ357	284
SILVER PROPERTIES TRUST	1051 S GRAND AVE	0 - 1/8 (0.000 mi.)	AT370	290
THE STANDARD OIL CO GROUP	***605 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AN374***	***294***
HOLIDAY INN	1020 SO FIGUEROA	0 - 1/8 (0.000 mi.)	AX378	297
PETROLEUM BUILDING THE	714 W OLYMPIC BOULEVARD	0 - 1/8 (0.000 mi.)	AI380	298
COMMUNITY REDEVELOPMENT AGENCY	***1050 S FLOWER ST***	***0 - 1/8 (0.000 mi.)***	***AS382***	***300***
UNOCAL SERVICE STATION #3300	***730 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AI384***	***301***
SHELL SERVICE STATION	***504 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AK391***	***305***
LAUSD/ FIGUEROA ST ELEM	510 W 11TH ST	WSW 0 - 1/8 (0.002 mi.)	AS472	382
AMERICAN GENERAL	304 WEST 8TH STREET	E 0 - 1/8 (0.003 mi.)	AM487	394
GRAND AVENUE LOFTS LP	1100 S GRAND AVE	SW 0 - 1/8 (0.004 mi.)	AT509	410
ANSCHUTZ ENTERTAINMENT GROUP	1100 S HOPE ST	WSW 0 - 1/8 (0.005 mi.)	BC544	444
FLOWER HOLDINGS LLC	1100 S FLOWER ST	WSW 0 - 1/8 (0.005 mi.)	AV562	462
BIG TICKET PROD ASIAN MKT PL	***1100 S FLOWER***	***WSW 0 - 1/8 (0.005 mi.)***	***AV563***	***462***
THE KOR GROUP	849 S BROADWAY	ESE 0 - 1/8 (0.008 mi.)	BH646	534
KOR GROUP	849 S BROADWAY	ESE 0 - 1/8 (0.008 mi.)	BH648	535
ADAMS PRESS	***830 S BROADWAY ST***	***E 0 - 1/8 (0.010 mi.)***	***AM660***	***547***
BLOCH INC	846 S BROADWAY 11TH FL	ESE 0 - 1/8 (0.010 mi.)	BH661	550
ANJAC FASHION BUILDINGS	850 S BROADWAY	ESE 0 - 1/8 (0.010 mi.)	BH662	551
GRANTS PARKING GARAGE	220 W 9TH ST	SE 0 - 1/8 (0.012 mi.)	BA699	586
LOS ANGELES CAR WASH CORP	811 W OLYMPIC BLVD	WNW 0 - 1/8 (0.013 mi.)	AX701	587
DOWNTOWN CAR WASH (CHEVRON)	***811 W OLYMPIC BLVD***	***WNW 0 - 1/8 (0.013 mi.)***	***AX702***	***587***
HEARST COMMUNICATION INC	1111 S BROADWAY	S 0 - 1/8 (0.016 mi.)	BI709	594
LA HARBOR COLLEGE	1111 FIGUEROA TER	W 0 - 1/8 (0.018 mi.)	AV713	598

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
STAPLES CENTER	***1111 S FIGUEROA ST***	***W 0 - 1/8 (0.018 mi.)***	***AV716***	***600***
CITY OF LOS ANGELES - STAPLES	***1111 S FIGUEROA***	***W 0 - 1/8 (0.018 mi.)***	***AV717***	***602***
ASSOCIATED PRESS	***1111 S HILL ST***	***SSW 0 - 1/8 (0.026 mi.)***	***BF726***	***606***
RUBEN FRANCO	163 W 9TH ST	SE 0 - 1/8 (0.040 mi.)	BA771	645
BANK OF AMERICA	1130 S FIGUEROA	W 0 - 1/8 (0.041 mi.)	BO779	650
CITY OF HOPE DEVELOPMENT CTR	208 W 8TH ST	E 0 - 1/8 (0.043 mi.)	AM785	655
11TH & MAIN PARTNERS LLC	1100-1132 S MAIN ST	S 0 - 1/8 (0.057 mi.)	BV817	679
LAX C INC	1100 S MAIN ST	S 0 - 1/8 (0.057 mi.)	BV818	680
TRANSAMERICA CENTER	1150 S OLIVE ST STE T-1	SSW 0 - 1/8 (0.061 mi.)	BX845	701
SBC TOWER	1150 S OLIVE ST	SSW 0 - 1/8 (0.061 mi.)	BX846	702
MANGING ANGENT	1150 S OLIVE ST	SSW 0 - 1/8 (0.061 mi.)	BX847	703
LBA REALTY	1150 S OLIVE ST	SSW 0 - 1/8 (0.061 mi.)	BX848	704
CANYON JOHNSON URBAN FUND (FUN	1150 S OLIVE ST	SSW 0 - 1/8 (0.061 mi.)	BX849	704
TRANSAMERICA CENTER	1150 SOUTH OLIVE ST	SSW 0 - 1/8 (0.061 mi.)	BX850	704
FRANK TACAUGH	845 W OLYMPIC BLVD	WNW 0 - 1/8 (0.062 mi.)	CC868	720
CLASSIC PARKTEAM INC	1150 S FLOWER ST	WSW 0 - 1/8 (0.063 mi.)	BM871	722
1X HANS ENGINEERING COMPANY	1124 S MAIN STREET	S 0 - 1/8 (0.065 mi.)	BV887	740
TRANSAMERICA CENTER	1155 S OLIVE ST	SSW 0 - 1/8 (0.066 mi.)	BX889	741
11TH & MAIN PARTNERS LLC	106-112 E 11TH ST	S 0 - 1/8 (0.066 mi.)	BV892	742
PHILIPS 1 HR PHOTO	***123 W 9TH ST***	***SE 0 - 1/8 (0.070 mi.)***	***CJ902***	***749***
NOKIA THEATRE LA LIVE	777 CHICK HEARN CT	W 0 - 1/8 (0.073 mi.)	CL915	761
TRANSAMERICA BUILDING	1149 S BROADWAY ST	S 0 - 1/8 (0.077 mi.)	CO936	776
STATE OF CALIF/DEPT OF GENERAL	1149 S BROADWAY	S 0 - 1/8 (0.078 mi.)	CO946	788
CANYON JOHNSON URBAN FUND (FUN	1149 S BROADWAY	S 0 - 1/8 (0.078 mi.)	CO947	788
TRANSAMERICA OCCIDENTAL	1149 S BROADWAY ST	S 0 - 1/8 (0.078 mi.)	CO948	789
ANACOMP INC	***1149 S BROADWAY ST***	***S 0 - 1/8 (0.078 mi.)***	***CO951***	***791***
CALIFORNIA MART PHASE V	917 S MAIN ST	SE 0 - 1/8 (0.084 mi.)	CJ1019	858
CENTURY DENTAL PLAN	722 S SPRING ST	E 0 - 1/8 (0.086 mi.)	CG1038	870
1X AN JACK BUILDING	823 SOUTH SPRING STREET	ESE 0 - 1/8 (0.086 mi.)	DA1039	870
756 SPRING STREET LIMITED	756 S SPRING ST	E 0 - 1/8 (0.086 mi.)	CY1040	871
WINSTON TIRE COMPANY #51	1161-65 S MAIN	S 0 - 1/8 (0.093 mi.)	CW1071	909
READY REPRODUCTIONS INC	750 W TENTH PL	W 0 - 1/8 (0.096 mi.)	CL1084	920
ROBISON-PREZIOSO/STAPLES CENTE	901 W 11TH ST	W 0 - 1/8 (0.098 mi.)	CL1097	932
CITY OF LOS ANGELES	748 W 10TH PLACE	W 0 - 1/8 (0.099 mi.)	CL1103	938
NATIONAL CITY TOWERS LLC	810 S SPRING ST	ESE 0 - 1/8 (0.103 mi.)	DA1111	946
PHILLIPS 1 HOUR PHOTO	***110 E 9TH STREET***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1119***	***952***
APPAREL NEWS GROUP	110 EAST 9TH ST #A-777	SE 0 - 1/8 (0.108 mi.)	CJ1120	954
CHIROPRACTIC CARE CENTER	110 E 9TH ST STE 311	SE 0 - 1/8 (0.108 mi.)	CJ1123	957
FREDERICK ATKINS CALIFORNIA	110 EAST 9TH STREET, #A	SE 0 - 1/8 (0.108 mi.)	CJ1124	958
MNM PUBLISHING CORP	110 EAST 9TH ST	SE 0 - 1/8 (0.108 mi.)	CJ1125	959
CAROUSEL PRINTERS INC	110 E NINTH ST,# B-249	SE 0 - 1/8 (0.108 mi.)	CJ1126	960
JAMESON CALIFORNIA MARKET LLC	110 E 9TH ST STE A727	SE 0 - 1/8 (0.108 mi.)	CJ1127	962
DR J KHORSANDI	110 E 9TH ST STE B225	SE 0 - 1/8 (0.108 mi.)	CJ1130	965
CALIFORNIA MART/CJVS	127 EAST OLYMPIC BLVD.	SSE 0 - 1/8 (0.111 mi.)	1134	967
LOS ANGELES ARENA COMPANY	901 OLYMPIC BLVD	WNW 0 - 1/8 (0.120 mi.)	1173	1006
ROBERT NAM	1048 S LOS ANGELES ST	SSE 0 - 1/8 (0.123 mi.)	DK1179	1010
KNASTER TRUST	1200 SOUTH OLIVE ST	SSW 0 - 1/8 (0.124 mi.)	DI1182	1011
SIDNEY AND LINDA KASTNER TRUST	1200 S OLIVE ST	SSW 0 - 1/8 (0.124 mi.)	DI1183	1012

EXECUTIVE SUMMARY

EMI: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2008 has revealed that there are 147 EMI sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CAL ST, ST BLDG	107 S. BROADWAY	0 - 1/8 (0.000 mi.)	A2	11
STATE OF CALIF., DEPT GENERAL	107 S BROADWAY	0 - 1/8 (0.000 mi.)	A3	11
HOPE & FLOWER B P PARTNERSHIP	700 S FLOWER ST, SUITE	0 - 1/8 (0.000 mi.)	G31	38
PERSHING PROPERTIES LIMITED, D	***448 SOUTH HILL ST***	***0 - 1/8 (0.000 mi.)***	***F35***	***40***
GUY F ATKINSON CONSTRUCTION CO	448 S HILL ST., STE 206	0 - 1/8 (0.000 mi.)	F49	53
LADT LLC	***312 W 5TH ST***	***0 - 1/8 (0.000 mi.)***	***K55***	***57***
777 TOWER	***777 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***J71***	***70***
BROADWAY PLAZA	***700 S FLOWER ST SUTIE 4***	***0 - 1/8 (0.000 mi.)***	***G79***	***75***
KARADOLIAN JEWELRY MFG CO	650 S HILL STREET #418	0 - 1/8 (0.000 mi.)	M92	84
YERMA JEWELRY	650 S HILL STREET, # 91	0 - 1/8 (0.000 mi.)	M94	85
MARS	314 W 6TH STREET #402	0 - 1/8 (0.000 mi.)	S97	86
550 SOUTH HILL STREET LLC	***550 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***X114***	***100***
MANUFACTURERS LIFE INSURANCE	***865 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***T119***	***104***
NORTH AMERICA BLDG MGMT CORP	801 S GRAND AVE, SUITE	0 - 1/8 (0.000 mi.)	O123	109
GOLD CRAFT JEWELERY CO.	314 W 6TH ST #620	0 - 1/8 (0.000 mi.)	S133	115
SHIMA PEARL COMPANY INC	607 S HILL #532	0 - 1/8 (0.000 mi.)	AC139	120
SHUWA INVESTMENTS CORP.	800 S FIGUEROA ST.	0 - 1/8 (0.000 mi.)	R154	135
CROWN GEM JEWELERS	650 SO HILL ST #610	0 - 1/8 (0.000 mi.)	M170	148
ARAV INC DBA PROGRESSIVE JEWEL	***712 S OLIVE ST #408***	***0 - 1/8 (0.000 mi.)***	***P173***	***151***
WEST SIXTH & BROADWAY PARTNERS	***314 W. SIXTH STREET***	***0 - 1/8 (0.000 mi.)***	***S182***	***159***
SO CAL GAS CO	810 S. FLOWER ST.	0 - 1/8 (0.000 mi.)	N205	180
KVV JEWELRY MFG	712 S OLIVE ST #601	0 - 1/8 (0.000 mi.)	P245	215
ARBEL JEWELRY MFG CORP	650 S HILL ST, ROOM #51	0 - 1/8 (0.000 mi.)	M248	217
SARKIS CREATIONS, SARKIS SULTA	314 WEST 6 ST, SUITE 60	0 - 1/8 (0.000 mi.)	S249	217
UNION BANK	760 S HILL ST	0 - 1/8 (0.000 mi.)	AH251	219
DESGINED BY SCORPIO	650 S HILL ST, NO 915	0 - 1/8 (0.000 mi.)	M262	225
FEDERAL RESERVE BANK OF S F	***950 S GRAND AVE***	***0 - 1/8 (0.000 mi.)***	***AO285***	***240***
JEMP'S SNACK, JOUNG SU KIM DBA	833 S. HILL STREET	0 - 1/8 (0.000 mi.)	AR343	272
FIDM REALTY	909 S GRAND AVE.	0 - 1/8 (0.000 mi.)	AO366	288
CUSHMAN & WAKEFIELD, PPLA PLAZ	725 S FIGUEROA ST , STE	0 - 1/8 (0.000 mi.)	J396	311
GOLDEN PYRAMID INC	629 S HILL ST #204	0 - 1/8 (0.000 mi.)	AC400	316
M & M HOLDING LLC	***629 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC402***	***318***
S.A. KITSINIAN INC	629 S HILL ST #200	0 - 1/8 (0.000 mi.)	AC407	324
1X CALF JEWELRY MART REALTY CO	***607 SO HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC415***	***333***
CALIFORNIA JEWELRY MART REALTY	***607 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***AC419***	***338***
SUBWAY TERMINAL BLDG	417 SO. HILL ST.	0 - 1/8 (0.000 mi.)	F434	353
F C SUBWAY TERMINAL LESSOR, LL	***417 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***F439***	***355***
ANGELUS PLAZA	***255 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***E442***	***359***
THE ANGELUS PLAZA	***245 S HILL ST***	***0 - 1/8 (0.001 mi.)***	***E443***	***360***
THE ANGELUS PLAZA	200 S OLIVE ST	NE 0 - 1/8 (0.002 mi.)	B469	380
BROADWAY PLAZA PHOTO	***750 W 7TH ST***	***N 0 - 1/8 (0.002 mi.)***	***G475***	***385***
CHAIN SMITH	404 W 7TH ST, STE 726	ENE 0 - 1/8 (0.005 mi.)	M514	412
R.N. JEWELRY	404 W 7TH STREET # 402	ENE 0 - 1/8 (0.005 mi.)	M516	414
STEVE'S FINE JEWELRY	404 W 7TH ST SUITE 514	ENE 0 - 1/8 (0.005 mi.)	M518	415
A&S JEWELERS,A.MKHITARIAN,S.SI	404 W 7TH STREET 1226	ENE 0 - 1/8 (0.005 mi.)	M520	417
GOLD SPECTRUM CORP	***404 W 7TH ST #1407***	***ENE 0 - 1/8 (0.005 mi.)***	***M525***	***423***
SUMI OFFICE SERVICES	***727 W SEVENTH ST STE 35***	***N 0 - 1/8 (0.005 mi.)***	***BE534***	***433***
ROOSEVELT BLDG LTD	***727 W 7TH ST***	***N 0 - 1/8 (0.005 mi.)***	***BE541***	***440***
HARMONY JEWELRY MFG	707 S BROADWAY RM 818	ENE 0 - 1/8 (0.005 mi.)	BD552	453
LA ATHLETIC CLUB	***431 W 7TH ST***	***NE 0 - 1/8 (0.006 mi.)***	***AB570***	***469***
CARL'S JR. CARL KARCHER ENT.,	620 S BROADWAY	ENE 0 - 1/8 (0.008 mi.)	S591	487

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MARKOSYAN JEWELRY	610 S BROADWAY #413	ENE 0 - 1/8 (0.008 mi.)	S595	490
VIKEN'S JEWELRY, V TOROSSIAN D	610 S BROADWAY, # 1024	ENE 0 - 1/8 (0.008 mi.)	S596	491
ADAMIAN JEWELRY, V & S ADAMIAN	610 S BROADWAY #601	ENE 0 - 1/8 (0.008 mi.)	S598	493
MODERN STYLING, KARIM HABER DB	610 S BROADWAY, # 209	ENE 0 - 1/8 (0.008 mi.)	S599	494
RAZMIK'S DESIGN	610 S BROADWAY, # 1020	ENE 0 - 1/8 (0.008 mi.)	S601	496
SAHAG & SONS, M & G KJUREGHIAN	610 S. BROADWAY, # 610	ENE 0 - 1/8 (0.008 mi.)	S602	497
PIERELDA JEWELRY	610 S BROADWAY #320	ENE 0 - 1/8 (0.008 mi.)	S603	497
GOLDEN ART JEWELERY	610 S BROADWAY #308	ENE 0 - 1/8 (0.008 mi.)	S605	499
14 K.V. JEWELRY	610 S. BROADWAY #215	ENE 0 - 1/8 (0.008 mi.)	S606	499
BASHOURA JEWELRY MFG, J BASHOU	610 S BROADWAY, SUITE 9	ENE 0 - 1/8 (0.008 mi.)	S607	500
M.J.M. MOURAD'S JEWELRY MFG, M	610 S BROADWAY #717	ENE 0 - 1/8 (0.008 mi.)	S609	502
ARAM & AGOB JEWELRY INC	610 S BROADWAY #306	ENE 0 - 1/8 (0.008 mi.)	S610	502
MESROBIAN JEWELRY CO, K MESROB	610 S BROADWAY #710	ENE 0 - 1/8 (0.008 mi.)	S612	504
T. NAZARETIAN & SONS, NAZARETI	610 S BROADWAY #211	ENE 0 - 1/8 (0.008 mi.)	S613	505
L & M JEWELRY	610 S BROADWAY # 111	ENE 0 - 1/8 (0.008 mi.)	S616	509
NUBAR KEGULIAN FINE JEWELRY	610 S BROADWAY # 510	ENE 0 - 1/8 (0.008 mi.)	S618	510
M&A JEWELRY MFG	610 S BROADWAY #924	ENE 0 - 1/8 (0.008 mi.)	S620	512
LAROUJ JEWELRY MFG	610 S. BROADWAY #322	ENE 0 - 1/8 (0.008 mi.)	S622	514
TWO STAR JEWELRY	610 S BROADWAY, STE 608	ENE 0 - 1/8 (0.008 mi.)	S626	518
MY WAY JEWELRY CO INC	610 S BROADWAY #905	ENE 0 - 1/8 (0.008 mi.)	S629	522
LUCKY HAND JEWELRY	610 SO. BROADWAY	ENE 0 - 1/8 (0.008 mi.)	S631	524
J.M.C. JEWELRY MFG	610 S BROADWAY #703	ENE 0 - 1/8 (0.008 mi.)	S632	524
INTERSTATE JEWELRY MFG CO	610 S BROADWAY # 612	ENE 0 - 1/8 (0.008 mi.)	S633	525
VENK JEWELERS	610 S. BROADWAY #315	ENE 0 - 1/8 (0.008 mi.)	S634	525
NORA'S FINE JEWELRY	610 S BROADWAY #1011	ENE 0 - 1/8 (0.008 mi.)	S637	528
LAROUJ JEWELRY MFG	610 S BROADWAY, #322	ENE 0 - 1/8 (0.008 mi.)	S638	529
HAIG'S	610 S BROADWAY #801	ENE 0 - 1/8 (0.008 mi.)	S639	530
M & S JEWELRY MFG INC	610 S BROADWAY #708	ENE 0 - 1/8 (0.008 mi.)	S640	530
HAKOPIAN JEWELRY	610 SO BROADWAY #1124	ENE 0 - 1/8 (0.008 mi.)	S641	530
HAGO'S WAY JEWELRY MFG, A DAGL	610 S BROADWAY # 908	ENE 0 - 1/8 (0.008 mi.)	S643	531
A & V MANUFACTURING CO INC	610 S BROADWAY, # 620	ENE 0 - 1/8 (0.008 mi.)	S644	532
S.A. CASTING, SIMON MEKHARIAN	412 WEST 6 ST, SUITE 92	NE 0 - 1/8 (0.011 mi.)	AC663	551
LENCO JEWELRY INC	412 W. 6TH STREET	NE 0 - 1/8 (0.011 mi.)	AC666	553
HOVSEP YACOUBIAN	***412 W 6TH ST***	***NE 0 - 1/8 (0.011 mi.)***	***AC670***	***556***
GREGORY & SONS	412 W 6TH ST #609	NE 0 - 1/8 (0.011 mi.)	AC671	557
CHAIN & CHARM CO	412 W 6TH ST. (SUITE 11	NE 0 - 1/8 (0.011 mi.)	AC677	568
UNIVERSAL JEWELERS, ALEJANDRO	412 W 6TH ST., NO. 803	NE 0 - 1/8 (0.011 mi.)	AC681	572
K & A FINE JEWELRY	412 W 6TH ST SUITE 601	NE 0 - 1/8 (0.011 mi.)	AC682	573
PRINCESS JEWELERS, TROY T APRA	412 W 6TH ST #418-419	NE 0 - 1/8 (0.011 mi.)	AC689	578
SAM PALEY JEWELERS INC	412 W 6TH SUITE 1121	NE 0 - 1/8 (0.011 mi.)	AC690	579
ENRIQUE RUIZ JEWELRY REPAIR	412 W 6TH STREET SUITE	NE 0 - 1/8 (0.011 mi.)	AC696	585
GRANITE CONSTRUCTION COMPANY	655 SO HOPE ST.	NNE 0 - 1/8 (0.030 mi.)	BE730	610
VERSAILLES JEWELERS, LEVON ATM	220 W 5TH STREET #505	ENE 0 - 1/8 (0.040 mi.)	BK747	624
K. L. K. JEWELRY MFG	220 W 5TH ST # 702	ENE 0 - 1/8 (0.040 mi.)	BK755	633
SIERRA INTL INVESTMENT PROPERT	220 W 5TH ST, SUITE 407	ENE 0 - 1/8 (0.040 mi.)	BK762	638
SEZAR'S MODERN ART, S KESHISHI	220 W 5TH ST, SUITE # 7	ENE 0 - 1/8 (0.040 mi.)	BK763	639
EL POLLO PRONTO	219 W. 4TH STREET	ENE 0 - 1/8 (0.040 mi.)	BL769	645
TWIN SPRINGS LTD PARTNSHP,B.PH	433 S SPRING ST	ENE 0 - 1/8 (0.044 mi.)	BL790	659
TWIN SPRINGS, LLC	***433 S SPRING ST***	***ENE 0 - 1/8 (0.044 mi.)***	***BL795***	***663***
MUSIC CENTER, HUNGRY TIGER INC	135 N GRAND AVENUE	NE 0 - 1/8 (0.051 mi.)	BS807	675
811 WILSHIRE LLC	***811 WILSHIRE BLVD***	***N 0 - 1/8 (0.061 mi.)***	***BJ853***	***708***
INTERGEN ASSOCIATES/TREPTOW	811 WILSHIRE, #100	N 0 - 1/8 (0.061 mi.)	BJ855	711
WILSHIRE GRAND BUILDING	600 WILSHIRE BLVD.	NNE 0 - 1/8 (0.062 mi.)	BR862	716
AON CENTER	***707 WILSHIRE BLVD***	***NNE 0 - 1/8 (0.063 mi.)***	***CD874***	***723***
FIRST INTERSTATE TOWER	707 WILSHIRE BLVD SUITE	NNE 0 - 1/8 (0.063 mi.)	CD875	726
LOS ANGELES TIMES COMMUNICATIO	202 W 1ST ST, ST & 145	NE 0 - 1/8 (0.073 mi.)	BY911	755

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
1X DEMETRIOU DEL GUERCIO & LOV	***215 W 6TH ST***	***ENE 0 - 1/8 (0.073 mi.)***	***CB914***	***760***
TIMES MIRROR CO	202 W 1ST ST 145 S SPRI	NE 0 - 1/8 (0.073 mi.)	BY916	761
TIMES MIRROR CO (EIS USE)	201 WEST FIRST STREET	NE 0 - 1/8 (0.074 mi.)	BY918	764
ANGELUS PLAZA	240 S OLIVE ST	NE 0 - 1/8 (0.075 mi.)	BU926	768
PACIFIC BELL	***433 S OLIVE***	***NE 0 - 1/8 (0.077 mi.)***	***CR942***	***781***
LOS ANGELES TIMES, A DIV OF TI	213 S SPRING STREET	NE 0 - 1/8 (0.078 mi.)	CE945	787
07 DIST OFFICE	***120 S SPRING ST***	***NE 0 - 1/8 (0.078 mi.)***	***BP963***	***803***
CALTRANS	120 SO. SPRING ST.	NE 0 - 1/8 (0.078 mi.)	BP964	806
MARCUS STEAK HOUSE	633 S OLIVE ST	NE 0 - 1/8 (0.078 mi.)	CI970	814
CALIFORNIA PLAZA HOTEL, L P	***251 S OLIVE ST***	***NE 0 - 1/8 (0.078 mi.)***	***BU977***	***819***
311 SOUTH SPRING STREET CO	311 S SPRING ST SUITE 6	ENE 0 - 1/8 (0.078 mi.)	CK980	823
S & H DRY CLEANERS, D YAMINI &	511 SOUTH SPRING STREET	ENE 0 - 1/8 (0.081 mi.)	BK1006	850
S & H CLEANERS	511 S SPRING ST	ENE 0 - 1/8 (0.081 mi.)	BK1007	851
CITY ENGINEERING	***600 S SPRING ST***	***ENE 0 - 1/8 (0.085 mi.)***	***CB1029***	***862***
612 PARTNERS LLC	***612 S FLOWER ST***	***N 0 - 1/8 (0.086 mi.)***	***BZ1035***	***866***
SPRING STREET TOWERS	650 SOUTH SPRING STREET	ENE 0 - 1/8 (0.086 mi.)	CX1041	872
HERON PROPERTIES INC	510 W 6TH ST	NE 0 - 1/8 (0.087 mi.)	DB1045	875
RELIANCE FIGUEROA ASSOCIATES	***930 WILSHIRE BL***	***N 0 - 1/8 (0.089 mi.)***	***CZ1051***	***879***
WILSHIRE GRAND HOTEL & CENTRE	***930 WILSHIRE BLVD***	***N 0 - 1/8 (0.089 mi.)***	***CZ1052***	***880***
LA CITY, DWP	***P.O. BOX 51111***	***NNE 0 - 1/8 (0.093 mi.)***	***CS1057***	***887***
MITSUI FUDOSAN (USA) INC	***600-601 SO FIGUEROA ST***	***N 0 - 1/8 (0.095 mi.)***	***CZ1075***	***912***
COPLEY PACIFIC ASSOCIATES LTD	523 W SIXTH ST SUITE 21	NE 0 - 1/8 (0.096 mi.)	DB1089	925
523 W 6TH ST ASSOCIATES LTD/PA	***523 W 6TH ST***	***NE 0 - 1/8 (0.096 mi.)***	***DB1091***	***925***
TREPTOW PROPERTY MANAGEMENT CO	616 S FIGUEROA ST	N 0 - 1/8 (0.098 mi.)	DC1100	935
LA UNI SCH DIST, 75TH ST ELEME	142 W 7TH ST	E 0 - 1/8 (0.106 mi.)	CG1116	950
REAL PROPERTY WEST INC, PAC FI	800 W. 6TH ST.	N 0 - 1/8 (0.116 mi.)	DG1139	971
LA CITY, TRANS DEPT	200 N. SPRING ST., RM.	NE 0 - 1/8 (0.119 mi.)	CT1141	971
SUMITOMO LIFE REALTY (N.Y.), I	1000 WILSHIRE BLVD, SUI	NNW 0 - 1/8 (0.120 mi.)	CZ1150	977
LA CITY, TRANS DEPT	***200 N SPRING ST.***	***NE 0 - 1/8 (0.120 mi.)***	***CT1154***	***981***
LOS ANGELES CITY HALL	***200 N SPRING ST***	***NE 0 - 1/8 (0.120 mi.)***	***CT1158***	***984***

Lower Elevation	Address	Direction / Distance	Map ID	Page
SANTA FE PACIFIC PIPELINE, INC	888 S FIGUEROA ST, STE	0 - 1/8 (0.000 mi.)	T176	153
CUSHMAN & WAKEFIELD OF CAL INC	***888 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***T222***	***190***
HOLIDAY INN	***1020 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***AX344***	***272***
UNOCAL #3300	***730 OLYMPIC BLVD W***	***0 - 1/8 (0.000 mi.)***	***AI346***	***274***
EMERIK HOTEL CORP	***1020 S FIGUEROA ST***	***0 - 1/8 (0.000 mi.)***	***AX363***	***285***
THE STANDARD OIL CO GROUP	***605 W OLYMPIC BLVD***	***0 - 1/8 (0.000 mi.)***	***AN374***	***294***
EASTERN COLUMBIA BLDG	849 SO BROADWAY STE 215	ESE 0 - 1/8 (0.008 mi.)	BH647	534
TRANSAMERICA OCCIDENTAL	***1150 S OLIVE ST***	***SSW 0 - 1/8 (0.061 mi.)***	***BX851***	***706***
TRANSAMERICA CENTER-OCCIDENTAL	1149 SOUTH BROADWAY	S 0 - 1/8 (0.078 mi.)	CO954	793
CALIFORIA MART	***110 E 9TH ST***	***SE 0 - 1/8 (0.108 mi.)***	***CJ1128***	***962***

US FIN ASSUR: All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

A review of the US FIN ASSUR list, as provided by EDR, and dated 05/24/2012 has revealed that there is 1 US FIN ASSUR site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNIQUE PREMIUM METALS, INC	***640 S HILL ST, STE 743***	***0 - 1/8 (0.000 mi.)***	***M244***	***211***

EXECUTIVE SUMMARY

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the HWP list, as provided by EDR, and dated 08/09/2010 has revealed that there is 1 HWP site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
UNIQUE PREMIUM METALS INC	***640 S HILL ST***	***0 - 1/8 (0.000 mi.)***	***M167***	***144***

HWT: A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

A review of the HWT list, as provided by EDR, and dated 04/11/2012 has revealed that there are 2 HWT sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LOS ANGELES DEPARTMENT OF WATE	111 NORTH HOPE STREET,	NNE 0 - 1/8 (0.093 mi.)	CS1063	894
SOUTHERN CALIFORNIA GAS CO	***555 W FIFTH ST***	***NE 0 - 1/8 (0.120 mi.)***	***DJ1162***	***992***

EDR PROPRIETARY RECORDS

EDR Proprietary Records

EDR Historical Auto Stations: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

A review of the EDR Historical Auto Stations list, as provided by EDR, has revealed that there are 114 EDR Historical Auto Stations sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BRIGGS W M	139 S OLIVE ST	0 - 1/8 (0.000 mi.)	B7	16
FREEMAN H V	101 S HILL ST	0 - 1/8 (0.000 mi.)	C19	26
SHOFFNER A M	844 S FLOWER ST	0 - 1/8 (0.000 mi.)	N90	83
BUSBY MYERS	610 W 8TH ST	0 - 1/8 (0.000 mi.)	O101	88
J P AUTO SERVICE	811 W 8TH ST	0 - 1/8 (0.000 mi.)	N128	113
PEYTON W E	859 S HOPE ST	0 - 1/8 (0.000 mi.)	Z129	113
DURANT R G	857 S FLOWER ST	0 - 1/8 (0.000 mi.)	AA132	114
MYERS G H	831 S HOPE ST	0 - 1/8 (0.000 mi.)	Z168	147
AUTO CENTRE GARAGE	746 S HOPE ST	0 - 1/8 (0.000 mi.)	V201	177
C S LUBRICATING SERVICE	742 S FLOWER ST	0 - 1/8 (0.000 mi.)	G247	217
BROWNING STARBUCK	811 S OLIVE ST	0 - 1/8 (0.000 mi.)	AF255	220
HUSBANDS L R	852 S FLOWER ST	0 - 1/8 (0.000 mi.)	AA256	221
CRANE A L	519 W 9TH ST	0 - 1/8 (0.000 mi.)	AO277	234
MARTIN MICHL	818 S OLIVE ST	0 - 1/8 (0.000 mi.)	AF282	238
MORGAN J E	943 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO292	244
KETELLE SON	944 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO298	246

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
EMMICK B H	951 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO305	249
BATSON N S	936 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO336	266
BRIGGS W M	842 S OLIVE ST	0 - 1/8 (0.000 mi.)	348	276
RANDLE W A	860 S GRAND AVE	0 - 1/8 (0.000 mi.)	AG361	285
SYSTEM SERVICE STATIONS	815 S OLIVE ST	0 - 1/8 (0.000 mi.)	AF372	291
LIPPERT LEONARD	902 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO390	305
RIO GRANDE OIL CO OFFICE	427 S HILL ST	0 - 1/8 (0.000 mi.)	F427	347
COLEMAN EDWARDS	815 W 7TH ST	N 0 - 1/8 (0.003 mi.)	G488	395
DEL PRATO JOHN	104 N HILL ST	NE 0 - 1/8 (0.004 mi.)	C506	410
BAIKA BROS	719 N BROADWAY	ENE 0 - 1/8 (0.005 mi.)	BD547	448
UNION OIL CO OF CAL	617 W 7TH ST	NNE 0 - 1/8 (0.005 mi.)	U558	459
PASSINO R A	208 S GRAND AVE	NE 0 - 1/8 (0.014 mi.)	BG705	592
SIGNAL OIL CO OFFICE	811 W 7TH ST	N 0 - 1/8 (0.018 mi.)	G719	603
HEUSCHKEL THEO	910 W 8TH ST	NNW 0 - 1/8 (0.055 mi.)	BT814	679
DALE BERNARD	936 W 8TH ST	NNW 0 - 1/8 (0.067 mi.)	BT900	748
ARTUSY M G	350 S OLIVE ST	NE 0 - 1/8 (0.077 mi.)	CQ940	779
ZISKA MATHEW	331 S OLIVE ST	NE 0 - 1/8 (0.079 mi.)	CP981	823
METROPOLITAN WATER DIST GARAGE	359 S OLIVE ST	NE 0 - 1/8 (0.079 mi.)	CQ984	825
FLOR RAY	125 S HOPE ST	NNE 0 - 1/8 (0.083 mi.)	CS1017	856
HAZARD J A	618 S FIGUEROA ST	N 0 - 1/8 (0.095 mi.)	DC1082	920
POTTS M F	951 WILSHIRE BLVD	N 0 - 1/8 (0.095 mi.)	CZ1083	920
CALIFORNIA MOTOR SERVICE CO	525 W 5TH ST	NE 0 - 1/8 (0.097 mi.)	CN1096	932
TULIS HARRY	963 WILSHIRE BLVD	N 0 - 1/8 (0.099 mi.)	CZ1101	935
TOW CHAS	1000 W 8TH ST	NNW 0 - 1/8 (0.100 mi.)	BT1104	939
LEHMAN DAVIS	1000 WILSHIRE BLVD	NNW 0 - 1/8 (0.120 mi.)	CZ1149	977

Lower Elevation	Address	Direction / Distance	Map ID	Page
EDMONDS C W	901 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y121	108
ARNO PAUL	918 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y156	136
ERSKINE C C JR	926 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y174	152
SCHULTZ FRED	930 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y183	160
GROSS THEO	615 W 9TH ST	0 - 1/8 (0.000 mi.)	Z211	183
ABBOTT H S	945 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y221	190
KRENTZER JOS CO	951 S FLOWER ST	0 - 1/8 (0.000 mi.)	234	203
CLEGHORN R W	1025 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ263	226
HAHN'S TEXACO	504 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AK265	227
COPPLE AUTO SERVICE	1032 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ273	233
WARD HOWARD F INC	1058 S FLOWER ST	0 - 1/8 (0.000 mi.)	AS280	237
STANDARD STATIONS INC OFFICE	605 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AN283	239
PENDARVIS H W	1018 S FLOWER ST	0 - 1/8 (0.000 mi.)	AS289	243
SPECK TIMMERMAN	607 W 11TH ST	0 - 1/8 (0.000 mi.)	AV291	244
PHELEN FRANK	1050 S HILL ST	0 - 1/8 (0.000 mi.)	AW293	244
BELL H J	1030 S FLOWER ST	0 - 1/8 (0.000 mi.)	AS296	246
LARSON CARL	1016 S FLOWER ST	0 - 1/8 (0.000 mi.)	AS301	247
MANAHAN J R	955 S HILL ST	0 - 1/8 (0.000 mi.)	AQ304	249
MARTIN JOHN	954 S OLIVE ST	0 - 1/8 (0.000 mi.)	AU309	250
PARAMOUNT REPAIR SHOP	1006 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ313	252
FERGUSON TOW SERVICE	1017 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ316	254
BURNHAM CHAS	1008 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ317	255
SCHAEFER A E	1023 S GRAND AVE	0 - 1/8 (0.000 mi.)	AK328	262
TEXACO COMPANY THE OFFICE	929 S BROADWAY	0 - 1/8 (0.000 mi.)	AZ333	265
WARD GRIFFEN	1030 S HOPE ST	0 - 1/8 (0.000 mi.)	AN338	267
BEGARIE JOHN	916 S HILL ST	0 - 1/8 (0.000 mi.)	AQ347	276
BUCHER E R	1021 S HILL ST	0 - 1/8 (0.000 mi.)	AW352	282
KREUTZER JOS	709 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AI353	282

EXECUTIVE SUMMARY

Lower Elevation	Address	Direction / Distance	Map ID	Page
TURNER G A	435 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AJ354	282
REAGAN KAZAR	1055 S GRAND AVE	0 - 1/8 (0.000 mi.)	AT359	284
HANSEN SERVICE	1053 S GRAND AVE	0 - 1/8 (0.000 mi.)	AT362	285
WILLYS DISTRIBUTORS SERVICE	1058 S HOPE ST	0 - 1/8 (0.000 mi.)	364	286
MC BRYDE LUBRICATING SERVICE I	916 S HOPE ST	0 - 1/8 (0.000 mi.)	AE379	298
PRATT W M	1027 S OLIVE ST	0 - 1/8 (0.000 mi.)	AJ383	300
TAYLOR T W	962 S OLIVE ST	0 - 1/8 (0.000 mi.)	AU385	303
JOHNSON F O	626 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AN388	304
HINKLEY PAUL CO	1059 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	AX440	357
CAMP G N	1100 S OLIVE ST	SSW 0 - 1/8 (0.002 mi.)	AP483	393
ST HELENS PETROLEUM CORP OFFIC	1031 S BROADWAY	SSE 0 - 1/8 (0.004 mi.)	AY507	410
MOSES F N	1101 S GRAND AVE	SW 0 - 1/8 (0.004 mi.)	AT508	410
POST POST	1100 S FIGUEROA ST	W 0 - 1/8 (0.004 mi.)	AV511	411
HOWIE A S	1102 S HILL ST	SSW 0 - 1/8 (0.005 mi.)	BF566	466
WHITLEY J A	1114 S OLIVE ST	SSW 0 - 1/8 (0.019 mi.)	AP721	605
RISDEN C W	1115 S OLIVE ST	SSW 0 - 1/8 (0.019 mi.)	AP722	605
HOFFMAN E H	1122 S OLIVE ST	SSW 0 - 1/8 (0.028 mi.)	AP727	609
KELLEY BROS	1127 S OLIVE ST	SSW 0 - 1/8 (0.033 mi.)	AP733	612
HOFFMAN E H	1128 S OLIVE ST	SSW 0 - 1/8 (0.035 mi.)	AP741	622
MORRIS J H	1130 S OLIVE ST	SSW 0 - 1/8 (0.038 mi.)	AP746	624
JOHNSON J W REAR	1132 S OLIVE ST	SSW 0 - 1/8 (0.040 mi.)	AP772	646
LUARD L S	1133 S OLIVE ST	SSW 0 - 1/8 (0.040 mi.)	AP775	647
CLEGHORN ROBT	1137 S OLIVE ST	SSW 0 - 1/8 (0.045 mi.)	AP797	666
LUARD L S	1138 S OLIVE ST	SSW 0 - 1/8 (0.047 mi.)	AP798	666
CLAXTON R E	1140 S HOPE ST	WSW 0 - 1/8 (0.052 mi.)	BC808	675
THOMPSON C J	1145 S FLOWER ST	WSW 0 - 1/8 (0.056 mi.)	BM815	679
STANDARD AUTO SERVICE CO	1144 S HOPE ST	WSW 0 - 1/8 (0.056 mi.)	816	679
MC KENNA E J	1147 S FLOWER ST	WSW 0 - 1/8 (0.058 mi.)	BM828	687
SCHERER S A	1148 S OLIVE ST	SSW 0 - 1/8 (0.059 mi.)	BX830	688
WHITLEY JAS	1148 S GRAND AVE	SW 0 - 1/8 (0.060 mi.)	BW841	699
SPEEDO ELECTRIC CO	1155 S OLIVE ST	SSW 0 - 1/8 (0.066 mi.)	BX888	740
KELLEY BROS	1127 S HILL ST	SSW 0 - 1/8 (0.067 mi.)	CH899	747
FOWLER L D	1129 S HILL ST	SSW 0 - 1/8 (0.072 mi.)	CH908	754
FIRESTONE AUTO SUPPLY SERVIC	1165 S FIGUEROA ST	W 0 - 1/8 (0.082 mi.)	BO1010	852
NETTOUR H L	839 W 9TH ST	NW 0 - 1/8 (0.082 mi.)	CM1016	856
MOORE PFEIF	1151 S MAIN ST	S 0 - 1/8 (0.084 mi.)	CW1020	858
GUARANTEED AUTO SERVICE	1156 S MAIN ST	S 0 - 1/8 (0.091 mi.)	CW1056	887
SOMMERS L O	211 W 12TH ST	SSW 0 - 1/8 (0.120 mi.)	CH1146	976
MORWAY STEPH	217 W 12TH ST	SSW 0 - 1/8 (0.120 mi.)	CH1147	976
CAIN EARL	225 W 12TH ST	SSW 0 - 1/8 (0.120 mi.)	DH1152	978
WILKINSON J E	315 W 12TH ST	SW 0 - 1/8 (0.120 mi.)	DI1160	989
THOMPSON C H	224 W 12TH ST	SSW 0 - 1/8 (0.122 mi.)	DH1175	1008
RICHARDS COWAN	1201 S BROADWAY	SSW 0 - 1/8 (0.124 mi.)	CO1184	1012
PLUECK H J	514 W 12TH ST	WSW 0 - 1/8 (0.124 mi.)	1188	1015
KELLEY BROS	1041 S LOS ANGELES ST	SSE 0 - 1/8 (0.125 mi.)	DK1197	1028

EDR Historical Cleaners: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

A review of the EDR Historical Cleaners list, as provided by EDR, has revealed that there are 114 EDR

EXECUTIVE SUMMARY

Historical Cleaners sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GROSS A M	256 S HILL ST	0 - 1/8 (0.000 mi.)	E32	38
AVERILL MORGAN CO	354 S HILL ST	0 - 1/8 (0.000 mi.)	I33	38
KARTIS MAX	321 W 4TH ST	0 - 1/8 (0.000 mi.)	H53	56
FINERMAN A	313 W 5TH ST	0 - 1/8 (0.000 mi.)	K61	63
BROWNS DYE WORKS	738 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	J64	64
LIPTON HARRY	327 W 4TH ST	0 - 1/8 (0.000 mi.)	H68	69
GROSS BENJ	326 W 4TH ST	0 - 1/8 (0.000 mi.)	H69	69
LIPTON HARRY	329 W 4TH ST	0 - 1/8 (0.000 mi.)	H76	73
SCURA SALVATORE	803 S FLOWER ST	0 - 1/8 (0.000 mi.)	N82	81
HABIT THE	637 W 8TH ST	0 - 1/8 (0.000 mi.)	O83	81
AMERICAN DYE WORKS	321 W 6TH ST	0 - 1/8 (0.000 mi.)	S88	83
WALTERS SAML	810 S HOPE ST	0 - 1/8 (0.000 mi.)	O91	83
RUDDER OBRIEN	744 S HOPE ST	0 - 1/8 (0.000 mi.)	V99	87
KUTSUMA M	726 W 8TH ST	0 - 1/8 (0.000 mi.)	N100	87
DE GRAZIA BERNARD	823 W 8TH ST	0 - 1/8 (0.000 mi.)	R103	89
STUMMEL C J	635 W 8TH ST	0 - 1/8 (0.000 mi.)	O116	101
ROBERTSON JAS	715 S HOPE ST	0 - 1/8 (0.000 mi.)	V140	121
YING HING	817 S GRAND AVE	0 - 1/8 (0.000 mi.)	O150	133
GOLDBERG ABR	802 S GRAND AVE	0 - 1/8 (0.000 mi.)	O151	133
CAMERON E S	722 W 9TH ST	0 - 1/8 (0.000 mi.)	T155	136
WELTER SAML	823 S GRAND AVE	0 - 1/8 (0.000 mi.)	O157	136
ERICKSON AARON	824 S GRAND AVE	0 - 1/8 (0.000 mi.)	O163	141
TANAKA J	709 W 8TH ST	0 - 1/8 (0.000 mi.)	AD175	152
WALDOW MORRIS	521 W 8TH ST	0 - 1/8 (0.000 mi.)	AF191	168
ERICKSON AARON	836 S GRAND AVE	0 - 1/8 (0.000 mi.)	AG193	169
BACHRACH LOUIS	377 W 6TH ST	0 - 1/8 (0.000 mi.)	S196	173
MORI HEIZO	721 S OLIVE ST	0 - 1/8 (0.000 mi.)	P206	180
ORLIJAN S J	507 W 8TH ST	0 - 1/8 (0.000 mi.)	AF212	183
PAPPAS S J	721 W 8TH ST	0 - 1/8 (0.000 mi.)	AD225	195
BENUM JACK	862 S FLOWER ST	0 - 1/8 (0.000 mi.)	Y226	195
WEAVER A J	754 S GRAND AVE	0 - 1/8 (0.000 mi.)	U242	210
PETRY J M	859 S GRAND AVE	0 - 1/8 (0.000 mi.)	AG253	220
FEGELMAN WOLFE	811 S OLIVE ST	0 - 1/8 (0.000 mi.)	AF254	220
DILLINGHAM C W	831 S OLIVE ST	0 - 1/8 (0.000 mi.)	AF272	233
MC DONNELL J E	312 W 9TH ST	0 - 1/8 (0.000 mi.)	AL288	243
JOHNSON MARY	953 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO300	247
COOPER S M	402 W 9TH ST	0 - 1/8 (0.000 mi.)	AL306	249
LEE SOON	912 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO322	258
DANDY PRESSING PARLOR	430 W 8TH ST	0 - 1/8 (0.000 mi.)	AR323	259
SUZUKI I	510 W 9TH ST	0 - 1/8 (0.000 mi.)	AO325	260
COHN JACK	426 W 8TH ST	0 - 1/8 (0.000 mi.)	AR327	261
ATLANTIC HAND LAUNDRY	936 S GRAND AVE	0 - 1/8 (0.000 mi.)	AO331	264
YUEN LEE	526 W 9TH ST	0 - 1/8 (0.000 mi.)	AO358	284
HULLQUIST C J	528 W 9TH ST	0 - 1/8 (0.000 mi.)	AO360	285
OLODORT JOS	415 S HILL ST	0 - 1/8 (0.000 mi.)	F431	351
SERRANO DANL	449 S HILL ST	0 - 1/8 (0.000 mi.)	F433	353
SCHULMAN C C	103 N GRAND AVE	NE 0 - 1/8 (0.002 mi.)	D463	378
ADLAND EREN	806 W 8TH ST	NNW 0 - 1/8 (0.002 mi.)	R468	380
SOLOMON ABR	322 S BROADWAY	NE 0 - 1/8 (0.003 mi.)	L486	394
AMERICAN DYE WORKS	542 S BROADWAY	ENE 0 - 1/8 (0.006 mi.)	576	476
BRANCHES	417 W 7TH ST	ENE 0 - 1/8 (0.006 mi.)	M577	476
GAINES H H	818 W 8TH ST	NNW 0 - 1/8 (0.008 mi.)	R584	482
KURTZ MAX	820 W 8TH ST	NNW 0 - 1/8 (0.009 mi.)	R649	536
LUCAS ANNA MRS	203 S GRAND AVE	NE 0 - 1/8 (0.014 mi.)	BG706	592
PAPPADOPOOLOS NICHOLAS	811 W 7TH ST	N 0 - 1/8 (0.018 mi.)	G718	603

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HALLNER H F	209 S GRAND AVE	NE 0 - 1/8 (0.019 mi.)	BG723	605
MORI HIEZO	647 S FLOWER ST	N 0 - 1/8 (0.035 mi.)	G740	622
BRANCHES	228 W 5TH ST	ENE 0 - 1/8 (0.036 mi.)	BK745	623
RELIABLE CLEANERS AND HAND LAU	423 W 4TH ST	NE 0 - 1/8 (0.040 mi.)	BN778	649
J W PRESSING PARLOR	216 W 7TH ST	ENE 0 - 1/8 (0.044 mi.)	BD786	657
NEEDLEMAN LOUIS	125 N BROADWAY	NE 0 - 1/8 (0.044 mi.)	BQ789	659
FINNERMAN BENJ	213 W 4TH ST	ENE 0 - 1/8 (0.048 mi.)	BL800	667
BARNETT MORRIS	211 W 4TH ST	ENE 0 - 1/8 (0.053 mi.)	BL809	675
KITAEN DAVID	908 W 8TH ST	NNW 0 - 1/8 (0.054 mi.)	BT811	676
YEMEN M H	605 S HOPE ST	NNE 0 - 1/8 (0.058 mi.)	BR829	687
WONG LANNY	941 W 7TH ST	NNW 0 - 1/8 (0.061 mi.)	CA844	701
SMITH W J	255 S GRAND AVE	NE 0 - 1/8 (0.066 mi.)	CF893	742
CHARLOFF BESSIE	948 W 7TH ST	NNW 0 - 1/8 (0.071 mi.)	CA904	752
SILVERMAN ABR	259 S GRAND AVE	NE 0 - 1/8 (0.072 mi.)	CF905	752
TROTTER W H	256 S OLIVE ST	NE 0 - 1/8 (0.077 mi.)	BU932	774
MARUNO MANZO	202 W 7TH ST	E 0 - 1/8 (0.077 mi.)	CG934	775
ROBERTSON SON	455 S OLIVE ST	NE 0 - 1/8 (0.077 mi.)	CR943	787
ROBERTSON WM	457 S OLIVE ST	NE 0 - 1/8 (0.077 mi.)	CR944	787
YEE HENRY	259 S OLIVE ST	NE 0 - 1/8 (0.078 mi.)	BU973	815
FREEDMAN ROBT	413 S SPRING ST	ENE 0 - 1/8 (0.080 mi.)	BL991	838
BALL JACOB	336 S SPRING ST	ENE 0 - 1/8 (0.081 mi.)	CK1001	846
FRANKLIN CELIA MRS	509 S SPRING ST	ENE 0 - 1/8 (0.081 mi.)	BK1003	848
SIMONS ISRAEL	506 W 4TH ST	NE 0 - 1/8 (0.082 mi.)	BN1009	851
MORALES F G	630 S SPRING ST	ENE 0 - 1/8 (0.084 mi.)	CX1022	859
FEGELMAN CHAS	511 W 5TH ST	NE 0 - 1/8 (0.087 mi.)	CN1043	874
FRENCH COLONIAL LAUNDRY	601 S FIGEROA	N 0 - 1/8 (0.095 mi.)	CZ1077	915
JOHNSON JOHNSON	610 S FIGUEROA ST	N 0 - 1/8 (0.109 mi.)	DC1131	966
YEMEN M H	617 S GRAND AVE	NNE 0 - 1/8 (0.110 mi.)	DF1133	966
ROSSLYN HOTEL VALET SHOP	121 W 5TH ST	ENE 0 - 1/8 (0.123 mi.)	DL1180	1011
AVERILL MORGAN CO	605 S GRAND AVE	NNE 0 - 1/8 (0.124 mi.)	DF1186	1014

Lower Elevation	Address	Direction / Distance	Map ID	Page
HOCHMAN ISIDORE	829 W 8TH ST	0 - 1/8 (0.000 mi.)	R87	82
STAVISS MAX	629 W 9TH ST	0 - 1/8 (0.000 mi.)	AE187	163
AVERILL MORGAN CO	319 W 8TH ST	0 - 1/8 (0.000 mi.)	AM267	228
KNEWBOW ISADORE	946 S HILL ST	0 - 1/8 (0.000 mi.)	AQ276	234
WILSON L C	208 W 11TH ST	0 - 1/8 (0.000 mi.)	AP290	244
HORIUCHI J	1033 S FIGUEROA ST	0 - 1/8 (0.000 mi.)	AX307	249
NEW WELL HAND LAUNDRY	1056 S GRAND AVE	0 - 1/8 (0.000 mi.)	AT315	254
A COMPANY CLEANERS	363 W OLYMPIC BLVD	0 - 1/8 (0.000 mi.)	AJ318	255
DAVIS EPHRAIM	1063 S BROADWAY	0 - 1/8 (0.000 mi.)	AY321	258
KAY WONG	1002 S GRAND AVE	0 - 1/8 (0.000 mi.)	AK334	265
ROLDAN ALF	1091/2 S BROADWAY	0 - 1/8 (0.000 mi.)	AY367	289
KIM Y H	426 W 11TH ST	WSW 0 - 1/8 (0.002 mi.)	BC464	378
MORGAN F F	1013 S BROADWAY	SSE 0 - 1/8 (0.006 mi.)	581	480
BERNSTEIN P H	904 S BROADWAY	SE 0 - 1/8 (0.011 mi.)	BA697	585
FISHER I I	828 W 8TH ST	NNW 0 - 1/8 (0.013 mi.)	R700	587
SUE SAM	817 W OLYMPIC BLVD	WNW 0 - 1/8 (0.022 mi.)	AX724	605
KENDALL F J	111 W 11TH ST	S 0 - 1/8 (0.029 mi.)	BI728	609
WING QUONG	1124 S FLOWER ST	WSW 0 - 1/8 (0.033 mi.)	AV734	612
CARTER JACK	818 W 9TH ST	NW 0 - 1/8 (0.042 mi.)	W780	651
LEE TONG	1146 S GRAND AVE	SW 0 - 1/8 (0.058 mi.)	BW827	687
NAKAMURA L	827 W 9TH ST	NW 0 - 1/8 (0.075 mi.)	CM921	767
CAUNCE THOS	938 S MAIN ST	SE 0 - 1/8 (0.080 mi.)	CJ988	831
PAGE JOHN	757 S SPRING ST	E 0 - 1/8 (0.084 mi.)	CY1028	862

EXECUTIVE SUMMARY

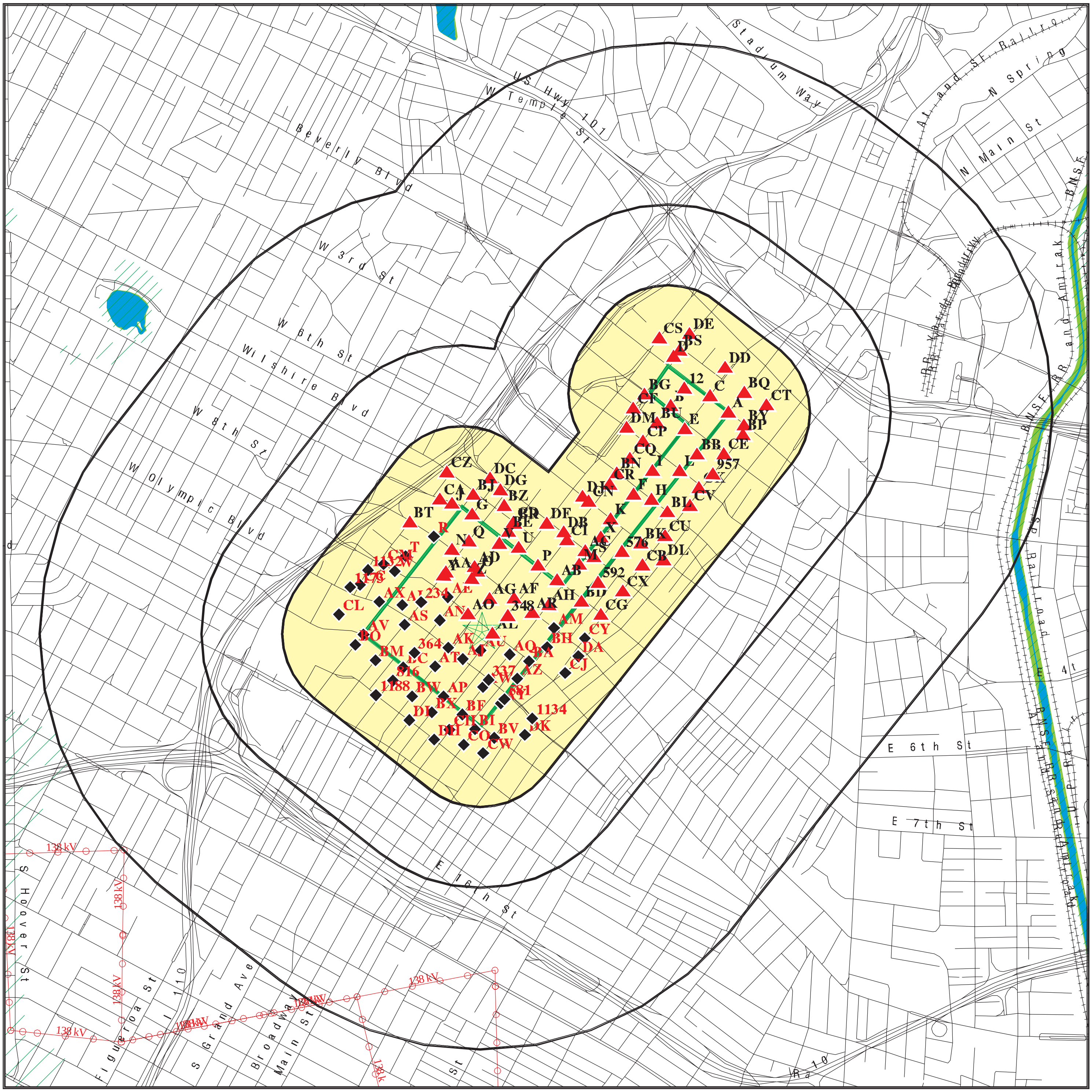
Lower Elevation	Address	Direction / Distance	Map ID	Page
CHIRIGOTIS MIKE	838 S SPRING ST	ESE 0 - 1/8 (0.089 mi.)	DA1055	887
BENGHIT ELI	856 S MAIN ST	ESE 0 - 1/8 (0.104 mi.)	CJ1112	946
GERTZMAN SAML	111 E 9TH ST	SE 0 - 1/8 (0.115 mi.)	CJ1135	967
LAMAS MAX	809 S MAIN ST	ESE 0 - 1/8 (0.117 mi.)	DA1140	971
TIMPE A M	225 W 12TH ST	SSW 0 - 1/8 (0.120 mi.)	DH1151	978
SKLAR ISAAC	159 W 12TH ST	SSW 0 - 1/8 (0.120 mi.)	CO1159	989

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 21 records.

Site Name	Database(s)
WILLIAM E WARNE POWER PLANT	NPDES,ENF
VMC BIG ROCK EXPANSION	NPDES
BRADLEY WEST CNSTRUCTION TRAFFIC M	NPDES
CISCO GROVE STATION	FID,SWEEPS UST
	CDL
G & L LEASE	SLIC REGION 2,HIST UST
CISCO GROVE STATION	HIST UST
NAIM FAHEL	HIST UST
SULPHUR CREST	HIST UST
SFPP LP (HOLT STIE)	HAZNET
MURPHY INDUSTRIAL COATINGS INC	HAZNET
MURPHY IND COATING LOS ANGELES	HAZNET
BARNARD TRANSPORTATION	HAZNET
UNOCAL SO CAL. DIV. PIPE LINE	HAZNET
1X MOUNTAINS RECRTN & CONCV AUTHOR	HAZNET
PACIFIC RIM TRANSPORTATION INC	HAZNET
	ERNS
LA CO B&H WILL RODGERS BEACH	HMS LOS ANGELES
BLU AUTOBODY GROUP INC	HMS LOS ANGELES
SHELL OIL #204-2928-0538	HMS LOS ANGELES
UNOCAL - OIL & GAS DIVISION	EMI

OVERVIEW MAP - 3359610.1s



0 1/4 1/2 1 Miles

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

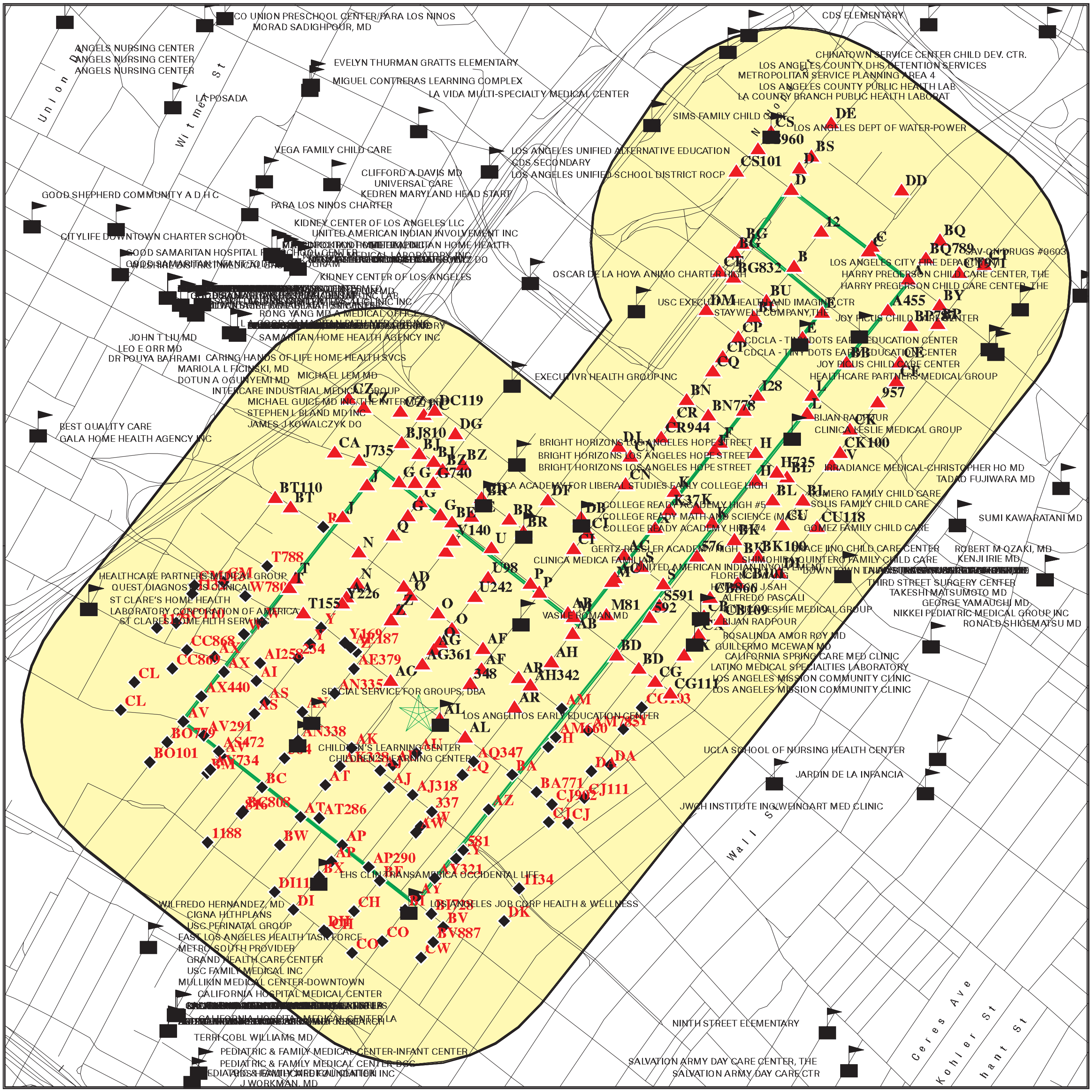
National Wetland Inventory

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: LA Streetcar ADDRESS: 7th Street and Broadway Los Angeles CA 90015 LAT/LONG: 34.0439 / 118.2588	CLIENT: HDR CONTACT: Colleen Murray INQUIRY #: 3359610.1s DATE: July 05, 2012 7:40 pm

DETAIL MAP - 3359610.1s



0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	LA Streetcar	CLIENT:	HDR
ADDRESS:	7th Street and Broadway Los Angeles CA 90015	CONTACT:	Colleen Murray
		INQUIRY #:	3359610.1s
LAT/LONG:	34.0439 / 118.2588	DATE:	July 05, 2012 7:44 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	0.125		0	NR	NR	NR	NR	0
Proposed NPL	0.125		0	NR	NR	NR	NR	0
NPL LIENS	0.125		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	0.125		0	NR	NR	NR	NR	0
Federal CERCLIS list								
CERCLIS	0.125		2	NR	NR	NR	NR	2
FEDERAL FACILITY	0.125		0	NR	NR	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.125		0	NR	NR	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	0.125		0	NR	NR	NR	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.125		0	NR	NR	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.125		6	NR	NR	NR	NR	6
RCRA-SQG	0.125		125	NR	NR	NR	NR	125
RCRA-CESQG	0.125		2	NR	NR	NR	NR	2
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.125		0	NR	NR	NR	NR	0
US INST CONTROL	0.125		0	NR	NR	NR	NR	0
Federal ERNS list								
ERNS	0.125		14	NR	NR	NR	NR	14
State- and tribal - equivalent NPL								
RESPONSE	0.125		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	0.125		6	NR	NR	NR	NR	6
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.125		1	NR	NR	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.125		16	NR	NR	NR	NR	16
SLIC	0.125		3	NR	NR	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.125		0	NR	NR	NR	NR	0
State and tribal registered storage tank lists								
UST	0.125		37	NR	NR	NR	NR	37
AST	0.125		2	NR	NR	NR	NR	2
INDIAN UST	0.125		0	NR	NR	NR	NR	0
FEMA UST	0.125		0	NR	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.125		0	NR	NR	NR	NR	0
INDIAN VCP	0.125		0	NR	NR	NR	NR	0

ADDITIONAL ENVIRONMENTAL RECORDS

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Local Brownfield lists								
US BROWNFIELDS	0.125		1	NR	NR	NR	NR	1
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.125		0	NR	NR	NR	NR	0
ODI	0.125		0	NR	NR	NR	NR	0
WMUDS/SWAT	0.125		1	NR	NR	NR	NR	1
SWRCY	0.125		0	NR	NR	NR	NR	0
HAULERS	0.125		0	NR	NR	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	0.125		0	NR	NR	NR	NR	0
HIST Cal-Sites	0.125		0	NR	NR	NR	NR	0
SCH	0.125		0	NR	NR	NR	NR	0
Toxic Pits	0.125		0	NR	NR	NR	NR	0
AOCONCERN	0.125		0	NR	NR	NR	NR	0
CDL	0.125		0	NR	NR	NR	NR	0
US HIST CDL	0.125		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.125		94	NR	NR	NR	NR	94
HIST UST	0.125		34	NR	NR	NR	NR	34
SWEEPS UST	0.125		100	NR	NR	NR	NR	100
Local Land Records								
LIENS 2	0.125		0	NR	NR	NR	NR	0
LUCIS	0.125		0	NR	NR	NR	NR	0
LIENS	0.125		0	NR	NR	NR	NR	0
DEED	0.125		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.125		0	NR	NR	NR	NR	0
CHMIRS	0.125		24	NR	NR	NR	NR	24
LDS	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	0.125		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen	0.125		16	NR	NR	NR	NR	16
DOT OPS	0.125		1	NR	NR	NR	NR	1
DOD	0.125		0	NR	NR	NR	NR	0
FUDS	0.125		0	NR	NR	NR	NR	0
CONSENT	0.125		0	NR	NR	NR	NR	0
ROD	0.125		0	NR	NR	NR	NR	0
UMTRA	0.125		0	NR	NR	NR	NR	0
MINES	0.125		0	NR	NR	NR	NR	0
TRIS	0.125		0	NR	NR	NR	NR	0
TSCA	0.125		1	NR	NR	NR	NR	1
FTTS	0.125		7	NR	NR	NR	NR	7
HIST FTTS	0.125		7	NR	NR	NR	NR	7
SSTS	0.125		0	NR	NR	NR	NR	0
ICIS	0.125		3	NR	NR	NR	NR	3
PADS	0.125		0	NR	NR	NR	NR	0
MLTS	0.125		0	NR	NR	NR	NR	0
RADINFO	0.125		0	NR	NR	NR	NR	0
FINDS	0.125		169	NR	NR	NR	NR	169
RAATS	0.125		0	NR	NR	NR	NR	0
CA BOND EXP. PLAN	0.125		0	NR	NR	NR	NR	0
NPDES	0.125		16	NR	NR	NR	NR	16
WDS	0.125		10	NR	NR	NR	NR	10
UIC	0.125		1	NR	NR	NR	NR	1
Cortese	0.125		1	NR	NR	NR	NR	1
HIST CORTESE	0.125		9	NR	NR	NR	NR	9
Notify 65	0.125		0	NR	NR	NR	NR	0
LA Co. Site Mitigation	0.125		3	NR	NR	NR	NR	3
DRYCLEANERS	0.125		1	NR	NR	NR	NR	1
WIP	0.125		0	NR	NR	NR	NR	0
LOS ANGELES CO. HMS	0.125		11	NR	NR	NR	NR	11
ENF	0.125		5	NR	NR	NR	NR	5
HAZNET	0.125		484	NR	NR	NR	NR	484
EMI	0.125		147	NR	NR	NR	NR	147
INDIAN RESERV	0.125		0	NR	NR	NR	NR	0
SCRD DRYCLEANERS	0.125		0	NR	NR	NR	NR	0
US FIN ASSUR	0.125		1	NR	NR	NR	NR	1
EPA WATCH LIST	0.125		0	NR	NR	NR	NR	0
2020 COR ACTION	0.125		0	NR	NR	NR	NR	0
FINANCIAL ASSURANCE	0.125		0	NR	NR	NR	NR	0
HWP	0.125		1	NR	NR	NR	NR	1
HWT	0.125		2	NR	NR	NR	NR	2
COAL ASH EPA	0.125		0	NR	NR	NR	NR	0
COAL ASH DOE	0.125		0	NR	NR	NR	NR	0
MWMP	0.125		0	NR	NR	NR	NR	0
PCB TRANSFORMER	0.125		0	NR	NR	NR	NR	0
PROC	0.125		0	NR	NR	NR	NR	0

EDR PROPRIETARY RECORDS

EDR Proprietary Records								
Manufactured Gas Plants	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EDR Historical Auto Stations	0.125		114	NR	NR	NR	NR	114
EDR Historical Cleaners	0.125		114	NR	NR	NR	NR	114

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **CAILFORINA DEPARTMENT OF GENERAL SERVICE** **CA FID UST** **S101617142**
107 S BROADWAY **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **HAZNET**
1 ft.

Site 1 of 15 in cluster A

Relative: Higher

Actual: 299 ft.

CA FID UST:

Facility ID:	19019019
Regulated By:	UTNKI
Regulated ID:	00033915
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136203370
Mail To:	Not reported
Mailing Address:	107 S BROADWAY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	1882
Number:	Not reported
Board Of Equalization:	44-002878
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001882-000001
Actv Date:	Not reported
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	2

Status:	Not reported
Comp Number:	1882
Number:	Not reported
Board Of Equalization:	44-002878
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001882-000002
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

CAILFORINA DEPARTMENT OF GENERAL SERVICE (Continued) **S101617142**

Status:	Not reported
Comp Number:	68138
Number:	Not reported
Board Of Equalization:	44-014697
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	26-000-068138-000001
Actv Date:	Not reported
Capacity:	7500
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	2

Status:	Not reported
Comp Number:	68138
Number:	Not reported
Board Of Equalization:	44-014697
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	26-000-068138-000002
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

HAZNET:

Year:	2007
Gepaid:	CAC002561599
Contact:	LORENZO DAVIS/BUILDING MGR
Telephone:	2138944984
Mailing Name:	Not reported
Mailing Address:	312 N SPRING ST STE 1020
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons:	4.94
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002561599
Contact:	LORENZO DAVIS/BUILDING MGR
Telephone:	2138944984
Mailing Name:	Not reported
Mailing Address:	312 N SPRING ST STE 1020

CAILFORINA DEPARTMENT OF GENERAL SERVICE (Continued) **S101617142**

Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Unspecified organic liquid mixture
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 1.87
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000273999
Contact: NORMA QUON/DEPUTY PROPERTY MGR
Telephone: 2138943573
Mailing Name: Not reported
Mailing Address: 312 N SPRING ST STE 1020 NORMA QUON
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Tank bottom waste
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 98.41
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000273999
Contact: NORMA QUON/DEPUTY PROPERTY MGR
Telephone: 2138943573
Mailing Name: Not reported
Mailing Address: 312 N SPRING ST STE 1020 NORMA QUON
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 16.68
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000273999
Contact: NORMA QUON/DEPUTY PROPERTY MGR
Telephone: 2138943573
Mailing Name: Not reported
Mailing Address: 312 N SPRING ST STE 1020 NORMA QUON
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Waste oil and mixed oil
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 2.05
Facility County: Los Angeles

CAILFORINA DEPARTMENT OF GENERAL SERVICE (Continued) **S101617142**

Click this hyperlink while viewing on your computer to access
32 additional CA_HAZNET: record(s) in the EDR Site Report.

A2 **CAL ST, ST BLDG** **EMI** **S106827695**
107 S. BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 2 of 15 in cluster A

Relative:
Higher

Actual:
299 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	12615
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	8
Reactive Organic Gases Tons/Yr:	8
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	12615
Air District Name:	SC
SIC Code:	9199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

A3 **STATE OF CALIF., DEPT GENERAL** **EMI** **S106840044**
107 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 3 of 15 in cluster A

Relative:
Higher

Actual:
299 ft.

EMI:

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	12615
Air District Name:	SC

STATE OF CALIF., DEPT GENERAL (Continued) **S106840044**

SIC Code:	9199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	12615
Air District Name:	SC
SIC Code:	9199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

A4 **ADELANTE EASTSIDE** **US BROWNFIELDS** **1012171577**
100 BROADWAY S **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 4 of 15 in cluster A

Relative:
Higher

Actual:
300 ft.

US BROWNFIELDS:

Recipient name:	Los Angeles, City of
Grant type:	Assessment
Property name:	Adelante Eastside
Property #:	Not reported
Parcel size:	2200
Latitude:	34.05329
Longitude:	-118.245009
HCM label:	Not reported
Map scale:	Not reported
Point of reference:	Not reported
Datum:	Not reported
ACRES property ID:	11458
Start date:	Not reported
Completed date:	Not reported
Acres cleaned up:	Not reported
Cleanup funding:	Not reported
Cleanup funding source:	Not reported
Assessment funding:	Not reported
Assessment funding source:	Not reported
Redevelopment funding:	Not reported
Redev. funding source:	Not reported
Redev. funding entity name:	Not reported

ADELANTE EASTSIDE (Continued) **1012171577**

Redevelopment start date:	Not reported
Assessment funding entity:	Not reported
Cleanup funding entity:	Not reported
Grant type:	N/A
Accomplishment type:	Phase I Environmental Assessment
Ownership entity:	Not reported
Current owner:	Not reported
Did owner change:	Not reported
Cleanup required:	Not reported
Video available:	Not reported
Photo available:	Not reported
Institutional controls required:	Not reported
IC Category proprietary controls:	Not reported
IC cat. info. devices:	Not reported
IC cat. gov. controls:	Not reported
IC cat. enforcement permit tools:	Not reported
IC in place date:	Not reported
IC in place:	Unknown
State/tribal program date:	Not reported
State/tribal program ID:	Not reported
State/tribal NFA date:	Not reported
Air contaminated:	Not reported
Air cleaned:	Not reported
Asbestos found:	Not reported
Asbestos cleaned:	Not reported
Controled substance found:	Not reported
Controled substance cleaned:	Not reported
Drinking water affected:	Not reported
Drinking water cleaned:	Not reported
Groundwater affected:	Not reported
Groundwater cleaned:	Not reported
Lead contaminant found:	Not reported
Lead cleaned up:	Not reported
No media affected:	Not reported
Unknown media affected:	Not reported
Other cleaned up:	Not reported
Other metals found:	Not reported
Other metals cleaned:	Not reported
Other contaminants found:	Not reported
Other contams found description:	Not reported
PAHs found:	Not reported
PAHs cleaned up:	Not reported
PCBs found:	Not reported
PCBs cleaned up:	Not reported
Petro products found:	Not reported
Petro products cleaned:	Not reported
Sediments found:	Not reported
Sediments cleaned:	Not reported
Soil affected:	Not reported
Soil cleaned up:	Not reported
Surface water cleaned:	Not reported
Unknown found:	Not reported
VOCs found:	Not reported
VOCs cleaned:	Not reported
Cleanup other description:	Not reported
Num. of cleanup and re-dev. jobs:	Not reported
Past use greenspace acreage:	Not reported

ADELANTE EASTSIDE (Continued) **1012171577**

Past use residential acreage: Not reported
Past use commercial acreage: Not reported
Past use industrial acreage: Not reported
Future use greenspace acreage: Not reported
Future use residential acreage: Not reported
Future use commercial acreage: Not reported
Future use industrial acreage: Not reported
Greenspace acreage and type: Not reported
Superfund Fed. landowner flag: Not reported

A5 **STATE OF CALIFORNIA DEPT OF GEN SRVS** **HAZNET** **S103621820**
107 S BROADWAY AVE #1007 **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 5 of 15 in cluster A

Relative:
Higher

Actual:
299 ft.

HAZNET:

Year: 2000
Gepaid: CAD981445299
Contact: STATE DEPT GENERAL SERVICES
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 107 S BROADWAY STE 1007
Mailing City,St,Zip: LOS ANGELES, CA 900124407
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 5.0040
Facility County: Los Angeles

Year: 1999
Gepaid: CAD981445299
Contact: STATE DEPT GENERAL SERVICES
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 107 S BROADWAY STE 1007
Mailing City,St,Zip: LOS ANGELES, CA 900124407
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 0.8428
Facility County: Los Angeles

Year: 1999
Gepaid: CAD981445299
Contact: STATE DEPT GENERAL SERVICES
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 107 S BROADWAY STE 1007
Mailing City,St,Zip: LOS ANGELES, CA 900124407
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Other inorganic solid waste

STATE OF CALIFORNIA DEPT OF GEN SRVS (Continued) **S103621820**

Disposal Method:	Transfer Station
Tons:	0.2
Facility County:	Los Angeles
Year:	1999
Gepaid:	CAD981445299
Contact:	STATE DEPT GENERAL SERVICES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	107 S BROADWAY STE 1007
Mailing City,St,Zip:	LOS ANGELES, CA 900124407
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Transfer Station
Tons:	0.7089
Facility County:	Los Angeles
Year:	1997
Gepaid:	CAD981445299
Contact:	STATE DEPT GENERAL SERVICES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	107 S BROADWAY STE 1007
Mailing City,St,Zip:	LOS ANGELES, CA 900124407
Gen County:	Los Angeles
TSD EPA ID:	CAT080025711
TSD County:	San Bernardino
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	.0834
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
8 additional CA_HAZNET: record(s) in the EDR Site Report.

A6 **DEMOLITION OF JUNIPERO SERRA STATE BLDG** **NPDES** **S109692237**
107 BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 6 of 15 in cluster A

Relative:
Higher

Actual:
299 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	321171
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C345893
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	02/26/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/02/2010

DEMOLITION OF JUNIPERO SERRA STATE BLDG (Continued) **S109692237**

Discharge Name:	US General Service Administration
Discharge Address:	450 Golden Gate Ave 3rd Fl W
Discharge City:	San Francisco
Discharge State:	California
Discharge Zip:	94102

B7 **BRIGGS W M** — **EDR Historical Auto Stations** — **1009080945** **N/A**
139 S OLIVE ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 5 in cluster B

Relative: Higher

Actual: 356 ft.

EDR Historical Auto Stations:

Name:	BRIGGS W M
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS

C8 **CALIF STATE GARAGE** — **RCRA-SQG** — **1000249801**
122 SO HILL ST — **FINDS** — **CAD981677388**
< 1/8 **LOS ANGELES, CA 90012** — **HAZNET**
1 ft.

Site 1 of 11 in cluster C

Relative: Higher

Actual: 326 ft.

RCRA-SQG:

Date form received by agency:	10/06/1986
Facility name:	CALIF STATE GARAGE
Facility address:	122 SO HILL ST LOS ANGELES, CA 90012
EPA ID:	CAD981677388
Contact:	ENVIRONMENTAL MANAGER
Contact address:	122 SO HILL ST LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(213) 620-5946
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	STATE OF CALIFORNIA
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	State
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED

CALIF STATE GARAGE (Continued) **1000249801**

NOT REQUIRED, ME 99999

Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: State
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002747724

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 2000
Gepaid: CAD981677388
Contact: STATE OF CALIF
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 122 S HILL ST
Mailing City,St,Zip: LOS ANGELES, CA 900123116
Gen County: Los Angeles
TSD EPA ID: CAT000613935
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Transfer Station
Tons: 1.4965
Facility County: Los Angeles

Year: 1999

CALIF STATE GARAGE (Continued) **1000249801**

Gepaid:	CAD981677388
Contact:	STATE OF CALIF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	122 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123116
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	1.6339
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD981677388
Contact:	STATE OF CALIF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	122 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123116
Gen County:	Los Angeles
TSD EPA ID:	CAL000113451
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD981677388
Contact:	STATE OF CALIF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	122 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123116
Gen County:	Los Angeles
TSD EPA ID:	CAT000613893
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	1.2339
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD981677388
Contact:	STATE OF CALIF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	122 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123116
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	.7089

CALIF STATE GARAGE (Continued) **1000249801**

Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

A9 **CALIFORNIA DEPT OF JUSTICE** **RCRA-SQG** **1000252205**
107 S BROADWAY RM 3131 **FINDS** **CAD980673743**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 7 of 15 in cluster A

Relative: Higher

Actual: 299 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	CALIFORNIA DEPT OF JUSTICE
Facility address:	107 S BROADWAY RM 3131
	LOS ANGELES, CA 90012
EPA ID:	CAD980673743
Mailing address:	S BROADWAY RM 3131
	LOS ANGELES, CA 90012
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	STATE OF CALIFORNIA
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

CALIFORNIA DEPT OF JUSTICE (Continued) **1000252205**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002670244

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

C10 **OFFICE OF FLEET ADMINISTRATION** **UST** **U001560532**
122 S HILL ST **HIST UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **SWEEPS UST**
1 ft.

Site 2 of 11 in cluster C

Relative: Higher

Actual: 326 ft.

UST:

Facility ID:	24322
Latitude:	34.05396
Longitude:	-118.24689

HIST UST:

Region:	STATE
Facility ID:	00000041494
Facility Type:	Other
Other Type:	STATE GARAGE
Total Tanks:	0002
Contact Name:	TOM KAWANO
Telephone:	8186204450
Owner Name:	STATE OF CALIFORNIA-DEPART. OF
Owner Address:	1416 10TH STREET
Owner City,St,Zip:	SACRAMENTO, CA 95814

Tank Num:	001
Container Num:	1
Year Installed:	1983
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED

OFFICE OF FLEET ADMINISTRATION (Continued) **U001560532**

Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 2
Year Installed: 1983
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

SWEEPS UST:
Status: A
Comp Number: 2283
Number: 6
Board Of Equalization: 44-012252
Ref Date: 03-10-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002283-000001
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 2

Status: A
Comp Number: 2283
Number: 6
Board Of Equalization: 44-012252
Ref Date: 03-10-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002283-000002
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

D11 **WALT DISNEY HALL PARKING** **WDS** **S105774647**
111 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 1 of 6 in cluster D

Relative:
Higher

Actual:
393 ft.

CA WDS:
Facility ID: Los Angeles River 196000076
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)

WALT DISNEY HALL PARKING (Continued) **S105774647**

Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAG994001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	2136263317
Facility Contact:	Dan Freleaux
Agency Name:	LA CO PARKING AUTHORITY
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	County
SIC Code:	8399
SIC Code 2:	Not reported
Primary Waste:	Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

12	**METOR RAIL**	**CA FID UST**	**S101586970**
	120 S OLIVE ST	**SWEEPS UST**	**N/A**
< 1/8	**LOS ANGELES, CA 90013**		
1 ft.			
Relative: Higher			
Actual: 356 ft.			

CA FID UST:

Facility ID:	19054663
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	425 S MAIN ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported

METOR RAIL (Continued) **S101586970**

Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 7831
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

A13 **ADELANTE EASTSIDE** **FINDS** **1012233698**
100 BROADWAY S **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 8 of 15 in cluster A

Relative: Higher
Actual: 300 ft.

FINDS:

Registry ID: 110039532459

Environmental Interest/Information System
US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES)
is an federal online database for Brownfields Grantees to
electronically submit data directly to EPA.

E14 **WEBSTER CAREER COLLEGE** **CA FID UST** **S101584463**
222 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 1 of 11 in cluster E

Relative: Higher
Actual: 315 ft.

CA FID UST:
Facility ID: 19011640
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2136878534
Mail To: Not reported
Mailing Address: 222 S HILL ST

WEBSTER CAREER COLLEGE (Continued) **S101584463**

Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 4386
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

E15 **CURRENT OCCUPANT** **CA FID UST** **S101583289**
240 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 2 of 11 in cluster E

Relative:
Higher

Actual:
316 ft.

CA FID UST:
Facility ID: 19003277
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: 240 S HILL ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 5505
Number: Not reported

CURRENT OCCUPANT (Continued) **S101583289**

Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

A16 **BANK OF AMERICA** **HAZNET** **S110369447**
100 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 9 of 15 in cluster A

Relative:
Higher

Actual:
300 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002641419
Contact:	ANNE HUFINGTON
Telephone:	5626901744
Mailing Name:	Not reported
Mailing Address:	275 VALENCIA AVE
Mailing City,St,Zip:	BREA, CA 928236340
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

A17 **LOS ANGELES STATE OFFICE BUILD** **HIST UST** **U001560524**
107 S BROADWAY STE 1007 **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 10 of 15 in cluster A

Relative:
Higher

Actual:
299 ft.

HIST UST:

Region:	STATE
Facility ID:	00000033915
Facility Type:	Other
Other Type:	OFFICE
Total Tanks:	0002
Contact Name:	MEL GILLIARD,
Telephone:	2136203370
Owner Name:	STATE OF CALIFORNIA
Owner Address:	107 SOUTH BROADWAY, ROOM 1007
Owner City,St,Zip:	LOS ANGELES, CA 90012
Tank Num:	001

LOS ANGELES STATE OFFICE BUILD (Continued) **U001560524**

Container Num: (1)
Year Installed: 1959
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 002
Container Num: (2)
Year Installed: 1982
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

C18 **OFFICE OF FLEET ADMINISTRATION** **CA FID UST** **S101629303**
122 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 3 of 11 in cluster C

Relative: Higher

Actual: 326 ft.

CA FID UST:
Facility ID: 19023961
Regulated By: UTNKA
Regulated ID: 00041494
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 8186204450
Mail To: Not reported
Mailing Address: 1416 10TH ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

C19 **FREEMAN H V** **EDR Historical Auto Stations** **1009079540**
101 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 11 in cluster C

Relative: Higher

Actual: 328 ft.

EDR Historical Auto Stations:
Name: FREEMAN H V
Year: 1929
Type: GASOLINE AND OIL SERVICE STATION

Name: FREEMAN H V
Year: 1933
Type: GASOLINE AND OIL SERVICE STATIONS

E20 **< 1/8** **1 ft.**	**ART MONJARAS** **222 SOUTH HILL STREET** **LOS ANGELES, CA 90012**	**HAZNET**	**S103642919** **N/A**

Site 3 of 11 in cluster E

Relative:
Higher

Actual:
315 ft.

HAZNET:

Year:	1994
Gepaid:	CAC000919200
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	200 SOUTH HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	TRC957100891
TSD County:	0
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.2107
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000919200
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	200 SOUTH HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.2107
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000919200
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	200 SOUTH HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.8428
Facility County:	Los Angeles

D21 **WALT DISNEY CONCERT HALL** **LOS ANGELES CO. HMS** **U003065066**
111 S GRAND AVE **N/A**
< 1/8 **LOS ANGELIS, CA**
1 ft.

Site 2 of 6 in cluster D

Relative:
Higher

Actual:
393 ft.

LOS ANGELES CO. HMS:

Region:	LA
Facility Id:	016764-I16814
Facility Type:	Not reported
Facility Status:	OPEN
Area:	3F
Permit Number:	Not reported
Permit Status:	Not reported

E22 **CURRENT OCCUPANT** **CA FID UST** **S101587844**
208 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 4 of 11 in cluster E

Relative:
Higher

Actual:
312 ft.

CA FID UST:

Facility ID:	19056058
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	208 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	5504
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

F23 **BASSANO JEWELRY LLC** **HAZNET** **S111082803**
448 S HILL ST STE 905 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 1 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000315584
Contact:	RAFI OHANES
Telephone:	2138920888
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 905
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Not reported
TSD EPA ID:	CAD008364432
TSD County:	Not reported
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.0165
Facility County:	Los Angeles

G24 **700 SOUTH FLOWER LLC** **HAZNET** **S109936050**
700 S FLOWER ST STE 1100 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 25 in cluster G

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000334972
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.045
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000334972
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1375
Facility County:	Los Angeles

700 SOUTH FLOWER LLC (Continued) **S109936050**

Year:	2010
Gepaid:	CAL000334972
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Not reported
TSD EPA ID:	CAD009007626
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000334972
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1125
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAL000334972
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.8
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

G25	**HOPE & FLOWER LLC** **700 SOUTH FLOWER** **LOS ANGELES, CA 90017**	**HAZNET**	**S103959426** **N/A**
< 1/8 **1 ft.**			

Site 2 of 25 in cluster G

Relative:
Higher

Actual:
274 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000170386
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 SOUTH FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	6.74
Facility County:	Los Angeles

Year:	2004
Gepaid:	CAL000170386
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 SOUTH FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	0.84
Facility County:	Not reported

Year:	2003
Gepaid:	CAL000170386
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 SOUTH FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.58
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000170386
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 SOUTH FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900170000

HOPE & FLOWER LLC (Continued) **S103959426**

Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 0.72
Facility County: Los Angeles

Year: 2003
Gepaid: CAL000170386
Contact: JEFF JORGENSEN
Telephone: 2136242891
Mailing Name: Not reported
Mailing Address: 700 SOUTH FLOWER ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 0.04
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
22 additional CA_HAZNET: record(s) in the EDR Site Report.

H26 **SOUTHERN CA GAS CO** **WDS** **S106571301**
320 W 4TH STREET SUITE 200 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 1 of 13 in cluster H

Relative:
Higher

Actual:
278 ft.

CA WDS:
Facility ID: 4 19L900013
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000005 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 4
Facility Telephone: 2132445815
Facility Contact: Nancy Ngugi
Agency Name: SOUTHERN CA CAS CO RIGHT OF WA
Agency Address: 555 W 5th St # GT16G3
Agency City,St,Zip: Los Angeles 90013
Agency Contact: Karen W Wong
Agency Telephone: 2132445812
Agency Type: ?
SIC Code: 0
SIC Code 2: Not reported
Primary Waste: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported

SOUTHERN CA GAS CO (Continued) **S106571301**

POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

H27 **LOS ANGELES REGION** **NPDES** **S106447016**
320 W 4TH ST STE 200 **WDS** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 2 of 13 in cluster H

Relative:
Higher

Actual:
278 ft.

NPDES:

Npdes Number:	Not reported
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	293557
Order No:	Not reported
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19L900013
Program Type:	Linear Tier1
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/23/2004
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	10/07/2009
Discharge Name:	Southern California Cas Co Right of Way
Discharge Address:	555 W 5th St # GT16G3
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90013

CA WDS:

Facility ID:	4 19L900006
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000005 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	Not reported
Facility Contact:	Not reported
Agency Name:	LOS ANGELES AIR FORCE
Agency Address:	2420 Vela Way
Agency City,St,Zip:	El Segundo 90245
Agency Contact:	Craig Groman
Agency Telephone:	3103630874

LOS ANGELES REGION (Continued) **S106447016**

Agency Type:	?
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

I28 **TAG-IT PACIFIC** **HAZNET** **S103990267**
320 SOUTH HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90037**
1 ft.

Site 1 of 3 in cluster I

Relative: Higher

Actual: 295 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000188581
Contact:	COLIN DYNE\\ CEO
Telephone:	2132349606
Mailing Name:	Not reported
Mailing Address:	320 SOUTH HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900370000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0035
Facility County:	Los Angeles

J29 **ANN TAYLOR S0404/7TH & FIGUEROA** **HAZNET** **S109928917**
735 S FIGUEROA SPACE 311 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 14 in cluster J

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002629422
Contact:	STEVEN ROOT/X121

ANN TAYLOR S0404/7TH & FIGUEROA (Continued) **S109928917**

Telephone:	2127516300
Mailing Name:	CHAINSTAR USA
Mailing Address:	200 VARICK ST
Mailing City,St,Zip:	NEW YORK, NY 10014
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.05
Facility County:	Los Angeles

H30 **BROADWAY STATE OFFICE BLDG** — **RCRA-NonGen** **1001195474**
320 W FOURTH ST — **FINDS** **CAR000020545**
< 1/8 **LOS ANGELES, CA 90013** — **HAZNET**
1 ft.

Site 3 of 13 in cluster H

Relative: Higher

Actual: 278 ft.

RCRA-NonGen:

Date form received by agency:	10/09/2007
Facility name:	BROADWAY STATE OFFICE BLDG
Facility address:	320 W 4TH ST LOS ANGELES, CA 90013
EPA ID:	CAR000020545
Mailing address:	70 W 36TH ST STE 605 NEW YORK, NY 10018
Contact:	LAURA DIGIOVANNI
Contact address:	70 W 36TH ST STE 605 NEW YORK, NY 10018
Contact country:	US
Contact telephone:	212-629-0690
Contact email:	Not reported
EPA Region:	09
Land type:	Other land type
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	LA STATE BLDG AUTHORITY
Owner/operator address:	300 S SPRING ST LOS ANGELES, CA 90012
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 897-2241
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No

BROADWAY STATE OFFICE BLDG (Continued) **1001195474**

Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	06/18/1997
Facility name:	BROADWAY STATE OFFICE BLDG
Classification:	Small Quantity Generator
Violation Status:	No violations found

Evaluation Action Summary:

Evaluation date:	03/15/2000
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	EPA

FINDS:

Registry ID: 110002917906

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1999
Gepaid:	CAR000020545
Contact:	LA STATE BLDG AUTHORITY
Telephone:	2138972241
Mailing Name:	Not reported
Mailing Address:	320 W FOURTH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	0.16
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAR000020545
Contact:	LA STATE BLDG AUTHORITY
Telephone:	2138972241

BROADWAY STATE OFFICE BLDG (Continued) **1001195474**

Mailing Name: Not reported
Mailing Address: 320 W FOURTH ST
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAL000027741
TSD County: 5
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Injection Well
Tons: 4.2140
Facility County: Los Angeles

Year: 1998
Gepaid: CAR000020545
Contact: LA STATE BLDG AUTHORITY
Telephone: 2138972241
Mailing Name: Not reported
Mailing Address: 320 W FOURTH ST
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Transfer Station
Tons: 2.2935
Facility County: Los Angeles

Year: 1998
Gepaid: CAR000020545
Contact: LA STATE BLDG AUTHORITY
Telephone: 2138972241
Mailing Name: Not reported
Mailing Address: 320 W FOURTH ST
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Tons: .0000
Facility County: Los Angeles

Year: 1998
Gepaid: CAR000020545
Contact: LA STATE BLDG AUTHORITY
Telephone: 2138972241
Mailing Name: Not reported
Mailing Address: 320 W FOURTH ST
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Not reported
Tons: .9174
Facility County: Los Angeles

BROADWAY STATE OFFICE BLDG (Continued) **1001195474**

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

G31 **HOPE & FLOWER B P PARTNERSHIP** **EMI** **S106832702**
700 S FLOWER ST, SUITE 406 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 3 of 25 in cluster G

Relative: Higher

Actual: 274 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	64881
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

E32 **GROSS A M** **EDR Historical Cleaners** **1009194152**
256 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 11 in cluster E

Relative: Higher

Actual: 309 ft.

EDR Historical Cleaners:

Name:	GROSS A M
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

I33 **AVERILL MORGAN CO** **EDR Historical Cleaners** **1009188754**
354 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 3 in cluster I

Relative: Higher

Actual: 288 ft.

EDR Historical Cleaners:

Name:	AVERILL MORGAN CO
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

G34 **700 SOUTH FLOWER PLAZA** **HAZNET** **S108196370**
700 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 4 of 25 in cluster G

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000293794
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900174113
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.1
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAL000293794
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.33
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAL000293794
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	4.21
Facility County:	Not reported

F35 | **PERSHING PROPERTIES LIMITED, D** | **HAZNET** | **S103951918**
448 SOUTH HILL ST | **EMI** | **N/A**
< 1/8 | **LOS ANGELES, CA 90013**
1 ft.

Site 2 of 26 in cluster F

Relative:
Higher

Actual:
276 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000143118
Contact:	BARKEV MESSERLIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 718
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Unspecified solvent mixture
Disposal Method:	Not reported
Tons:	.2210
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	58178
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

K36 | **SIEROTY COMPANY** | **HAZNET** | **S104569080**
323 W 5TH ST | **N/A**
< 1/8 | **LOS ANGELES, CA 90013**
1 ft.

Site 1 of 18 in cluster K

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	1999
Gepaid:	CAC001491640
Contact:	ALAN SIEROTY
Telephone:	3239316022
Mailing Name:	Not reported
Mailing Address:	6022 WILSHIRE BLVD STE 201
Mailing City,St,Zip:	LOS ANGELES, CA 900360000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill

SIEROTY COMPANY (Continued) **S104569080**

Tons:	21.07
Facility County:	Los Angeles

K37
< 1/8
1 ft.

SHANK-OHBAYASHI
520 S HILL ST
LOS ANGELES, CA 90013

CA FID UST
SWEEPS UST

S101584162
N/A

Site 2 of 18 in cluster K

Relative:
Higher

Actual:
273 ft.

CA FID UST:

Facility ID:	19009126
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	520 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6601
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

K38 **JUDY SOBEL** **HAZNET** **S103972833**
317-319 WEST 5TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 3 of 18 in cluster K

Relative: Higher

Actual: 272 ft.

HAZNET:

Year:	1997
Gepaid:	CAC001242424
Contact:	JUDY SOBEL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1540 WEST BRIGHTWOOD
Mailing City,St,Zip:	MONTEREY PARK, CA 917540000
Gen County:	Los Angeles
TSD EPA ID:	CAL000027741
TSD County:	5
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	9.6079
Facility County:	Los Angeles

F39 **ARMS JEWELRY** **HAZNET** **S102822947**
448 SOUTH HILL STRET **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 3 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000130782
Contact:	ARMEN NADZHARYAN
Telephone:	8185481939
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 610
Mailing City,St,Zip:	LOS ANGELES, CA 900131133
Gen County:	Los Angeles
TSD EPA ID:	CAL922955281
TSD County:	Santa Clara
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0417
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000130782
Contact:	ARMEN NADZHARYAN
Telephone:	8185481939
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 610
Mailing City,St,Zip:	LOS ANGELES, CA 900131133
Gen County:	Los Angeles
TSD EPA ID:	CAL922955228
TSD County:	0
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1625
Facility County:	Los Angeles

Year:	1997

ARMS JEWELRY (Continued) **S102822947**

Gepaid: CAL000130782
Contact: ARMEN NADZHARYAN
Telephone: 8185481939
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 610
Mailing City,St,Zip: LOS ANGELES, CA 900131133
Gen County: Los Angeles
TSD EPA ID: CAL922955281
TSD County: Santa Clara
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2000
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000130782
Contact: ARMEN NADZHARYAN
Telephone: 8185481939
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 610
Mailing City,St,Zip: LOS ANGELES, CA 900131133
Gen County: Los Angeles
TSD EPA ID: CAL922955228
TSD County: 0
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .0417
Facility County: Los Angeles

Year: 1996
Gepaid: CAL000130782
Contact: ARMEN NADZHARYAN
Telephone: 8185481939
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 610
Mailing City,St,Zip: LOS ANGELES, CA 900131133
Gen County: Los Angeles
TSD EPA ID: CAL922955281
TSD County: Santa Clara
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .1875
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

G40 **MCI CENTER** **HAZNET** **S108213557**
700 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 5 of 25 in cluster G

Relative: **Higher**
Actual: **274 ft.**

HAZNET:
Year: 2005
Gepaid: CAL000280263
Contact: JEFF JORGENSEN
Telephone: 2136242891

MCI CENTER (Continued) **S108213557**

Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900174101
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	19.38
Facility County:	Not reported

J41 **MULTI CAMERA PHOTO LAB INC** **HAZNET** **S103978653**
735 SOUTH FIGUEROA ST STE 229 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 2 of 14 in cluster J

Relative:
Higher

Actual:
274 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000112480
Contact:	MULTI CAMERA PHOTO LAB INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	735 S FIGUEROA ST STE 229
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0035
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000112480
Contact:	MULTI CAMERA PHOTO LAB INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	735 S FIGUEROA ST STE 229
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0030
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000112480
Contact:	MULTI CAMERA PHOTO LAB INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	735 S FIGUEROA ST STE 229
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern

MULTI CAMERA PHOTO LAB INC (Continued) **S103978653**

Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0417
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000112480
Contact: MULTI CAMERA PHOTO LAB INC
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 735 S FIGUEROA ST STE 229
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: .0085
Facility County: Los Angeles

F42 **UNIQUE TIME SERVICE** **RCRA-SQG** **1000350607**
448 S HILL ST #408 **FINDS** **CAD981376858**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 4 of 26 in cluster F

Relative:
Higher

Actual:
276 ft.

RCRA-SQG:
Date form received by agency: 01/30/1986
Facility name: UNIQUE TIME SERVICE
Facility address: 448 S HILL ST #408
LOS ANGELES, CA 90013
EPA ID: CAD981376858
Contact: ENVIRONMENTAL MANAGER
Contact address: 448 S HILL ST #FOURTH HUNDRED
LOS ANGELES, CA 90013
Contact country: US
Contact telephone: (213) 485-8309
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

UNIQUE TIME SERVICE (Continued) **1000350607**

Owner/operator name:	SPINOSA RODOLFO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002686157

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

L43 **GRAND CENTRAL SQ. LTD.** **HAZNET** **S103651382**
306 W. 3RD STREET **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 1 of 10 in cluster L

Relative:
Higher

Actual:
289 ft.

HAZNET:

Year:	1995
Gepaid:	CAC000919088
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	C/O YELLIN COMPANY
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	AZD983481813

GRAND CENTRAL SQ. LTD. (Continued) **S103651382**

TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 1.6856
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000919088
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: C/O YELLIN COMPANY
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD067786749
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 1.6856
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000919088
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: C/O YELLIN COMPANY
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: AZD983481813
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 6.7424
Facility County: Los Angeles

Year: 1994
Gepaid: CAC000919088
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: C/O YELLIN COMPANY
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD067786749
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 8.4280
Facility County: Los Angeles

Year: 1994
Gepaid: CAC000919088
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: C/O YELLIN COMPANY

GRAND CENTRAL SQ. LTD. (Continued) **S103651382**

Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD067786749
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 24.4412
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

F44 **MIDAL JEWELERS** **HAZNET** **S109933011**
448 HILL ST, #1301 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 5 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

HAZNET:
Year: 2008
Gepaid: CAL000138684
Contact: ARMEN DALYAN
Telephone: 2136141829
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 710
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: CAD981696420
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 5.0874
Facility County: Los Angeles

K45 **BOB CISNEROS JEWERLY MFG** **RCRA-SQG** **1000106978**
315 W 5TH ST #708A **FINDS** **CAD981368210**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 4 of 18 in cluster K

Relative: Higher

Actual: 272 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: BOB CISNEROS JEWERLY MFG
Facility address: 315 W 5TH ST #708A
LOS ANGELES, CA 90013
EPA ID: CAD981368210
Mailing address: W FIFTH ST #708A
LOS ANGELES, CA 90013
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09

BOB CISNEROS JEWERLY MFG (Continued) **1000106978**

Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: BOB CISNEROS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002682455

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

BOB CISNEROS JEWERLY MFG (Continued) **1000106978**

corrective action activities required under RCRA.

H46 **NEWBERRY 1 HOUR PHOTO** **HAZNET** **S103659999**
445 SOUTH BRAODWAY BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 4 of 13 in cluster H

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	1993
Gepaid:	CAL930505976
Contact:	ANNA SH CHOI
Telephone:	2136884937
Mailing Name:	Not reported
Mailing Address:	445 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900131102
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.6463
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL930505976
Contact:	ANNA SH CHOI
Telephone:	2136884937
Mailing Name:	Not reported
Mailing Address:	445 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900131102
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1250
Facility County:	Los Angeles

K47 **ALVIN I SOLOMON CO** **RCRA-SQG** **1000255308**
315 W 5TH ST RM 704 **FINDS** **CAD981376288**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 5 of 18 in cluster K

Relative: Higher

Actual: 272 ft.

RCRA-SQG:

Date form received by agency:	01/31/1986
Facility name:	ALVIN I SOLOMON CO
Facility address:	315 W 5TH ST RM 704
	LOS ANGELES, CA 90013
EPA ID:	CAD981376288
Mailing address:	W FIFTH ST RM 704
	LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	315 W FIFTH ST RM 704

ALVIN I SOLOMON CO (Continued) **1000255308**

	LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 485-0611
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	A&Z SOLOMON
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002685906

Environmental Interest/Information System

ALVIN I SOLOMON CO (Continued) **1000255308**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

K48 **449 SOUTH BROADWAY LLC** **HAZNET** **S109928872**
315 W 5TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 6 of 18 in cluster K

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002629332
Contact:	MR BAINIS
Telephone:	8187350971
Mailing Name:	MGR
Mailing Address:	15001 S FIGUEROA ST
Mailing City,St,Zip:	GARDENA, CA 90248
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	46.8
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002629332
Contact:	MR BAINIS
Telephone:	8187350971
Mailing Name:	MGR
Mailing Address:	15001 S FIGUEROA ST
Mailing City,St,Zip:	GARDENA, CA 90248
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	22.4
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002629332
Contact:	MR BAINIS
Telephone:	8187350971
Mailing Name:	MGR
Mailing Address:	15001 S FIGUEROA ST
Mailing City,St,Zip:	GARDENA, CA 90248
Gen County:	Los Angeles
TSD EPA ID:	CAD000900762
TSD County:	Not reported
Waste Category:	Asbestos containing waste

449 SOUTH BROADWAY LLC (Continued) **S109928872**

Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	31.6
Facility County:	Los Angeles

F49 **GUY F ATKINSON CONSTRUCTION CO** **EMI** **S106832197**
448 S HILL ST., STE 206 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 6 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	64503
Air District Name:	SC
SIC Code:	5
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

F50 **SAKS STYLING** **RCRA-SQG** **1000905411**
448 S HILL ST STE 510 **FINDS** **CA0000603324**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 7 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

RCRA-SQG:

Date form received by agency:	08/22/1994
Facility name:	SAKS STYLING
Facility address:	448 S HILL ST STE 510 LOS ANGELES, CA 90013
EPA ID:	CA0000603324
Mailing address:	S HILL ST STE 510 LOS ANGELES, CA 90013
Contact:	SARKIS ANDREASIAN
Contact address:	448 S HILL ST STE 510 LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 689-9067
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

SAKS STYLING (Continued) **1000905411**

Owner/Operator Summary:

Owner/operator name:	SARKIS ANDREASIAN
Owner/operator address:	448 S HILL STE 510 LOS ANGELES, CA 90013
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 689-9067
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002619293

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

G51 **METROLINK** **HAZNET** **S106086770**
700 S FLOWER ST 26 FLOOR **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 6 of 25 in cluster G

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002550902
Contact:	tracy berge
Telephone:	2134520241
Mailing Name:	Not reported
Mailing Address:	700 s flower st 26 floor
Mailing City,St,Zip:	LOS ANGELES, CA 90017

METROLINK (Continued) **S106086770**

Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Not reported
Waste Category: Paint sludge
Disposal Method: Recycler
Tons: 0.24
Facility County: Not reported

Year: 2002
Gepaid: CAC002550902
Contact: tracy berge
Telephone: 2134520241
Mailing Name: Not reported
Mailing Address: 700 s flower st 26 floor
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Recycler
Tons: Not reported
Facility County: Not reported

J52	**PLAZA ONE HOUR PHOTO**	**RCRA-SQG**	**1000442947**
	735 SO FIGUEROA SUITE 129	**FINDS**	**CAD981673783**
< 1/8	**LOS ANGELES, CA 90017**		
1 ft.			

Site 3 of 14 in cluster J

Relative: **Higher**

Actual: **274 ft.**

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: PLAZA ONE HOUR PHOTO
Facility address: 735 SO FIGUEROA SUITE 129
LOS ANGELES, CA 90017
EPA ID: CAD981673783
Mailing address: SO FIGUEROA SUITE 129
LOS ANGELES, CA 90017
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212

PLAZA ONE HOUR PHOTO (Continued) **1000442947**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: K JUNG KIM
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002745904

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

H53 **KARTIS MAX** **EDR Historical Cleaners** **1009188154**
321 W 4TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 13 in cluster H

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:
Name: KARTIS MAX
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

K54	**SPRINT COMMUNICATIONS**	**HAZNET**	**S103946566**
	312 WEST 5TH STREET		**N/A**
< 1/8	**LOS ANGELES, CA 90013**		
1 ft.			
	Site 7 of 18 in cluster K		

Relative: **Higher**

Actual: **272 ft.**

HAZNET:

Year:	1995
Gepaid:	CAC000729616
Contact:	SPRINT COMMUNICATIONS INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1850 GATEWAY DRIVE
Mailing City,St,Zip:	SAN MATEO, CA 944040000
Gen County:	Los Angeles
TSD EPA ID:	L
TSD County:	0
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Not reported
Tons:	10.8420
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000729616
Contact:	SPRINT COMMUNICATIONS INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1850 GATEWAY DRIVE
Mailing City,St,Zip:	SAN MATEO, CA 944040000
Gen County:	Los Angeles
TSD EPA ID:	CAT080011059
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	10.8420
Facility County:	Los Angeles

K55	**LADT LLC**	**CA FID UST**	**S101587995**
	312 W 5TH ST	**SWEEPS UST**	**N/A**
< 1/8	**LOS ANGELES, CA 90013**	**HAZNET**	
1 ft.		**EMI**	
	Site 8 of 18 in cluster K		

Relative: **Higher**

Actual: **272 ft.**

CA FID UST:

Facility ID:	19056227
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	312 W 5TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported

LADT LLC (Continued) **S101587995**

Status: Active

SWEEPS UST:
Status: Not reported
Comp Number: 6434
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

HAZNET:
Year: 2002
Gepaid: CAC002551009
Contact: Barry Shy
Telephone: 8185940061
Mailing Name: Not reported
Mailing Address: 4371 Winnetka Ave
Mailing City,St,Zip: Woodland Hills, CA 91364
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 4.21
Facility County: Not reported

Year: 2002
Gepaid: CAC002555489
Contact: BERRY SHY
Telephone: 8185940061
Mailing Name: Not reported
Mailing Address: 4371 WINNETKA AVE
Mailing City,St,Zip: WOODLAND HILLS, CA 91364
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 29.49
Facility County: Not reported

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 72230

LADT LLC (Continued) **S101587995**

Air District Name:	SC
SIC Code:	4813
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	72230
Air District Name:	SC
SIC Code:	4813
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

K56 **LOS ANGELES T.O.C. "LAA"** **HIST UST** **U001593925**
312 W 5TH ST **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 94010**
1 ft.

Site 9 of 18 in cluster K

Relative:
Higher

Actual:
272 ft.

HIST UST:

Region:	STATE
Facility ID:	00000067206
Facility Type:	Other
Other Type:	TELECOMMUNICATION
Total Tanks:	0001
Contact Name:	GEORGE SAYEGH
Telephone:	2136129729
Owner Name:	G T E SPRINT
Owner Address:	1 ADRIAN CT, P.O. BOX 974
Owner City,St,Zip:	BURLINGAME, CA 94010

Tank Num:	001
Container Num:	ST-1
Year Installed:	1984
Tank Capacity:	00004000
Tank Used for:	WASTE
Type of Fuel:	4
Tank Construction:	/4 2 gauge
Leak Detection:	Sensor Instrument

LOS ANGELES T.O.C. "LAA" (Continued) **U001593925**

HAZNET:

Year:	2000
Gepaid:	CAC002286753
Contact:	5TH & BROADWAY PARTNERSHIP
Telephone:	2136801230
Mailing Name:	Not reported
Mailing Address:	837 TRACTION AVE STE 400
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	5.8996
Facility County:	Los Angeles

F57 **S. CALIF. RAPID TRANSIT DISTRI** **CA FID UST** **S101586793**
440 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 8 of 26 in cluster F

Relative:
Higher

Actual:
277 ft.

CA FID UST:

Facility ID:	19054471
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132372135
Mail To:	Not reported
Mailing Address:	440 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	5862
Number:	Not reported
Board Of Equalization:	44-013232
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-005862-000001
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN

S. CALIF. RAPID TRANSIT DISTRI (Continued) **S101586793**

Number Of Tanks: 1

F58 **GARUN JEWELRY MANUFACTURING, INC** **RCRA-SQG** **1000426370**
448 SOUTH HILL STREET #1115 **FINDS** **CAD981380264**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 9 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

RCRA-SQG:

Date form received by agency:	02/04/1986
Facility name:	GARUN JEWELRY MANUFACTURING, INC
Facility address:	448 SOUTH HILL STREET #1115 LOS ANGELES, CA 90013
EPA ID:	CAD981380264
Mailing address:	SOUTH HILL STREET #1115 LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	448 SOUTH HILL STREET #1115 LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 627-5979
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PERSHING PROPERTY, LTD
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No

GARUN JEWELRY MANUFACTURING, INC (Continued) **1000426370**

Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002687469

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

H59 **STATE OF CALIFORNIA DEPT OF GENERAL SERVICES** **HAZNET** **S108755721**
320 W 4TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 6 of 13 in cluster H

Relative: Higher

Actual: 278 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002605568
Contact:	CHARLES WELLINGTON/CHIEF ENG
Telephone:	2135766277
Mailing Name:	Not reported
Mailing Address:	320 W 4TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Latex waste
Disposal Method:	Recycler
Tons:	1
Facility County:	Los Angeles

F60 **CYANIDE** **HAZNET** **S100859816**
448 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.
Site 10 of 26 in cluster F

Relative: Higher
Actual: 276 ft.

HAZNET:

Year:	1993
Gepaid:	CAL000111150
Contact:	CYNIDE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST
Mailing City,St,Zip:	CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

K61 **FINERMAN A** **EDR Historical Cleaners** **1009190468**
313 W 5TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.
Site 10 of 18 in cluster K

Relative: Higher
Actual: 272 ft.

EDR Historical Cleaners:

Name:	FINERMAN A
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

G62 **KENNEDY WILSON** **HAZNET** **S104570456**
818 S. 7TH STE 980 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.
Site 7 of 25 in cluster G

Relative: Higher
Actual: 275 ft.

HAZNET:

Year:	1999
Gepaid:	CAC002137937
Contact:	ERIC VENDIR
Telephone:	2136235800
Mailing Name:	Not reported
Mailing Address:	818 S. 7TH STE 980
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	0.2293
Facility County:	Los Angeles

G63 **PARKING CONCEPTS INCORPORATED** **SWEEPS UST** **S106930500**
725 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 8 of 25 in cluster G

Relative: Higher

Actual: 270 ft.

SWEEPS UST:

Status:	Not reported
Comp Number:	3666
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

J64 **BROWNS DYE WORKS** **EDR Historical Cleaners** **1009187462**
738 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 14 in cluster J

Relative: Higher

Actual: 272 ft.

EDR Historical Cleaners:

Name:	BROWNS DYE WORKS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

G65 **PRISM PHOTO LAB** **HAZNET** **S102822615**
750 WEST 7TH ST, GARDEN LEVEL **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 9 of 25 in cluster G

Relative: Higher

Actual: 272 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000128383
Contact:	HASSAN S TABRIZI
Telephone:	2136294000
Mailing Name:	Not reported
Mailing Address:	750 W SEVENTH ST GARDEN LEVEL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	3.3596
Facility County:	Los Angeles
Year:	1997

PRISM PHOTO LAB (Continued) **S102822615**

Gepaid:	CAL000128383
Contact:	HASSAN S TABRIZI
Telephone:	2136294000
Mailing Name:	Not reported
Mailing Address:	750 W SEVENTH ST GARDEN LEVEL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	3.2923
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000128383
Contact:	HASSAN S TABRIZI
Telephone:	2136294000
Mailing Name:	Not reported
Mailing Address:	750 W SEVENTH ST GARDEN LEVEL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.0625
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000128383
Contact:	HASSAN S TABRIZI
Telephone:	2136294000
Mailing Name:	Not reported
Mailing Address:	750 W SEVENTH ST GARDEN LEVEL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	1.2791
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000128383
Contact:	HASSAN S TABRIZI
Telephone:	2136294000
Mailing Name:	Not reported
Mailing Address:	750 W SEVENTH ST GARDEN LEVEL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1250

PRISM PHOTO LAB (Continued) **S102822615**

Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

F66 **AVE JEWELRY INC** **HAZNET** **S103951477**
448 SOUTH HILL ST #917 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 11 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000143952
Contact:	ANAID MELKONIAN OFFICER
Telephone:	2134880097
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 917
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Los Angeles
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	0.54
Facility County:	Los Angeles

Year:	2002
Gepaid:	CAL000143952
Contact:	ANAID MELKONIAN
Telephone:	2134880097
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 917
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	0.63
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000143952
Contact:	ANAID MELKONIAN
Telephone:	2134880097
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 917
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Orange
Waste Category:	Not reported
Disposal Method:	Transfer Station
Tons:	Not reported
Facility County:	Not reported

Year: 2001

AVE JEWELRY INC (Continued) **S103951477**

Gepaid:	CAL000143952
Contact:	ANAID MELKONIAN
Telephone:	2134880097
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 917
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Fresno
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	0.1
Facility County:	Not reported

Year:	2001
Gepaid:	CAL000143952
Contact:	ANAID MELKONIAN
Telephone:	2134880097
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 917
Mailing City,St,Zip:	LOS ANGELES, CA 900131136
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	0.97
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
6 additional CA_HAZNET: record(s) in the EDR Site Report.

F67 **FIFTH & HILL CENTER** **HAZNET** **S103964313**
448 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 12 of 26 in cluster F

Relative: Higher

Actual: 276 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000126673
Contact:	FIFTH & HILL PARTNERS
Telephone:	2134891588
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	MAD128422870
TSD County:	0
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	10.0000
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000126673
Contact:	FIFTH & HILL PARTNERS
Telephone:	2134891588

FIFTH & HILL CENTER (Continued) **S103964313**

Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: MAD128422870
TSD County: 0
Waste Category: Other inorganic solid waste
Disposal Method: Not reported
Tons: 8.5000
Facility County: Los Angeles

Year: 1994
Gepaid: CAL000126673
Contact: FIFTH & HILL PARTNERS
Telephone: 2134891588
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: .7000
Facility County: Los Angeles

Year: 1993
Gepaid: CAL000126673
Contact: FIFTH & HILL PARTNERS
Telephone: 2134891588
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 5.5000
Facility County: Los Angeles

Year: 1993
Gepaid: CAL000126673
Contact: FIFTH & HILL PARTNERS
Telephone: 2134891588
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Not reported
Disposal Method: Disposal, Other
Tons: .0000
Facility County: Los Angeles

FIFTH & HILL CENTER (Continued) **S103964313**

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

H68 **LIPTON HARRY** **EDR Historical Cleaners** **1009189885**
327 W 4TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 7 of 13 in cluster H

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:

Name:	LIPTON HARRY
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

H69 **GROSS BENJ** **EDR Historical Cleaners** **1009188913**
326 W 4TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 8 of 13 in cluster H

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:

Name:	DANDY PRESSING PA LOR INC
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	HIATT G R
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	GROSS BENJ
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	OLODOST JOS
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

J70 **ESTHETIC DENTISTRY DENTAL GROUP** **HAZNET** **S111082507**
735 S FIGUEROA ST STE 205 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 5 of 14 in cluster J

Relative:
Higher

Actual:
274 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000292239
Contact:	MELANIE CLARK OM
Telephone:	2135534535
Mailing Name:	Not reported
Mailing Address:	735 S FIGUEROA ST STE 205
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Not reported
TSD EPA ID:	CAD008364432
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution

ESTHETIC DENTISTRY DENTAL GROUP (Continued) **S111082507**

Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0042
Facility County: Los Angeles

J71 **777 TOWER** **CA FID UST** **S101588273**
777 S FIGUEROA ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **HAZNET**
1 ft. **EMI**

Site 6 of 14 in cluster J

Relative:
Higher

Actual:
262 ft.

CA FID UST:
Facility ID: 19056517
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2139557100
Mail To: Not reported
Mailing Address: 725 S FIGUEROA ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900170000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: A
Comp Number: 7589
Number: 9
Board Of Equalization: Not reported
Ref Date: 04-20-88
Act Date: 03-31-92
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

HAZNET:
Year: 2009
Gepaid: CAC002642797
Contact: DUANE TROOP
Telephone: 2134340324
Mailing Name: Not reported
Mailing Address: PO BOX 681450
Mailing City,St,Zip: CHARLOTTE, NC 282160026
Gen County: Los Angeles

777 TOWER (Continued) **S101588273**

TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Latex waste
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.4
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002642797
Contact:	DUANE TROOP
Telephone:	2134340324
Mailing Name:	Not reported
Mailing Address:	PO BOX 681450
Mailing City,St,Zip:	CHARLOTTE, NC 282160026
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.03
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	75797
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

J72 **KIRKLAND & ELLIS LLP** **HAZNET** **S109428043**
777 S FIGUEROA ST STE 3700 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 7 of 14 in cluster J

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002613346
Contact:	SEN SAUCEDO/FAC MGR
Telephone:	2136808433
Mailing Name:	Not reported
Mailing Address:	777 S FIGUEROA ST STE 3700
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles

KIRKLAND & ELLIS LLP (Continued) **S109428043**

TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.19
Facility County:	Los Angeles

J73 **777 TOWER** **UST** **U003780080**
777 S FIGUEROA ST STE 4050 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 8 of 14 in cluster J

Relative:
Higher

Actual:
262 ft.

UST:

Facility ID:	23553
Latitude:	34.04836
Longitude:	-118.26086

G74 **ROSEVELT LOFT LLC** **HAZNET** **S109431017**
727 W FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 10 of 25 in cluster G

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002617781
Contact:	CALVIN HALL
Telephone:	2134031460
Mailing Name:	Not reported
Mailing Address:	660 S FIGUEROA ST STE 2400
Mailing City,St,Zip:	LOS ANGELES, CA 900173453
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.05
Facility County:	Los Angeles

E75 **GEO TECHNOLOGYS INC** **HAZNET** **S108207731**
250 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.

Site 6 of 11 in cluster E

Relative:
Higher

Actual:
312 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002598477
Contact:	HARRY CAO
Telephone:	8189688571
Mailing Name:	Not reported
Mailing Address:	439 WESTERN AVE
Mailing City,St,Zip:	GLENDALE, CA 912012837

GEO TECHNOLOGYS INC (Continued) **S108207731**

Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	0.83
Facility County:	Not reported

H76 **LIPTON HARRY** — **EDR Historical Cleaners** — **1009188334** **N/A**
329 W 4TH ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 9 of 13 in cluster H

Relative: Higher

Actual: 278 ft.

EDR Historical Cleaners:

Name:	ABRAHAM BEDROSIAN MUNISHIAN
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	LIPTON HARRY
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

H77 **LOS ANGELES STATE BUILDING AUTHORTIY** — **HAZNET** — **S103975416** **N/A**
320 WEST 4TH ST
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 10 of 13 in cluster H

Relative: Higher

Actual: 278 ft.

HAZNET:

Year:	1997
Gepaid:	CAC001066168
Contact:	LOS ANGELES STATE BUILD AUTHOR
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	400 R STREET STE 5100
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Los Angeles
TSD EPA ID:	CAD089446710
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	Los Angeles
Year:	1997
Gepaid:	CAC001066168
Contact:	LOS ANGELES STATE BUILD AUTHOR
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	400 R STREET STE 5100
Mailing City,St,Zip:	SACRAMENTO, CA 958140000
Gen County:	Los Angeles
TSD EPA ID:	CAD089446710
TSD County:	Los Angeles
Waste Category:	Empty containers less than 30 gallons

LOS ANGELES STATE BUILDING AUTHORTIY (Continued) **S103975416**

Disposal Method: Transfer Station
Tons: .1250
Facility County: Los Angeles

Year: 1997
Gepaid: CAC001066168
Contact: LOS ANGELES STATE BUILD AUTHOR
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 400 R STREET STE 5100
Mailing City,St,Zip: SACRAMENTO, CA 958140000
Gen County: Los Angeles
TSD EPA ID: CAD089446710
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: .8131
Facility County: Los Angeles

F78 **PERSHING SQUARE BUILDINGS** **HAZNET** **S108752943**
448 S HILL ST STE 406 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 13 of 26 in cluster F

Relative:
Higher

Actual:
276 ft.

HAZNET:
Year: 2007
Gepaid: CAC002600900
Contact: MALOU JARDIANEL-PROPERTY SUPERVISOR
Telephone: 2136222929
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900131131
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

Year: 2006
Gepaid: CAC002600900
Contact: MALOU JARDIANEL-PROPERTY SUPERVISOR
Telephone: 2136222929
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900131131
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 12.64
Facility County: Los Angeles

G79 **BROADWAY PLAZA** **RCRA-SQG** **1000145755**
700 S FLOWER ST SUTIE 406 **FINDS** **CAD982323826**
< 1/8 **LOS ANGELES, CA 90017** **HAZNET**
1 ft. **EMI**

Site 11 of 25 in cluster G

Relative: **Higher**

Actual: **274 ft.**

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	BROADWAY PLAZA
Facility address:	700 S FLOWER ST SUTIE 406 LOS ANGELES, CA 90017
EPA ID:	CAD982323826
Mailing address:	700 S FLOWER ST SUITE 406 LOS ANGELES, CA 90017
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	HOPE&FLOWER B P PTNR SHIP
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

BROADWAY PLAZA (Continued) **1000145755**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	02/12/1988
Facility name:	BROADWAY PLAZA
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002794600

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	2010
Gepaid:	CAC002645853
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900174106
Gen County:	Not reported
TSD EPA ID:	CAD088504881
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.195
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002645853
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900174106
Gen County:	Not reported
TSD EPA ID:	CAD088504881
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

BROADWAY PLAZA (Continued) **1000145755**

	(H010-H129) Or (H131-H135)
Tons:	0.33
Facility County:	Los Angeles
Year:	2003
Gepaid:	CAC002565425
Contact:	JEFF JORGENSEN
Telephone:	2136242891
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	5.89
Facility County:	Los Angeles
Year:	1998
Gepaid:	CAC001246520
Contact:	CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	700 SO FLOWER ST #406
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	92.9608
Facility County:	Los Angeles
Year:	1997
Gepaid:	CAD982323826
Contact:	CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	700 S FLOWER ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900174106
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Disposal, Other
Tons:	.0750
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	15361

BROADWAY PLAZA (Continued) **1000145755**

Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	6
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	144749
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.4878816514359231347
Reactive Organic Gases Tons/Yr:	.412
Carbon Monoxide Emissions Tons/Yr:	.568
NOX - Oxides of Nitrogen Tons/Yr:	.677
SOX - Oxides of Sulphur Tons/Yr:	.004
Particulate Matter Tons/Yr:	.873
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.6264

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	144749
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.4878816514359231347
Reactive Organic Gases Tons/Yr:	.412
Carbon Monoxide Emissions Tons/Yr:	.568
NOX - Oxides of Nitrogen Tons/Yr:	.677
SOX - Oxides of Sulphur Tons/Yr:	.004
Particulate Matter Tons/Yr:	.873
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.6264

F80 **JMF ENTERPRISES IV LLC** **CA FID UST** **S101584727**
448 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013** **HAZNET**
1 ft.

Site 14 of 26 in cluster F

Relative:
Higher

Actual:
276 ft.

CA FID UST:

Facility ID:	19014918
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported

JMF ENTERPRISES IV LLC (Continued) **S101584727**

SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	448 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	6399
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2008
Gepaid:	CAC002629084
Contact:	ROBERT MCCUMSEY
Telephone:	3104209629
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002629084
Contact:	ROBERT MCCUMSEY
Telephone:	3104209629
Mailing Name:	Not reported
Mailing Address:	448 S HILL ST STE 406
Mailing City,St,Zip:	LOS ANGELES, CA 900130000

JMF ENTERPRISES IV LLC (Continued) **S101584727**

Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8428
Facility County: Los Angeles

Year: 2008
Gepaid: CAC002636888
Contact: ROBERT MCCUMSEY
Telephone: 3104209629
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

Year: 2008
Gepaid: CAC002629084
Contact: ROBERT MCCUMSEY
Telephone: 3104209629
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.15
Facility County: Los Angeles

Year: 2008
Gepaid: CAC002629084
Contact: ROBERT MCCUMSEY
Telephone: 3104209629
Mailing Name: Not reported
Mailing Address: 448 S HILL ST STE 406
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 6
Facility County: Los Angeles

JMF ENTERPRISES IV LLC (Continued) **S101584727**

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

M81 **ERNS** **92280232**
404 W. 7TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 56 in cluster M

Relative:
Higher

Click this hyperlink while viewing on your computer to access
additional ERNS detail in the EDR Site Report.

Actual:
262 ft.

N82 **SCURA SALVATORE** **EDR Historical Cleaners** **1009189406**
803 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 15 in cluster N

Relative:
Higher

Actual:
261 ft.

EDR Historical Cleaners:
Name: SCURA SALVATORE
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

O83 **HABIT THE** **EDR Historical Cleaners** **1009188776**
637 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 17 in cluster O

Relative:
Higher

Actual:
261 ft.

EDR Historical Cleaners:
Name: HABIT THE
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

G84 **FLOWER STREET CORPORATION** **HAZNET** **S108207001**
741 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 12 of 25 in cluster G

Relative:
Higher

Actual:
268 ft.

HAZNET:
Year: 2004
Gepaid: CAC002573517
Contact: DOTTIE JENSEN
Telephone: 6269317086
Mailing Name: Not reported
Mailing Address: 100 S VINCENT ST STE 500
Mailing City,St,Zip: WEST COLVINA, CA 91790
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Not reported
Tons: 4.17

FLOWER STREET CORPORATION (Continued) **S108207001**

Facility County: Not reported

P85 **ASK GOLD INC** **FINDS** **1007459544**
716 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 1 of 15 in cluster P

Relative: **Higher**
Actual: **264 ft.**

FINDS:

Registry ID: 110017780301

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Q86 **SFRE ASSET INC** **HAZNET** **S103671515**
757 S FLOWER STREET **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 2 in cluster Q

Relative: **Higher**
Actual: **267 ft.**

HAZNET:
Year: 1996
Gepaid: CAC001138880
Contact: SFRE ASSET INC
Telephone: 2138954146
Mailing Name: Not reported
Mailing Address: 611 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 1.3761
Facility County: Los Angeles

R87 **HOCHMAN ISIDORE** **EDR Historical Cleaners** **1009191252**
829 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 13 in cluster R

Relative: **Lower**
Actual: **254 ft.**

EDR Historical Cleaners:
Name: HOCHMAN ISIDORE
Year: 1937
Type: LAUNDRIES HAND

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

S88 **AMERICAN DYE WORKS** — **EDR Historical Cleaners** — **1009188744** / **N/A**
321 W 6TH ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 1 of 79 in cluster S

Relative: Higher
Actual: 262 ft.

EDR Historical Cleaners:

Name:	AMERICAN DYE WORKS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

R89 **MANI BROTHERS LLC** — **HAZNET** — **S109428705** / **N/A**
801 S FIGUEROA ST STE 1000
LOS ANGELES, CA 90017

< 1/8
1 ft.

Site 2 of 13 in cluster R

Relative: Higher
Actual: 257 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002615817
Contact:	JESSIE MEDINA
Telephone:	2134300500
Mailing Name:	Not reported
Mailing Address:	801 S FIGUEROA ST STE 1000
Mailing City,St,Zip:	LOS ANGELES, CA 900175508
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.39
Facility County:	Los Angeles

N90 **SHOFFNER A M** — **EDR Historical Auto Stations** — **1009081275** / **N/A**
844 S FLOWER ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 2 of 15 in cluster N

Relative: Higher
Actual: 258 ft.

EDR Historical Auto Stations:

Name:	SHOFFNER A M
Year:	1937
Type:	AUTOMOBILE REPAIRING

O91 **WALTERS SAML** — **EDR Historical Cleaners** — **1009191235** / **N/A**
810 S HOPE ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 2 of 17 in cluster O

Relative: Higher
Actual: 260 ft.

EDR Historical Cleaners:

Name:	WALTERS SAML
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

M92 **KARADOLIAN JEWELRY MFG CO** **EMI** **S106833711**
650 S HILL STREET #418 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	59071
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Q93 **CENTURY PARKING INCORPORATED** **CA FID UST** **S101583595**
757 S FLOWER ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 2 of 2 in cluster Q

Relative: Higher

Actual: 267 ft.

CA FID UST:

Facility ID:	19004800
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	757 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	3992
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported

CENTURY PARKING INCORPORATED (Continued) **S101583595**

Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

M94 **YERMA JEWELRY** **EMI** **S106842813**
650 S HILL STREET, # 910 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	58849
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

T95 **MANUFACTURERS LIFE INSURANCE** **UST** **U003780081**
865 S FIGUEROA ST STE 2300 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 13 in cluster T

Relative: Higher

Actual: 255 ft.

UST:

Facility ID:	23554
Latitude:	34.04664
Longitude:	-118.26242

M96 **G & A JEWELRY MFG** **HAZNET** **S107145784**
640 S HILL ST STE 647 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 4 of 56 in cluster M

Relative: Higher

Actual: 265 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000093554
Contact:	GRIGOR BLIKIAN/OWNER
Telephone:	2136239265
Mailing Name:	Not reported

G & A JEWELRY MFG (Continued) **S107145784**

Mailing Address:	712 S OLIVE ST #407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAL000098454
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.02
Facility County:	Los Angeles

S97 **MARS** **EMI** **S106835189**
314 W 6TH STREET #402 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 79 in cluster S

Relative: Higher

Actual: 265 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57558
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

U98 **GIP 7TH ST LLC** **HAZNET** **S108747875**
725 GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 1 of 21 in cluster U

Relative: Higher

Actual: 266 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002609131
Contact:	IAN SLAGLE
Telephone:	2136880963
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST STE 510
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.025
Facility County:	Los Angeles

GIP 7TH ST LLC (Continued) **S108747875**

Year:	2007
Gepaid:	CAC002609131
Contact:	IAN SLAGLE
Telephone:	2136880963
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST STE 510
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.49
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002609131
Contact:	IAN SLAGLE
Telephone:	2136880963
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST STE 510
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Waste oil and mixed oil
Disposal Method:	H06
Tons:	0.06
Facility County:	Los Angeles

V99 **RUDDER OBRIEN** **EDR Historical Cleaners** **1009187564**
744 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 5 in cluster V

Relative:
Higher

Actual:
265 ft.

EDR Historical Cleaners:

Name:	RUDDER OBRIEN
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

Name:	RUDDER OBRIEN
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

N100 **KUTSUMA M** **EDR Historical Cleaners** **1009186866**
726 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 15 in cluster N

Relative:
Higher

Actual:
262 ft.

EDR Historical Cleaners:

Name:	KUTSUMA M
Year:	1924
Type:	LAUNDRIES ORIENTAL

O101 **BUSBY MYERS** — **EDR Historical Auto Stations** — **1009077568** / **N/A**
610 W 8TH ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 17 in cluster O

Relative: Higher
Actual: 260 ft.

EDR Historical Auto Stations:

Name:	BUSBY MYERS
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS
Name:	TRIANGLE SERVICE STATION
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION

G102 **WESTERN UNION TELEGRAPH CO** — **CA FID UST**, **SWEEPS UST** — **S101587552** / **N/A**
745 S FLOWER ST
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 13 of 25 in cluster G

Relative: Higher
Actual: 268 ft.

CA FID UST:

Facility ID:	19055752
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	745 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	4329
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

R103 **DE GRAZIA BERNARD** **EDR Historical Cleaners** **1009190855**
823 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 13 in cluster R

Relative: Higher

Actual: 258 ft.

EDR Historical Cleaners:

Name:	DE GRAZIA BERNARD
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	FOGELMAN ABR
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

N104 **FLOWER STREET** **HIST UST** **U001560712**
844 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 4 of 15 in cluster N

Relative: Higher

Actual: 258 ft.

HIST UST:

Region:	STATE
Facility ID:	00000007518
Facility Type:	Other
Other Type:	PUBLIC UTILITY
Total Tanks:	0005
Contact Name:	TAMAYO, LYLE
Telephone:	2136892095
Owner Name:	SOUTHERN CALIF. GAS COMPANY
Owner Address:	BOX 3249 TERMINAL ANNEX
Owner City,St,Zip:	LOS ANGELES, CA 90051

Tank Num:	001
Container Num:	HFSU100
Year Installed:	1977
Tank Capacity:	00030000
Tank Used for:	PRODUCT
Type of Fuel:	4
Tank Construction:	.375 inches
Leak Detection:	None

Tank Num:	002
Container Num:	HFSU101
Year Installed:	Not reported
Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	1
Tank Construction:	.25 inches
Leak Detection:	Stock Inventor

Tank Num:	003
Container Num:	HFSU102
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	WASTE
Type of Fuel:	0
Tank Construction:	6 inches
Leak Detection:	None

FLOWER STREET (Continued) **U001560712**

Tank Num:	004
Container Num:	HFSU103
Year Installed:	Not reported
Tank Capacity:	00000500
Tank Used for:	WASTE
Type of Fuel:	5
Tank Construction:	12. gauge
Leak Detection:	None

Tank Num:	005
Container Num:	HFSU105
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	WASTE
Type of Fuel:	0
Tank Construction:	6 inches
Leak Detection:	Stock Inventor

M105 **CROWN GEM JEWELERS** **HAZNET** **S103959207**
650 S HILL ST SUITE #610 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 5 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000024287
Contact:	L A UNITED INVESTMENT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	650 S HILL ST SUITE #610
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD070148432
TSD County:	1
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.0417
Facility County:	Los Angeles

V106 **THIRD CHURCH OF CHRIST SCIENTIST OF LA** **HAZNET** **S104566186**
730 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 2 of 5 in cluster V

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1999
Gepaid:	CAC001317472
Contact:	THIRD CHURCH OF CHRIST SCI
Telephone:	2136232185
Mailing Name:	Not reported
Mailing Address:	730 S HOPE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900173808
Gen County:	Los Angeles
TSD EPA ID:	AZD983481813

THIRD CHURCH OF CHRIST SCIENTIST OF LA (Continued) **S104566186**

TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.735
Facility County: Los Angeles

M107 **DANIEL & SON ASSAYERS, INC** **HAZNET** **S108204380**
640 S HILL ST STE 558 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 6 of 56 in cluster M

Relative: Higher

Actual: 265 ft.

HAZNET:

Year: 2010
Gepaid: CAL000255994
Contact: GARY DAGHLERIAN/PRES
Telephone: 2136245678
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 558
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Not reported
TSD EPA ID: CAD003963592
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 0.638
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000255994
Contact: GARY DAGHLERIAN/PRES
Telephone: 2136245678
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 558
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: CAD003963592
TSD County: Santa Clara
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 1.05
Facility County: Los Angeles

Year: 2006
Gepaid: CAL000255994
Contact: GARY DAGHLERIAN/PRES
Telephone: 2136245678
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 558
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: CAD003963592
TSD County: Santa Clara
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: 0.5
Facility County: Los Angeles

DANIEL & SON ASSAYERS, INC (Continued) **S108204380**

Year:	2005
Gepaid:	CAL000255994
Contact:	GARY DAGHLERIAN/PRES
Telephone:	2136245678
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 558
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD003963592
TSD County:	Santa Clara
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	0.62
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000255994
Contact:	GARY DAGHLERIAN/PRES
Telephone:	2136245678
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 558
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD003963592
TSD County:	Santa Clara
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	0.62
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

W108 **L & R AUTO PARTS** **HAZNET** **S108749914**
925 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 5 in cluster W

Relative:
Lower

Actual:
253 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002600655
Contact:	HARRY P
Telephone:	2136293263
Mailing Name:	Not reported
Mailing Address:	600 S SPRING ST STE 1700
Mailing City,St,Zip:	LOS ANGELES, CA 900141963
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	33.71
Facility County:	Los Angeles

P109 | **SOLICO INC** | **HAZNET** | **S103988442**
712 SOUTH OLIVE STREET,STE 620 | **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000127948
Contact:	JOSEPH, MOUSSA, & JOUBIN
Telephone:	2136241699
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 620
Mailing City,St,Zip:	LOS ANGELES, CA 900142627
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.1000
Facility County:	Los Angeles

P110 | **A S K GOLD COMPANY** | **HAZNET** | **S103948260**
712 SOUTH OLIVE STREET | **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

HAZNET:

Year:	2001
Gepaid:	CAL000125014
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	2.75
Facility County:	Not reported

Year:	1999
Gepaid:	CAL000125014
Contact:	A S K GOLD COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Not reported
Tons:	0
Facility County:	Los Angeles

A S K GOLD COMPANY (Continued) **S103948260**

Year:	1999
Gepaid:	CAL000125014
Contact:	A S K GOLD COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000125014
Contact:	A S K GOLD COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	2.6440
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000125014
Contact:	A S K GOLD COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	2.6030
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

M111 **< 1/8** **1 ft.**	**GOLDEN SCOPE INC** **650 S HILL ST #827** **LOS ANGELES, CA 90014**	**RCRA-SQG** **FINDS**	**1000186949** **CAD981969280**

Site 7 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	05/21/1987
Facility name:	GOLDEN SCOPE INC
Facility address:	650 S HILL ST #827 LOS ANGELES, CA 90014
EPA ID:	CAD981969280
Mailing address:	S HILL ST #827 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	650 S HILL ST #827 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 629-4893
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PANOSSIAN JOHN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

GOLDEN SCOPE INC (Continued) **1000186949**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002759550

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S112 **SARKIS CREATIONS** **HAZNET** **S103652046**
314 WEST 6TH ST,#602 & 603 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 79 in cluster S

Relative: Higher

Actual: 265 ft.

HAZNET:
Year: 1997
Gepaid: CAL000177154
Contact: SARKIS SULTANIAN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 314 W 6TH ST STE 602
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD009466392
TSD County: 7
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Recycler
Tons: 1.0000
Facility County: Los Angeles

M113 **LOS ANGELES UNITED INVEST CO** **RCRA-SQG** **1000102159**
650 S HILL ST **FINDS** **CAD982522344**
< 1/8 **LOS ANGELES, CA 90014** **LA Co. Site Mitigation**
1 ft. **HAZNET**

Site 8 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: LOS ANGELES UNITED INVEST CO
Facility address: 650 S HILL ST
LOS ANGELES, CA 90014
EPA ID: CAD982522344

LOS ANGELES UNITED INVEST CO (Continued) **1000102159**

Mailing address:	S HILL ST LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	LAUIC
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency: 09/01/1996

LOS ANGELES UNITED INVEST CO (Continued) **1000102159**

Facility name: LOS ANGELES UNITED INVEST CO
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110009547598

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

LA Co. Site Mitigation:
Facility ID: Not reported
Site ID: SD0000373
Case ID: RO0001374
Abated: Yes
Assigned To: Richard Clark
Entered Date: 10/05/2011
Abated Date: Not reported

HAZNET:
Year: 2007
Gepaid: CAD982522344
Contact: SIMON ACILACOGLU
Telephone: 2136292124
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Laboratory waste chemicals
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.31
Facility County: Los Angeles

Year: 2007
Gepaid: CAD982522344
Contact: SIMON ACILACOGLU
Telephone: 2136292124
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect

LOS ANGELES UNITED INVEST CO (Continued) **1000102159**

Tons: 1.25
Facility County: Los Angeles

Year: 2007
Gepaid: CAD982522344
Contact: SIMON ACILACOGLU
Telephone: 2136292124
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Unspecified aqueous solution
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.27
Facility County: Los Angeles

Year: 2007
Gepaid: CAD982522344
Contact: SIMON ACILACOGLU
Telephone: 2136292124
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Unspecified aqueous solution
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.06
Facility County: Los Angeles

Year: 2007
Gepaid: CAD982522344
Contact: SIMON ACILACOGLU
Telephone: 2136292124
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.01
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
19 additional CA_HAZNET: record(s) in the EDR Site Report.

X114 **550 SOUTH HILL STREET LLC** — **HAZNET**, **EMI** — **S106838666** / **N/A**

550 S HILL ST
LOS ANGELES, CA 90013

< 1/8
1 ft.

Site 1 of 5 in cluster X

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000266767
Contact:	JENNIFER PORTER/PROP MGR
Telephone:	2136243201
Mailing Name:	JENNIFER PORTER/PROP MGR
Mailing Address:	550 S HILL ST STE 500
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	0
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	46186
Air District Name:	SC
SIC Code:	5
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

X115 **1X CAPITOL S CAPITOL B PARTNERS** — **HAZNET** — **S103664601** / **N/A**

550 SO HILL ST
LOS ANGELES, CA 90013

< 1/8
1 ft.

Site 2 of 5 in cluster X

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	1994
Gepaid:	CAX000126425
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	550 SO HILL ST#600
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill

1X CAPITOL S CAPITOL B PARTNERS (Continued) **S103664601**

Tons: 1.2000
Facility County: Los Angeles

Year: 1993
Gepaid: CAX000126425
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 550 SO HILL ST#600
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Treatment, Tank
Tons: 2.2000
Facility County: Los Angeles

O116 **STUMMEL C J** **EDR Historical Cleaners** **1009189815**
635 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 17 in cluster O

Relative:
Higher

Actual:
261 ft.

EDR Historical Cleaners:
Name: STUMMEL C J
Year: 1929
Type: CLOTHES PRESSERS CLEANERS AND REPAIRERS

Name: HABIT DRY CLEANERS
Year: 1929
Type: CLEANERS AND DYERS

Name: BLACK R L
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: LEVENTHAL LOUIS
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

T117 **UNION BANK OF CALIFORNIA** **HAZNET** **S107144405**
845 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 2 of 13 in cluster T

Relative:
Higher

Actual:
256 ft.

HAZNET:
Year: 2004
Gepaid: CAC002572891
Contact: DON GREGOROFF/ENG
Telephone: 2139725425
Mailing Name: Not reported
Mailing Address: 845 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172515
Gen County: Los Angeles

UNION BANK OF CALIFORNIA (Continued) **S107144405**

TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Tons: 0.22
Facility County: Not reported

Year: 2003
Gepaid: CAC002572891
Contact: DON GREGOROFF/ENG
Telephone: 2139725425
Mailing Name: Not reported
Mailing Address: 845 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172515
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Aqueous solution with metals (< restricted levels and (Alkaline solution (pH >= 12.5) with metals))
Disposal Method: Treatment, Tank
Tons: 0.14
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002572891
Contact: DON GREGOROFF/ENG
Telephone: 2139725425
Mailing Name: Not reported
Mailing Address: 845 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172515
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Transfer Station
Tons: 0.14
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002572891
Contact: DON GREGOROFF/ENG
Telephone: 2139725425
Mailing Name: Not reported
Mailing Address: 845 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172515
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Treatment, Tank
Tons: 0.22
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002572891
Contact: DON GREGOROFF/ENG
Telephone: 2139725425

UNION BANK OF CALIFORNIA (Continued) **S107144405**

Mailing Name:	Not reported
Mailing Address:	845 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900172515
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Treatment, Tank
Tons:	0.02
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

P118 **JEWELS BY JACKING INC** **RCRA-SQG** **1000205413**
712 S OLIVE #311 **FINDS** **CAD982337958**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 4 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

RCRA-SQG:

Date form received by agency:	12/09/1987
Facility name:	JEWELS BY JACKING INC
Facility address:	712 S OLIVE #311 LOS ANGELES, CA 90014
EPA ID:	CAD982337958
Contact:	ENVIRONMENTAL MANAGER
Contact address:	712 S OLIVE #311 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 689-9802
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	JACK BAGHADLAIN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

JEWELS BY JACKING INC (Continued) **1000205413**

Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002796369

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

T119 **MANUFACTURERS LIFE INSURANCE**
865 S FIGUEROA ST
< 1/8 **LOS ANGELES, CA 90018**
1 ft.

SWEEPS UST **S106835076**
HAZNET **N/A**
EMI

Site 3 of 13 in cluster T

Relative:
Higher

Actual:
255 ft.

SWEEPS UST:

Status:	A
Comp Number:	6227
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported

MANUFACTURERS LIFE INSURANCE (Continued) **S106835076**

Number Of Tanks: Not reported

HAZNET:

Year: 2009
Gepaid: CAL000342250
Contact: TOM PHILIPS
Telephone: 2139555817
Mailing Name: Not reported
Mailing Address: 865 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172543
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.1
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000342250
Contact: TOM PHILIPS
Telephone: 2139555817
Mailing Name: Not reported
Mailing Address: 865 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172543
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Organic solids with halogens
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.175
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000342250
Contact: TOM PHILIPS
Telephone: 2139555817
Mailing Name: Not reported
Mailing Address: 865 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900172543
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Liquids with pH <= 2
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.3
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000342250
Contact: TOM PHILIPS
Telephone: 2139555817
Mailing Name: Not reported
Mailing Address: 865 S FIGUEROA ST

MANUFACTURERS LIFE INSURANCE (Continued) **S106835076**

Mailing City,St,Zip:	LOS ANGELES, CA 900172543
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.1
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	33
Air Basin:	SC
Facility ID:	77254
Air District Name:	SC
SIC Code:	6311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

P120 **A S K GOLD COMPANY** **HAZNET** **S109422601**
716 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 5 of 15 in cluster P

Relative:
Higher

Actual:
264 ft.

HAZNET:

Year:	2010
Gepaid:	CAR000152942
Contact:	SARKIS ASHIKIAN
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Not reported
TSD EPA ID:	AZD081705402
TSD County:	Not reported
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.175
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000205571
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 S OLIVE ST

A S K GOLD COMPANY (Continued) **S109422601**

Mailing City,St,Zip:	LOS ANGELES, CA 900142602
Gen County:	Los Angeles
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.22935
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000205571
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900142602
Gen County:	Los Angeles
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.22935
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000205571
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900142602
Gen County:	Los Angeles
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.22
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000205571
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900142602
Gen County:	Los Angeles
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.52
Facility County:	Los Angeles

A S K GOLD COMPANY (Continued) **S109422601**

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

Y121	**EDMONDS C W** **901 S FLOWER ST**	**EDR Historical Auto Stations**	**1009078487** **N/A**
< 1/8 **1 ft.**	**LOS ANGELES, CA**		

Site 1 of 7 in cluster Y

Relative: **Lower**

Actual: **254 ft.**

EDR Historical Auto Stations:

Name:	EDMONDS C W
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS

O122	**TREPTOW DEVELOPMENT CO** **801 S GRAND AVE**	**CA FID UST** **SWEEPS UST**	**S101588016** **N/A**
< 1/8 **1 ft.**	**LOS ANGELES, CA 90017**	**HAZNET**	

Site 5 of 17 in cluster O

Relative: **Higher**

Actual: **260 ft.**

CA FID UST:

Facility ID:	19056248
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	801 S GRAND AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6482
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

TREPTOW DEVELOPMENT CO (Continued) **S101588016**

HAZNET:

Year:	2002
Gepaid:	CAL000197085
Contact:	ERIC NICHOLS/BUILDING ENG
Telephone:	2136299142
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE STE 575
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	0.22
Facility County:	Not reported

O123 **NORTH AMERICA BLDG MGMT CORP** **EMI** **S106836396**
801 S GRAND AVE, SUITE 301 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 6 of 17 in cluster O

Relative:
Higher

Actual:
260 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	69097
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	69097
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M124 **SERVICE STATION 8419** **CA FID UST** **S101617161**
706 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 9 of 56 in cluster M

Relative:
Higher

Actual:
261 ft.

CA FID UST:

Facility ID:	19055356
Regulated By:	UTNKA
Regulated ID:	00007894
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2139776227
Mail To:	Not reported
Mailing Address:	3701 WILSHIRE BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	901
Number:	Not reported
Board Of Equalization:	44-000051
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000901-000001
Actv Date:	Not reported
Capacity:	8000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	2

Status:	Not reported
Comp Number:	901
Number:	Not reported
Board Of Equalization:	44-000051
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000901-000002
Actv Date:	Not reported
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

M125	**PRIME DESIGNS**	**HAZNET**	**S108753269**
	706 S HILL ST STE 1050		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			
	Site 10 of 56 in cluster M		

Relative: **Higher**

Actual: **261 ft.**

HAZNET:

Year:	2006
Gepaid:	CAL000270634
Contact:	VIKEN KASSABIAN
Telephone:	2136277077
Mailing Name:	Not reported
Mailing Address:	706 S HILL ST STE 1050
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	H13
Tons:	0.65
Facility County:	Los Angeles

M126	**SERVICE STATION 8419**	**HIST UST**	**U001560578**
	706 S HILL ST STE 800		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			
	Site 11 of 56 in cluster M		

Relative: **Higher**

Actual: **261 ft.**

HIST UST:

Region:	STATE
Facility ID:	00000007894
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0002
Contact Name:	CENTURAY PARKING INC.
Telephone:	0000000000
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010

Tank Num:	001
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

S127 **< 1/8** **1 ft.**	**OLYMPIA DESIGN** **314 W 6TH ST #424** **LOS ANGELES, CA 90014**	**RCRA-SQG** **FINDS**	**1000302307** **CAD981387277**

Site 4 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	OLYMPIA DESIGN
Facility address:	314 W 6TH ST #424 LOS ANGELES, CA 90014
EPA ID:	CAD981387277
Mailing address:	W SIXTH ST #424 LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HAROUT PATIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

OLYMPIA DESIGN (Continued) **1000302307**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002689840

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

N128 **J P AUTO SERVICE** **EDR Historical Auto Stations** **1009077408**
811 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 15 in cluster N

Relative:
Higher

Actual:
262 ft.

EDR Historical Auto Stations:
Name: J P AUTO SERVICE
Year: 1924
Type: AUTOMOBILE SERVICE STATIONS

Z129 **PEYTON W E** **EDR Historical Auto Stations** **1009079986**
859 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 7 in cluster Z

Relative:
Higher

Actual:
257 ft.

EDR Historical Auto Stations:
Name: WIMMER REED
Year: 1924
Type: AUTOMOBILE SERVICE STATIONS

Name: PEYTON KANE
Year: 1933
Type: GASOLINE AND OIL SERVICE STATIONS

Name: PEYTON W E
Year: 1937
Type: GASOLINE AND OIL SERVICE STATIONS

Name: PEYTON W E
Year: 1942
Type: GASOLINE AND OIL SERVICE STATIONS

S130 **WEST SIX & BROADWAY** **LA Co. Site Mitigation** **S111417819**
314 W 6TH **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 5 of 79 in cluster S

Relative: **Higher**

Actual: **265 ft.**

LA Co. Site Mitigation:

Facility ID:	Not reported
Site ID:	SD0000372
Case ID:	RO0001373
Abated:	Yes
Assigned To:	Richard Clark
Entered Date:	10/05/2011
Abated Date:	Not reported

X131 **BAGUETTE MASTERS** **HAZNET** **S105085305**
550 S HILL ST STE 1226 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 3 of 5 in cluster X

Relative: **Higher**

Actual: **271 ft.**

HAZNET:

Year:	2000
Gepaid:	CAC002242649
Contact:	MOIZ REUBEN
Telephone:	2136276111
Mailing Name:	Not reported
Mailing Address:	550 S HILL ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	67.4240
Facility County:	Los Angeles

AA132 **DURANT R G** **EDR Historical Auto Stations** **1009084367**
857 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 2 in cluster AA

Relative: **Higher**

Actual: **257 ft.**

EDR Historical Auto Stations:

Name:	DURANT R G
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

S133	**GOLD CRAFT JEWELERY CO.**	**EMI**	**S106831837**
	314 W 6TH ST #620		**N/A**
< 1/8	**LOS ANGELES, CA, CA 90014**		
1 ft.			

Site 6 of 79 in cluster S

Relative: **Higher**

Actual: **265 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57392
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57392
Air District Name:	SC
SIC Code:	3299
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

P134	**A S K GOLD COMPANY**	**HAZNET**	**S108196510**
	716 SO OLIVE ST		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			

Site 6 of 15 in cluster P

Relative: **Higher**

Actual: **264 ft.**

HAZNET:

Year:	2006
Gepaid:	CAL000205571
Contact:	SARKIS ASHKIAN GENERAL PARTNER
Telephone:	2136224005
Mailing Name:	Not reported
Mailing Address:	716 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD081705402
TSD County:	99
Waste Category:	Not reported
Disposal Method:	H14

A S K GOLD COMPANY (Continued) **S108196510**

Tons: 0.22
Facility County: Los Angeles

Year: 2005
Gepaid: CAL000205571
Contact: SARKIS ASHKIAN GENERAL PARTNER
Telephone: 2136224005
Mailing Name: Not reported
Mailing Address: 716 SO OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: AZD081705402
TSD County: 99
Waste Category: Not reported
Disposal Method: Treatment, Tank
Tons: 0.27
Facility County: Not reported

Year: 2004
Gepaid: CAL000205571
Contact: SARKIS ASHKIAN GENERAL PARTNER
Telephone: 2136224005
Mailing Name: Not reported
Mailing Address: 716 SO OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: AZD081705402
TSD County: 99
Waste Category: Not reported
Disposal Method: Treatment, Tank
Tons: 0.27
Facility County: Not reported

AB135 **714 S HIT ST INC** **HAZNET** **S108741515**
714 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 1 of 14 in cluster AB

Relative: **Higher**

Actual: **261 ft.**

HAZNET:
Year: 2006
Gepaid: CAC002602282
Contact: MR. MOIEZ BENYAMINOV
Telephone: 2136241335
Mailing Name: Not reported
Mailing Address: 629 S HILL ST STE 1202
Mailing City,St,Zip: LOS ANGELES, CA 900141747
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Tank bottom waste
Disposal Method: Recycler
Tons: 3.75
Facility County: Los Angeles

N136 | **DOT OPS** | **1009646279**
N/A

810 SOUTH FLOWER ST
< 1/8 **LOS ANGELES, CA 90039**
1 ft.

Site 6 of 15 in cluster N

Relative: Higher

Actual: 261 ft.

DOT OPS:

Report ID:	1800541
Facility name:	Not reported
Address:	810 SOUTH FLOWER ST LOS ANGELES, CA 90039
Latitude:	Not reported
Longitude:	Not reported
EDR type:	NATURAL GAS DISTRIBUTION
Cause of incident:	DAMAGE BY OUTSIDE FORCES
Operator code:	18484
Operator name:	SOUTHERN CALIFORNIA GAS CO
Incident address:	810 SOUTH FLOWER ST LOS ANGELES, CA 90039
Incident county:	LOS ANGELES
Incident congressional district:	Not reported
Incident date:	19800605
Detection time:	1400
Stoppage hours:	1
Stoppage minutes:	11
Estimated pressure at incident time:	40.00
Max. allowable operating preassure:	60.00
Part of operation that failed:	SERVICE
Part of operation other comment:	Not reported
Part of system that failed:	FITTING
Part of system other comment:	Not reported
Year oart installed:	1980
Where leak originated:	BASE MATERIAL FRACTURE
Leak other comment:	Not reported
Real nominal pipe diameter:	0.000
Pipe wall thickness (inches):	0.000
Pipe specifications:	Not reported
Pipe grade:	Not reported
Type of repair done:	NO DATA
Type other comment:	Not reported
Length of replaced pipe:	0.00
Component replaced/reconditioned:	REPLACED
Component other comment:	Not reported
Employee fatalities:	0
Employees injured:	0
Non-empl. fatalities:	0
Non-empl. inured:	0
Did a rupture occur:	YES
Did gas ignite:	NO
Did an explosion occur:	NO
Secondary fires/explosions:	NO
Operator property damage:	200
Structure adjacent to leak:	RESIDENTIAL SINGLE-STORY
Structure other comment:	Not reported
Dist. to nearest structure:	75
Underground facility involved:	NO
Underground facility other comment:	Not reported
Any utilities affected:	NO

(Continued) **1009646279**

Dist. of other gas fac. contributing:	0
Dist. of other gas fac. impaired:	0
Dist. of telephone fac. contributing:	0
Dist. of telephone fac. impaired:	0
Dist. of electric fac. contributing:	0
Dist. of electric fac. impaired:	0
Dist. of storm sewer fac. contributing:	0
Dist. of storm sewer fac. impaired:	0
Dist. of other sewer fac. contributing:	0
Dist. of other sewer fac. impaired:	0
Dist. of water fac. contributing:	0
Dist. of water fac. impaired:	0
Dist. of other fac. contributing:	0
Other fac. contributing:	Not reported
Dist. of other fac. impaired:	0
Other facility impaired:	Not reported
Location of leak or failure:	BELOW ROAD (PAVED)
Location other comment:	Not reported
Cover depth:	0
Soil at pipe depth:	SOIL
Soil temperature at soil leak:	060
Report by:	AGENCY CAUSING DAMAGE
Report other comment:	Not reported
Cause of Corrosion:	NO DATA
Cause of Corrosion Other:	Not reported
Coating:	NO DATA
Operator rec prior notification of excavation:	YES
Notification Date:	Not reported
Notification Hr:	0
Was pipeline marked:	NO
Type mark:	ON SITE OBSERVATION
Type mark other:	AND D
Stat Req mark:	YES
damerthmve:	SUBSIDENCE
damerthmo:	Not reported
emcoth:	YES
emcothdesc:	Not reported
causlkcons:	Not reported
steel_clas:	NO DATA
Plastic:	NO DATA
plastreinf:	NO
castiron:	NO DATA
othmat:	Not reported
intialtest:	Not reported
tstmedinit:	NO DATA
tstmedioth:	Not reported
inittstyr:	0
mintstpres:	0.00
tmehldpres:	0
presslkini:	0
subseqtst:	Not reported
tstmedsubs:	NO DATA
tstmsubot:	Not reported
subseqtyr:	0
mintstpsub:	0.00
thpresssub:	0
presslksub:	0

N137	**FLOWER ST.**	**HIST UST**	**U001560711**
	844 S FLOWER ST		**N/A**
< 1/8	**LOS ANGELES, CA 90017**		
1 ft.			
	Site 7 of 15 in cluster N		

Relative: **Higher**

Actual: **258 ft.**

HIST UST:

Region:	STATE
Facility ID:	00000007519
Facility Type:	Other
Other Type:	PUBLIC UTILITY
Total Tanks:	0001
Contact Name:	TAMAYO, LYLE
Telephone:	2136892095
Owner Name:	SOUTHERN CALIF. GAS COMPANY
Owner Address:	BOX 3249 TERMINAL ANNEX
Owner City,St,Zip:	LOS ANGELES, CA 90051

Tank Num:	001
Container Num:	HFSU104
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	1
Tank Construction:	.25 inches
Leak Detection:	Stock Inventor

AC138	**COUNTACH JEWELRY**	**HAZNET**	**S103989253**
	606 SOUTH HILL STREET		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			
	Site 1 of 73 in cluster AC		

Relative: **Higher**

Actual: **266 ft.**

HAZNET:

Year:	2001
Gepaid:	CAL000116505
Contact:	YASAR BAYMUS
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	0.02
Facility County:	Not reported

Year:	2000
Gepaid:	CAL000116495
Contact:	VAROUS KHATCHIKIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST # 208-209
Mailing City,St,Zip:	LOS ANGELES, CA 900141720
Gen County:	Los Angeles
TSD EPA ID:	CAD044003556
TSD County:	Yolo
Waste Category:	Unspecified oil-containing waste

COUNTACH JEWELRY (Continued) **S103989253**

Disposal Method: Transfer Station
Tons: 2.0850
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000116505
Contact: YASAR BAYMUS
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 606 S HILL ST
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: AZD980695332
TSD County: 99
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: Not reported
Tons: .0208
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000116505
Contact: YASAR BAYMUS
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 606 S HILL ST
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: Recycler
Tons: .0500
Facility County: Los Angeles

AC139 **SHIMA PEARL COMPANY INC** **EMI** **S106839321**
607 S HILL #532 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 60264
Air District Name: SC
SIC Code: 3911
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

V140 **ROBERTSON JAS** **EDR Historical Cleaners** **1009190287**
715 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 5 in cluster V

Relative: Higher

Actual: 268 ft.

EDR Historical Cleaners:

Name:	ROBERTSON JAS
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

O141 **BULLOCKS** **RCRA-SQG** **1000698044**
800 S HOPE ST **FINDS** **CAD981444581**
< 1/8 **LOS ANGELES, CA 90017** **CA FID UST**
1 ft. **UST**
Site 7 of 17 in cluster O **SWEEPS UST**
HAZNET

Relative: Higher

Actual: 261 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	BULLOCKS
Facility address:	800 S HOPE ST LOS ANGELES, CA 90017
EPA ID:	CAD981444581
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	FEDERATED DEPT STORE
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

BULLOCKS (Continued) **1000698044**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	05/22/1992
Facility name:	BULLOCKS
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110009536822

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CA FID UST:

Facility ID:	19025559
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	7145791818
Mail To:	Not reported
Mailing Address:	800 S HOPE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

BULLOCKS (Continued) **1000698044**

UST:

Facility ID:	24457
Latitude:	34.0464
Longitude:	-118.25915

SWEEPS UST:

Status:	A
Comp Number:	7384
Number:	1
Board Of Equalization:	Not reported
Ref Date:	08-30-93
Act Date:	03-18-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2008
Gepaid:	CAC002629733
Contact:	VINCE MORRIS
Telephone:	8009874601
Mailing Name:	Not reported
Mailing Address:	800 S HOPE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900174650
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.1815
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002618312
Contact:	TODD HARRIS
Telephone:	9727295671
Mailing Name:	Not reported
Mailing Address:	2400 N GLENVILLE DR
Mailing City,St,Zip:	RICHARDSON, TX 750824354
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.3
Facility County:	Los Angeles

M142 **VVA2 JEWELRY CO** **RCRA-NonGen** **1000141399**
650 S HILL ST #616 **FINDS** **CAD981439185**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 12 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-NonGen:

Date form received by agency:	09/15/1986
Facility name:	VVA2 JEWELRY CO
Facility address:	650 S HILL ST #616 LOS ANGELES, CA 90014
EPA ID:	CAD981439185
Mailing address:	S HILL ST #616 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	650 S HILL ST #616 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-3340
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	VATCHE APOSHIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

VVA2 JEWELRY CO (Continued) **1000141399**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002705332

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M143 **JOHNS EXCHANGE INC** **RCRA-SQG** **1000319171**
650 SOUTH HILL ST NUMBER 710 **CAD981435266**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 13 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: JOHNS EXCHANGE INC
Facility address: 650 SOUTH HILL ST NUMBER 710
LOS ANGELES, CA 90014
EPA ID: CAD981435266
Mailing address: SOUTH HILL ST NUMBER 710
LOS ANGELES, CA 90014
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: OHANES KAZANDJAIN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

JOHNS EXCHANGE INC (Continued) **1000319171**

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

AB144 **N T A INVESTMENTS** **RCRA-SQG** **1006805592**
718 S HILL ST STE 103 **FINDS** **CAR000129668**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 14 in cluster AB

Relative:
Higher

Actual:
261 ft.

RCRA-SQG:
Date form received by agency: 10/25/2002
Facility name: N T A INVESTMENTS
Facility address: 718 S HILL ST STE 103
LOS ANGELES, CA 90014
EPA ID: CAR000129668
Contact: ARMAND NEZARATIAN
Contact address: 718 S HILL ST STE 103
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 623-1387
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: N T A INVESTMENTS
Owner/operator address: NOT REQUIRED

N T A INVESTMENTS (Continued) **1006805592**

NOT REQUIRED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: (999) 999-9999
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110013378852

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AB145 **O D I MOUNTINGS INC** **RCRA-NonGen** **1005415577**
718 S HILL ST NO 303 **FINDS** **CAR000113050**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 14 in cluster AB

Relative: Higher

Actual: 261 ft.

RCRA-NonGen:
Date form received by agency: 03/01/2002
Facility name: O D I MOUNTINGS INC
Facility address: 718 S HILL ST NO 303
LOS ANGELES, CA 90014
EPA ID: CAR000113050
Contact: VARDGES MARKOSYAN

O D I MOUNTINGS INC (Continued) **1005415577**

Contact address:	718 S HILL ST NO 303 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-4755
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ANI MARKOSYAN
Owner/operator address:	1235 SONORA GLENDALE, CA 91201
Owner/operator country:	Not reported
Owner/operator telephone:	(818) 502-1224
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	Yes
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110012230576

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AB146 **LA CREATIONS** **HAZNET** **S109428160**
718 S HILL ST #M103 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 4 of 14 in cluster AB

Relative:
Higher

Actual:
261 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000163066
Contact:	NAZARETH NAZARIAN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	718 S HILL ST STE M103
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	ARD981057870
TSD County:	99
Waste Category:	Paint sludge
Disposal Method:	Not reported
Tons:	Not reported
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000163066
Contact:	NAZARETH NAZARIAN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	718 S HILL ST STE M103
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	ARD981057870
TSD County:	99
Waste Category:	Unspecified sludge waste
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.37
Facility County:	Los Angeles

AB147 **ABA LEGACY PARTNERS LLC** **HAZNET** **S108196612**
718 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 5 of 14 in cluster AB

Relative:
Higher

Actual:
261 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002588061
Contact:	NAJAT
Telephone:	3103969999
Mailing Name:	Not reported
Mailing Address:	2221 LINCOLN BLVD STE 200
Mailing City,St,Zip:	SANTA MONICA, CA 90405
Gen County:	Los Angeles
TSD EPA ID:	WAD991281767
TSD County:	99
Waste Category:	Laboratory waste chemicals
Disposal Method:	Treatment, Incineration
Tons:	0
Facility County:	Not reported

W148	**THE HANOVER CO**	**HAZNET**	**S108222442**
	948 FIGUEROA ST		**N/A**
< 1/8	**LOS ANGELES, CA 90015**		
1 ft.			

Site 2 of 5 in cluster W

Relative: **Lower**

Actual: **252 ft.**

HAZNET:

Year:	2006
Gepaid:	CAC002598949
Contact:	MICHAEL TIFFANY/SUBCONTRACTOR
Telephone:	8053402617
Mailing Name:	Not reported
Mailing Address:	714 OLYMPIC BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	0.83
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAC002598949
Contact:	MICHAEL TIFFANY/SUBCONTRACTOR
Telephone:	8053402617
Mailing Name:	Not reported
Mailing Address:	714 OLYMPIC BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	2.08
Facility County:	Not reported

P149	**S OLIVE PARTNERSHIP**	**RCRA-SQG**	**1000287575**
	712 SOUTH OLIVE ST # 203	**FINDS**	**CAD982505372**
< 1/8	**LOS ANGELES, CA 90014**	**HAZNET**	
1 ft.			

Site 7 of 15 in cluster P

Relative: **Higher**

Actual: **264 ft.**

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	S OLIVE PARTNERSHIP
Facility address:	712 SOUTH OLIVE ST # 203
	LOS ANGELES, CA 90014
EPA ID:	CAD982505372
Mailing address:	SOUTH OLIVE ST # 203
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous

S OLIVE PARTNERSHIP (Continued) **1000287575**

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: BDROS ORUNCAKCIEL
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002835638

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S OLIVE PARTNERSHIP (Continued) **1000287575**

HAZNET:

Year: 2003
Gepaid: CAD982505372
Contact: AYK HIDIRSHAH MANAGER
Telephone: 2136227538
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 203
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Other
Tons: 0.05
Facility County: Los Angeles

Year: 2003
Gepaid: CAD982505372
Contact: AYK HIDIRSHAH MANAGER
Telephone: 2136227538
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 203
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Disposal, Other
Tons: 0.06
Facility County: Los Angeles

Year: 1994
Gepaid: CAD982505372
Contact: S OLIVE PARTNERSHIP
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 203
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD000646117
TSD County: 0
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 10.0000
Facility County: Los Angeles

Year: 1993
Gepaid: CAD982505372
Contact: S OLIVE PARTNERSHIP
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 203
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste

S OLIVE PARTNERSHIP (Continued) **1000287575**

Disposal Method: Disposal, Land Fill
Tons: 6.2500
Facility County: Los Angeles

Year: 1993
Gepaid: CAD982505372
Contact: S OLIVE PARTNERSHIP
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 203
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000647117
TSD County: 0
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 5.0568
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

O150 **YING HING** **EDR Historical Cleaners** **1009190938**
817 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 8 of 17 in cluster O

Relative: Higher

Actual: 259 ft.

EDR Historical Cleaners:
Name: HING YING
Year: 1937
Type: LAUNDRIES CHINESE

Name: YING HING
Year: 1942
Type: LAUNDRIES ORIENTAL

O151 **GOLDBERG ABR** **EDR Historical Cleaners** **1009189064**
802 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 9 of 17 in cluster O

Relative: Higher

Actual: 260 ft.

EDR Historical Cleaners:
Name: COONEN B I
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: GOLDBERG ABR
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

S152 **ERNS** **94415947**
334 WEST 6TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.
Site 7 of 79 in cluster S

Relative:
Higher

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual:
265 ft.

W153 **PHOTO KING** **HAZNET** **S100942404**
951 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90012**
1 ft.
Site 3 of 5 in cluster W

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	1996
Gepaid:	CAL000089579
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	951 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0035
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000089579
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	951 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0045
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000089579
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	951 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0170
Facility County:	Los Angeles

PHOTO KING (Continued) **S100942404**

Year:	1993
Gepaid:	CAL000089579
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	951 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	.0000
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000089579
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	951 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	.0185
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

R154 **SHUWA INVESTMENTS CORP.** **EMI** **S106839350**
800 S FIGUEROA ST. **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 4 of 13 in cluster R

Relative: Higher

Actual: 257 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76171
Air District Name:	SC
SIC Code:	6282
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

T155 **CAMERON E S** — **EDR Historical Cleaners** — **1009187469** **N/A**
722 W 9TH ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 13 in cluster T

Relative: Higher
Actual: 255 ft.

EDR Historical Cleaners:

Name:	CAMERON E S
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

Y156 **ARNO PAUL** — **EDR Historical Auto Stations** — **1009078766** **N/A**
918 S FLOWER ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 7 in cluster Y

Relative: Lower
Actual: 253 ft.

EDR Historical Auto Stations:

Name:	ARNO PAUL
Year:	1933
Type:	AUTOMOBILE REPAIRING

O157 **WELTER SAML** — **EDR Historical Cleaners** — **1009191657** **N/A**
823 S GRAND AVE
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 10 of 17 in cluster O

Relative: Higher
Actual: 259 ft.

EDR Historical Cleaners:

Name:	WELTER SAML
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

AC158 **WESTERN JEWLERY** — **HAZNET** — **S105086329** **N/A**
606 S HILL ST
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 73 in cluster AC

Relative: Higher
Actual: 266 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002277033
Contact:	HILL PARTNERS
Telephone:	2134891588
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST #406
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAL000190080
TSD County:	San Joaquin
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	10.1136
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002277033

WESTERN JEWLERY (Continued) **S105086329**

Contact:	HILL PARTNERS
Telephone:	2134891588
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST #406
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	4.5870
Facility County:	Los Angeles

AB159 **JM MANUFACTURING** **HAZNET** **S103972209**
718 SOUTH HILL STE 501 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 6 of 14 in cluster AB

Relative:
Higher

Actual:
260 ft.

HAZNET:

Year:	1996
Gepaid:	CAL000160591
Contact:	SEISSEL MAHROUKIAN
Telephone:	2136147900
Mailing Name:	Not reported
Mailing Address:	718 S HILL ST STE 501
Mailing City,St,Zip:	LOS ANGELES, CA 900142708
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.3715
Facility County:	Los Angeles

P160 **ASK GOLD INC** **RCRA-SQG** **1007370126**
716 S OLIVE ST **CAR000152942**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 8 of 15 in cluster P

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	04/27/2004
Facility name:	ASK GOLD INC
Facility address:	716 S OLIVE ST LOS ANGELES, CA 90014
EPA ID:	CAR000152942
Contact:	SARKIS ASHIKIAN
Contact address:	716 S OLIVE ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	213-622-4005
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous

ASK GOLD INC (Continued) **1007370126**

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ASK GOLD INC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	06/01/2001
Owner/Op end date:	Not reported

Owner/operator name:	ASK GOLD INC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	06/01/2001
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code: D002

Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D003

Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES

ASK GOLD INC (Continued) **1007370126**

WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

Violation Status: No violations found

AB161 **M AND M HOLDING L L C** **RCRA-SQG** **1006804985**
728 S HILL ST **FINDS** **CAR000119289**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 7 of 14 in cluster AB

Relative:
Higher

Actual:
260 ft.

RCRA-SQG:

Date form received by agency:	06/10/2002
Facility name:	M AND M HOLDING L L C
Facility address:	728 S HILL ST LOS ANGELES, CA 90014
EPA ID:	CAR000119289
Mailing address:	629 S HILL ST NO 1202 LOS ANGELES, CA 90014
Contact:	TERESITA MATHEWS
Contact address:	629 S HILL ST NO 1202 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 624-1335
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	M AND M HOLDING L L C
Owner/operator address:	629 S HILL ST NO 1202 LOS ANGELES, CA 90014
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 624-1335
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

M AND M HOLDING L L C (Continued) **1006804985**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/10/2002
Facility name: M AND M HOLDING L L C
Classification: Small Quantity Generator

Hazardous Waste Summary:
Waste code: F006
Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Violation Status: No violations found

FINDS:

Registry ID: 110013311237

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AB162 **M & M HOLDING, LLC** **HAZNET** **S111084790**
728 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 8 of 14 in cluster AB

Relative: Higher

Actual: 260 ft.

HAZNET:
Year: 2010
Gepaid: CAR000119289
Contact: Teresita Mathews
Telephone: 2136241335
Mailing Name: Not reported
Mailing Address: 629 S Hill St No 1202
Mailing City,St,Zip: Los Angeles, CA 900140000
Gen County: Not reported
TSD EPA ID: CAD009007626
TSD County: Not reported
Waste Category: Asbestos containing waste

M & M HOLDING, LLC (Continued) **S111084790**

Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 2.4
Facility County: Los Angeles

O163 **ERICKSON AARON** **EDR Historical Cleaners** **1009192526**
824 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 11 of 17 in cluster O

Relative: Higher

Actual: 259 ft.

EDR Historical Cleaners:
Name: ERICKSON AARON
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

T164 **SFPP, L.P.** **HAZNET** **1000997713**
888 S FIGUEROA **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 5 of 13 in cluster T

Relative: Lower

Actual: 254 ft.

HAZNET:
Year: 1993
Gepaid: CAL923034232
Contact: SANTA FE PACIFIC PIPELINES,INC
Telephone: 7145604866
Mailing Name: Not reported
Mailing Address: 1100 TOWN & COUNTRY ROAD
Mailing City,St,Zip: ORANGE, CA 928680000
Gen County: Los Angeles
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Not reported
Tons: .1459
Facility County: Los Angeles

Year: 1993
Gepaid: CAL923034232
Contact: SANTA FE PACIFIC PIPELINES,INC
Telephone: 7145604866
Mailing Name: Not reported
Mailing Address: 1100 TOWN & COUNTRY ROAD
Mailing City,St,Zip: ORANGE, CA 928680000
Gen County: Los Angeles
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Recycler
Tons: .1459
Facility County: Los Angeles

AC165	**K AND K JEWELRY INC**	**RCRA-SQG**	**1000309413**
	606 S HILL ST #709	**FINDS**	**CAD981992597**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			

Site 4 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	K AND K JEWELRY INC
Facility address:	606 S HILL ST #709
	LOS ANGELES, CA 90014
EPA ID:	CAD981992597
Mailing address:	S HILL ST #709
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KRIKOR KRIKORIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

K AND K JEWELRY INC (Continued) **1000309413**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002769497

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M166 **DESIGNED BY SCORPIO INC** **RCRA-SQG** **1000252794**
650 S HILL ST. #915 **FINDS** **CAD982405508**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 14 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	04/04/1988
Facility name:	DESIGNED BY SCORPIO INC
Facility address:	650 S HILL ST. #915 LOS ANGELES, CA 90014
EPA ID:	CAD982405508
Mailing address:	S HILL ST. #915 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	650 S HILL ST. #915 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-1125
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KRIKOR YERGANIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

DESIGNED BY SCORPIO INC (Continued) **1000252794**

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002805448

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M167 **UNIQUE PREMIUM METALS INC** **HAZNET** **S107145812**
640 S HILL ST **HWP** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 15 of 56 in cluster M

Relative: **Higher**

Actual: **265 ft.**

HAZNET:
Year: 2010
Gepaid: CAL000098454
Contact: NELSON COLTON
Telephone: 2136229995
Mailing Name: Not reported

UNIQUE PREMIUM METALS INC (Continued) **S107145812**

Mailing Address: 640 S HILL ST STE 743
Mailing City,St,Zip: LOS ANGELES, CA 900144017
Gen County: Not reported
TSD EPA ID: CAD003963592
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 0.6895
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000098454
Contact: NELSON COLTON-PRESIDENT
Telephone: 2136229995
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 743
Mailing City,St,Zip: LOS ANGELES, CA 900144017
Gen County: Los Angeles
TSD EPA ID: FL0000229791
TSD County: Not reported
Waste Category: Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method: Not reported
Tons: 0.544
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000098454
Contact: NELSON COLTON-PRESIDENT
Telephone: 2136229995
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 743
Mailing City,St,Zip: LOS ANGELES, CA 900144017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Not reported
Waste Category: Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method: Not reported
Tons: 0.79
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000098454
Contact: NELSON COLTON-PRESIDENT
Telephone: 2136229995
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 743
Mailing City,St,Zip: LOS ANGELES, CA 900144017
Gen County: Los Angeles
TSD EPA ID: CAD003963592
TSD County: Santa Clara
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 1.51
Facility County: Los Angeles

UNIQUE PREMIUM METALS INC (Continued) **S107145812**

Year:	2006
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743
Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	CAD003963592
TSD County:	Santa Clara
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	0.24
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
8 additional CA_HAZNET: record(s) in the EDR Site Report.

HWP:

EPA Id:	CAL000098454
Latitude:	34.049757
Longitude:	-118.254099
Facility Type:	HAZ WASTE - OPERATING PERMIT
Cleanup Status:	Not reported
Region:	SOUTHERN CALIFORNIA PERMITS AND CORRECTIVE ACTION
Permit Maintenance Lead:	CHERRY PADILLA
Permit Renewal Lead:	Not reported
Corrective Action Lead:	Not reported
Supervisor:	Not reported
Site Code:	301156
Assembly District:	46
Senate District:	22
Public Information Officer:	Not reported
Facility Status:	Unique Premium Metals, Inc. is a precious metal recycler. A new Standardized Hazardous Waste Facility Permit, Series C was issued to Unique Premium Metals, Inc. on April 13, 2006 and became effective on May 23, 2006. The Permit will expire on May 22, 2016. Unique Premium Metals is located in a suite within the St. Vincent Jewelry Center Building, in the downtown Los Angeles Jewelry District. Unique Premium Metals Inc. accepts jewelry polishing dust ("sweeps") from jewelry manufacturers, processes it, and then assays for precious metal content. The sweeps contain precious metals, and are regulated as hazardous waste in California because they are a fine powder containing metals (copper, barium, nickel, zinc, silver) that typically exceed the regulatory levels. The Series C Standardized Permit authorizes Unique Premium Metals to store and treat the jewelry sweeps.
Site History:	Not reported

HWP:

EPA Id:	CAL000098454
Unit Names:	KILN1
Event Description:	Final Determination
Actual Date:	2006-04-13 00:00:00
Doc Comments:	Unique Premium Metals Final Permit
EPA Id:	CAL000098454

UNIQUE PREMIUM METALS INC (Continued) **S107145812**

Unit Names: KILN1
Event Description: Public Notice
Actual Date: 2006-01-30 00:00:00
Doc Comments: Not reported

EPA Id: CAL000098454
Unit Names: KILN1
Event Description: Determined To Be Complete and Technically Adequate
Actual Date: 2005-12-12 00:00:00
Doc Comments: Not reported

EPA Id: CAL000098454
Unit Names: KILN1
Event Description: Part A Received
Actual Date: 2003-12-23 00:00:00
Doc Comments: Not reported

Z168 **MYERS G H** **EDR Historical Auto Stations** **1009083563**
831 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 7 in cluster Z

Relative: Higher
Actual: 259 ft.

EDR Historical Auto Stations:
Name: MYERS G H
Year: 1942
Type: GASOLINE AND OIL SERVICE STATIONS

Y169 **COMMUNITY RE-DEVELOPMENT AGENCY OF THE CITY OF LOS ANGELES** **HAZNET** **S108202944**
645 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 7 in cluster Y

Relative: Lower
Actual: 254 ft.

HAZNET:
Year: 2005
Gepaid: CAC002590886
Contact: DAVID RICCITIELLO
Telephone: 2139771794
Mailing Name: Not reported
Mailing Address: 354 S SPRING ST STE 800
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Contaminated soil from site clean-up
Disposal Method: Disposal, Land Fill
Tons: 15.17
Facility County: Not reported

M170 **CROWN GEM JEWELERS** — **EMI** — **S106829504**
650 SO HILL ST #610 — **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 16 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	58931
Air District Name:	SC
SIC Code:	3299
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S171 **WESTERN MGMT CORP** — **RCRA-SQG** — **1000403049**
314 W SIXTH ST — **FINDS** — **CAD980895320**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 8 of 79 in cluster S

Relative: Higher

Actual: 265 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	WESTERN MGMT CORP
Facility address:	314 W SIXTH ST LOS ANGELES, CA 90014
EPA ID:	CAD980895320
Mailing address:	W SIXTH ST LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

WESTERN MGMT CORP (Continued) **1000403049**

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002676729

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

N172 **MINUTEMAN PRESS** **HAZNET** **S103977825**
821 SOUTH FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 8 of 15 in cluster N

Relative:
Higher

Actual:
260 ft.

HAZNET:
Year: 2000
Gepaid: CAL000128423
Contact: DOUGLAS NESS
Telephone: 2136272604
Mailing Name: Not reported

MINUTEMAN PRESS (Continued) **S103977825**

Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD093459485
TSD County: Fresno
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .0625
Facility County: Los Angeles

Year: 2000
Gepaid: CAL000128423
Contact: DOUGLAS NESS
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .0625
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000128423
Contact: DOUGLAS NESS
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .0625
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000128423
Contact: DOUGLAS NESS
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .1250
Facility County: Los Angeles

Year: 1996
Gepaid: CAL000128423

MINUTEMAN PRESS (Continued) **S103977825**

Contact: DOUGLAS NESS
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .2001
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

P173 **ARAV INC DBA PROGRESSIVE JEWELRY MFG** **HAZNET** **S103950491**
712 S OLIVE ST #408 **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 9 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

HAZNET:
Year: 2001
Gepaid: CAL000148639
Contact: SARKIS BOYADZHYAN
Telephone: 2136273744
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST STE 614
Mailing City,St,Zip: LOS ANGELES, CA 900142627
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Alameda
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 2.81
Facility County: Not reported

Year: 1996
Gepaid: CAL000027990
Contact: SILVA AVEDIAN
Telephone: 3103902762
Mailing Name: Not reported
Mailing Address: 712 S OLIVE ST #219
Mailing City,St,Zip: LOS ANGELES, CA 900142625
Gen County: Los Angeles
TSD EPA ID: CAD099452708
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 4.7955
Facility County: Los Angeles

EMI:
Year: 1990
County Code: 19
Air Basin: SC

ARAV INC DBA PROGRESSIVE JEWELRY MFG (Continued) **S103950491**

Facility ID:	59788
Air District Name:	SC
SIC Code:	1541
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	59787
Air District Name:	SC
SIC Code:	3324
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Y174 **ERSKINE C C JR** **EDR Historical Auto Stations** **1009077636**
926 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 7 in cluster Y

Relative: Lower

Actual: 253 ft.

EDR Historical Auto Stations:

Name:	ERSKINE C C JR
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

AD175 **TANAKA J** **EDR Historical Cleaners** **1009187849**
709 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 2 in cluster AD

Relative: Higher

Actual: 261 ft.

EDR Historical Cleaners:

Name:	TANAKA J
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

T176 **< 1/8** **1 ft.**

SANTA FE PACIFIC PIPELINE, INC
888 S FIGUEROA ST, STE #500
LOS ANGELES, CA 90017

EMI **S106838936** **N/A**

Site 6 of 13 in cluster T

Relative: **Lower**

Actual: **254 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	69092
Air District Name:	SC
SIC Code:	4619
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	69092
Air District Name:	SC
SIC Code:	4619
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

N177 **< 1/8** **1 ft.**

SOUTHERN CALIFORNIA GAS CO
844 S FLOWER ST
LOS ANGELES, CA 90017

CA FID UST **SWEEPS UST** **S101586613** **N/A**

Site 9 of 15 in cluster N

Relative: **Higher**

Actual: **258 ft.**

CA FID UST:

Facility ID:	19054192
Regulated By:	UTNKI
Regulated ID:	00007518
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	844 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported

SOUTHERN CALIFORNIA GAS CO (Continued) **S101586613**

DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:

Status: Not reported
Comp Number: 795
Number: Not reported
Board Of Equalization: 44-011414
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000795-000001
Actv Date: Not reported
Capacity: 30000
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: 5

Status: Not reported
Comp Number: 795
Number: Not reported
Board Of Equalization: 44-011414
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000795-000002
Actv Date: Not reported
Capacity: 6000
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 795
Number: Not reported
Board Of Equalization: 44-011414
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000795-000003
Actv Date: Not reported
Capacity: 1
Tank Use: CHEMICAL
Stg: PRODUCT
Content: UNKNOWN
Number Of Tanks: Not reported

SOUTHERN CALIFORNIA GAS CO (Continued) **S101586613**

Status:	Not reported
Comp Number:	795
Number:	Not reported
Board Of Equalization:	44-011414
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000795-000004
Actv Date:	Not reported
Capacity:	500
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	795
Number:	Not reported
Board Of Equalization:	44-011414
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000795-000005
Actv Date:	Not reported
Capacity:	1
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

O178 **MARTIN BUILDING COMPANY** **HAZNET** **S102797092**
816 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 12 of 17 in cluster O

Relative: Higher

Actual: 258 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000260204
Contact:	MARK HOPE
Telephone:	2138921012
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE SUITE 170
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	37.08
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000260204

MARTIN BUILDING COMPANY (Continued) **S102797092**

Contact:	MARK HOPE
Telephone:	2138921012
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE SUITE 170
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	11.52
Facility County:	Los Angeles

Year:	2002
Gepaid:	CAL000260204
Contact:	MARK HOPE
Telephone:	2138921012
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE #102
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	33.71
Facility County:	Not reported

Year:	1995
Gepaid:	CAC000910472
Contact:	THE TRIDENT GROUP INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1460 WESTWOOD BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900240000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	1.3969
Facility County:	Los Angeles

O179 **MARTIN BUILDING COMPANY** **FINDS** **1008232178**
816 S. GRAND AVENUE **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 13 of 17 in cluster O

Relative:
Higher

Actual:
258 ft.

FINDS:

Registry ID: 110021011787

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

MARTIN BUILDING COMPANY (Continued) **1008232178**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

O180 **MARTIN BUILDING COMPANY** **RCRA-SQG** **1008194670**
816 S. GRAND AVENUE **CAL000260204**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 14 of 17 in cluster O

Relative:
Higher

Actual:
258 ft.

RCRA-SQG:

Date form received by agency:	02/05/2004
Facility name:	MARTIN BUILDING COMPANY
Facility address:	816 S. GRAND AVENUE LOS ANGELES, CA 90017
EPA ID:	CAL000260204
Mailing address:	801 S. GRAND AVENUE LOS ANGELES, CA 90017
Contact:	MATTHEW GIRON
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(562) 639-6576
Contact email:	MATTGIRON@HOTMAIL.COM
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MARTIN BUILDING COMPANY
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	07/01/2001
Owner/Op end date:	Not reported

Owner/operator name:	816 GRAND PROPERTIES, LLC.
Owner/operator address:	54 MINT STREET 5TH FLOOR SAN FRANCISCO, CA 94103
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	08/07/2002
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No

MARTIN BUILDING COMPANY (Continued) **1008194670**

Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	02/05/2004
Facility name:	MARTIN BUILDING COMPANY
Classification:	Large Quantity Generator

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD

Violation Status:	No violations found

O181 **816 SOUTH GRAND LLC** **HAZNET** **S104573638**
816 S GRAND **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 15 of 17 in cluster O

Relative:
Higher

Actual:
258 ft.

HAZNET:

Year:	1999
Gepaid:	CAC002244777
Contact:	816 SOUTH GRAND LLC
Telephone:	2136801230
Mailing Name:	Not reported
Mailing Address:	837 TRACTION AVE STE 400
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.6255
Facility County:	Los Angeles

S182 **< 1/8** **1 ft.**	**WEST SIXTH & BROADWAY PARTNERSHIP** **314 W. SIXTH STREET** **LOS ANGELES, CA 90014**	**EMI** **ENVIROSTOR**	**S106835553** **N/A**

Site 9 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

EMI:

Year:	1990
County Code:	30
Air Basin:	SC
Facility ID:	57386
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

ENVIROSTOR:

Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Chatsworth
Facility ID:	71003112
Site Code:	Not reported
Assembly:	53
Senate:	30
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	Not reported
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Not reported
Latitude:	34.04695
Longitude:	-118.2524
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CAD982519704
Alias Type:	EPA Identification Number
Alias Name:	71003112
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported

WEST SIXTH & BROADWAY PARTNERSHIP (Continued) **S106835553**

Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Y183 **SCHULTZ FRED** **EDR Historical Auto Stations** **1009079682**
930 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 7 in cluster Y

Relative: Lower
Actual: 253 ft.

EDR Historical Auto Stations:
Name: SCHULTZ FRED
Year: 1924
Type: AUTOMOBILE REPAIRING

V184 **CHARTER AUTO PARKS INC** **CA FID UST** **S101583839**
746 S HOPE ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 4 of 5 in cluster V

Relative: Higher
Actual: 265 ft.

CA FID UST:
Facility ID: 19006694
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2136221911
Mail To: Not reported
Mailing Address: 800 W 6TH ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900170000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 4328
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported

CHARTER AUTO PARKS INC (Continued) **S101583839**

Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

R185 **800 FIGUEROA BUILDING** **UST** **U001562537**
800 S FIGUEROA ST **HIST UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **SWEEPS UST**
1 ft.

Site 5 of 13 in cluster R

Relative:
Higher

Actual:
257 ft.

UST:

Facility ID:	24456
Latitude:	34.04782
Longitude:	-118.26131

HIST UST:

Region:	STATE
Facility ID:	00000050965
Facility Type:	Other
Other Type:	OFFICE
Total Tanks:	0002
Contact Name:	BOB ABSTON
Telephone:	2136133438
Owner Name:	FIGUEROA ASSOCIATES
Owner Address:	533 FREMONT AVENUE
Owner City,St,Zip:	LOS ANGELES, CA 90071

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, None

Tank Num:	002
Container Num:	1
Year Installed:	1981
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

SWEEPS UST:

Status:	A
Comp Number:	2867
Number:	9

800 FIGUEROA BUILDING (Continued) **U001562537**

Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-14-94
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002867-000001
Actv Date:	04-20-88
Capacity:	550
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

S186 **CHMIRS** **S100216414**
N/A

< 1/8
1 ft.

319 W 6TH ST
LOS ANGELES, CA 90014

Site 10 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

CHMIRS:

OES Incident Number:	8803372
OES notification:	Not reported
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	19-OCT-88
Date Completed:	**19-OCT-88**
Property Use:	962
Agency Id Number:	19105
Agency Incident Number:	616
Time Notified:	1755
Time Completed:	2020
Surrounding Area:	500
Estimated Temperature:	70
Property Management:	U
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	N
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	1
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	ALVIN K BARNHART AB7044 FS4-B
Report Date:	19-OCT-88
Comments:	Y
Facility Telephone:	213 485-7480

(Continued) **S100216414**

Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	Not reported
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

AE187 **STAVISS MAX** **EDR Historical Cleaners** **1009191161**
629 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 2 in cluster AE

Relative:
Lower

Actual:
254 ft.

EDR Historical Cleaners:

Name:	STAVISS MAX
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

N188	**830 S FLOWER**	**NPDES**	**S108744555**
	830 S FLOWER ST	**HAZNET**	**N/A**
< 1/8	**LOS ANGELES, CA 90017**		
1 ft.			

Site 10 of 15 in cluster N

Relative: Higher

Actual: 259 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	337453
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C349936
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/05/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/08/2010
Discharge Name:	CMI Group
Discharge Address:	6922 Hollywood Blvd Ste 900
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90028

HAZNET:

Year:	2009
Gepaid:	CAC002644127
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.05
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002629997
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.9125
Facility County:	Los Angeles

830 S FLOWER (Continued) **S108744555**

Year:	2009
Gepaid:	CAC002629997
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.8
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002629997
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002629997
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	2.8
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
9 additional CA_HAZNET: record(s) in the EDR Site Report.

R189 | **SHUWA INVESTMENTS CORP/NO AMERICAN MGMT** | **HAZNET** | **S104567981**
800 S FIGUEROA ST | **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 6 of 13 in cluster R

Relative: **Higher**

Actual: **257 ft.**

HAZNET:

Year:	1999
Gepaid:	CAC001467848
Contact:	SHUWA INVEST. CORP
Telephone:	2134859595
Mailing Name:	Not reported
Mailing Address:	515 S FLOWER ST STE 1270
Mailing City,St,Zip:	LOS ANGELES, CA 900172205
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	0.834
Facility County:	Los Angeles

N190 | **SO CALIF GAS CO/FLOWER ST FACILITY HQ** | **RCRA-SQG** | **1000167612**
810 S FLOWER ST. | **FINDS** | **CAD981423361**
< 1/8 **LOS ANGELES, CA 90051**
1 ft.

Site 11 of 15 in cluster N

Relative: **Higher**

Actual: **261 ft.**

RCRA-SQG:

Date form received by agency:	04/13/1990
Facility name:	SO CALIF GAS CO/FLOWER ST FACILITY HQ
Site name:	SOUTHERN CALIFORNIA GAS CO-FLOWER ST
Facility address:	810 S FLOWER ST. LOS ANGELES, CA 90051
EPA ID:	CAD981423361
Mailing address:	PO BOX 3249 TERMINAL ANNEX M.L. 211F LOS ANGELES, CA 90051
Contact:	SUNG W LEE
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(213) 689-3968
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SO CALIFORNIA GAS CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

SO CALIF GAS CO/FLOWER ST FACILITY HQ (Continued) **1000167612**

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/23/1986
Facility name: SO CALIF GAS CO/FLOWER ST FACILITY HQ
Classification: Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002700916

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AF191 **WALDOW MORRIS** **EDR Historical Cleaners** **1009187306**
521 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 7 in cluster AF

Relative:
Higher

Actual:
260 ft.

EDR Historical Cleaners:

Name:	MORI HEIZO
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	WALDOW MORRIS
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

M192 **UNIQUE PREMIUM METALS INC** **HAZNET** **S103993214**
640 SOUTH HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 17 of 56 in cluster M

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743
Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.80
Facility County:	Not reported
Year:	2002
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743
Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	3.44
Facility County:	Not reported
Year:	2002
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743

UNIQUE PREMIUM METALS INC (Continued) **S103993214**

Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Not reported
Tons:	0.56
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743
Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Recycler
Tons:	0.48
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000098454
Contact:	NELSON COLTON-PRESIDENT
Telephone:	2136229995
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 743
Mailing City,St,Zip:	LOS ANGELES, CA 900144017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	3.78
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
45 additional CA_HAZNET: record(s) in the EDR Site Report.

AG193 **ERICKSON AARON** **EDR Historical Cleaners** **1009191005**
836 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 4 in cluster AG

Relative:
Higher

Actual:
258 ft.

EDR Historical Cleaners:

Name:	ERICKSON AARON
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

Z194 **< 1/8** **1 ft.**

SOUTHERN CALIFORNIA GAS CO
841 S HOPE ST
LOS ANGELES, CA 90017

CA FID UST / **SWEEPS UST** — **S101586670** / **N/A**

Site 3 of 7 in cluster Z

Relative: Higher

Actual: 258 ft.

CA FID UST:

Facility ID:	19054336
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136892345
Mail To:	Not reported
Mailing Address:	841 S HOPE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	4179
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

S195 **< 1/8** **1 ft.**

W SIXTH AND BROADWAY PARTNERSHIP
314 W SIXTH ST 626
LOS ANGELES, CA 90014

RCRA-SQG / **FINDS** / **HAZNET** — **1000265209** / **CAD982519704**

Site 11 of 79 in cluster S

Relative: Higher

Actual: 265 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	W SIXTH AND BROADWAY PARTNERSHIP
Facility address:	314 W SIXTH ST 626 LOS ANGELES, CA 90014
EPA ID:	CAD982519704
Mailing address:	W SIXTH ST 626 LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported

W SIXTH AND BROADWAY PARTNERSHIP (Continued) **1000265209**

	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	W SIXTH AND BROADWAY PARTNERSHIP
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002840098

Environmental Interest/Information System

W SIXTH AND BROADWAY PARTNERSHIP (Continued) **1000265209**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1995
Gepaid:	CAD982519704
Contact:	KARABET AKPULAT DIRAN AKPULAT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	314 W 6TH ST STE 210
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	1.0500
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAD982519704
Contact:	KARABET AKPULAT DIRAN AKPULAT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	314 W 6TH ST STE 210
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	1.5000
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAD982519704
Contact:	KARABET AKPULAT DIRAN AKPULAT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	314 W 6TH ST STE 210
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	5.0000
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAD982519704
Contact:	KARABET AKPULAT DIRAN AKPULAT

W SIXTH AND BROADWAY PARTNERSHIP (Continued) **1000265209**

Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 314 W 6TH ST STE 210
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 6.6000
Facility County: Los Angeles

Year: 1993
Gepaid: CAD982519704
Contact: KARABET AKPULAT DIRAN AKPULAT
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 314 W 6TH ST STE 210
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Treatment, Tank
Tons: .2500
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

S196 **BACHRACH LOUIS** **EDR Historical Cleaners** **1009190078**
377 W 6TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 12 of 79 in cluster S

Relative: EDR Historical Cleaners:
Higher Name: BACHRACH LOUIS
Year: 1929
Actual: Type: CLOTHES PRESSERS CLEANERS AND REPAIRERS
266 ft.

O197 **BULLOCK'S/MACY'S WEST/DIVISIONAL OFFICE** **HAZNET** **S103672639**
800 SOUTH HOPE STREET **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 16 of 17 in cluster O

Relative: HAZNET:
Higher Year: 1993
Gepaid: CAL000100395
Actual: Contact: R H MACY INC
261 ft. Telephone: 2125603995
Mailing Name: Not reported
Mailing Address: 401 LAKE ST S
Mailing City,St,Zip: PASADENA, CA 911010000
Gen County: Los Angeles

BULLOCK'S/MACY'S WEST/DIVISIONAL OFFICE (Continued) **S103672639**

TSD EPA ID:	CAD088504881
TSD County:	Orange
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	.0425
Facility County:	Los Angeles

M198 **LOS ANGELES UNITED INVESTMENT CO.** **ENVIROSTOR** **S110494021**
650 S. HILL STREET #1010 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 18 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

ENVIROSTOR:

Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Chatsworth
Facility ID:	71003114
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	Not reported
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Not reported
Latitude:	0
Longitude:	0
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CAD982522344
Alias Type:	EPA Identification Number
Alias Name:	71003114
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported

LOS ANGELES UNITED INVESTMENT CO. (Continued) **S110494021**

Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

M199 **< 1/8** **1 ft.**	**SUNSHINE PLATING** **650 S HILL ST SUITE 818-A** **LOS ANGELES, CA 90014**	**RCRA-SQG** **FINDS** **HAZNET**	**1000381698** **CAD981982903**

Site 19 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	SUNSHINE PLATING
Facility address:	650 S HILL ST SUITE 818-A LOS ANGELES, CA 90014
EPA ID:	CAD981982903
Mailing address:	S HILL ST SUITE 818-A LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	LA UNITED INV CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No

SUNSHINE PLATING (Continued) **1000381698**

Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002764269

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 2006
Gepaid: CAD981982903
Contact: MAZMANIAN MARDIG
Telephone: 2136278540
Mailing Name: Not reported
Mailing Address: 650 S HILL ST STE 818A
Mailing City,St,Zip: LOS ANGELES, CA 900141755
Gen County: Los Angeles
TSD EPA ID: AZT050010685
TSD County: 99
Waste Category: Aqueous solution (2 < pH < 12.5) containing reactive anions ...
Disposal Method: Recycler
Tons: 0.25
Facility County: Los Angeles

N200 **819 S FLOWER LP** **HAZNET** **S108196392**
819 S FLOWER **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 12 of 15 in cluster N

Relative: Higher

Actual: 260 ft.

HAZNET:
Year: 2004
Gepaid: CAC002581163
Contact: BARBARA DEHNE
Telephone: 8186322836
Mailing Name: Not reported
Mailing Address: 100 WILSHIRE BLVD STE 2050
Mailing City,St,Zip: SANTA MONICA, CA 90401

819 S FLOWER LP (Continued) **S108196392**

Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	2.52
Facility County:	Not reported

V201 **AUTO CENTRE GARAGE** **EDR Historical Auto Stations** **1009079079**
746 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 5 in cluster V

Relative:
Higher

Actual:
265 ft.

EDR Historical Auto Stations:

Name:	AUTO CENTRE GARAGE
Year:	1937
Type:	AUTOMOBILE REPAIRING

AC202 **OXFORD PROPERTIES** **HAZNET** **S103980375**
606 SOUTH HILL ST,#1014 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 5 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000130274
Contact:	WESTERN JEWELRY MART JV
Telephone:	3067516668
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1014
Mailing City,St,Zip:	LOS ANGELES, CA 900141764
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Not reported
Tons:	.2250
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000130274
Contact:	WESTERN JEWELRY MART JV
Telephone:	3067516668
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1014
Mailing City,St,Zip:	LOS ANGELES, CA 900141764
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	.1000
Facility County:	Los Angeles

M203 **JOHNS EXCHANGE INC** **RCRA-SQG** **1000319170**
650 SOUTH HILL ST NUMBER 710 **FINDS** **CAD981425788**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 20 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	JOHNS EXCHANGE INC
Facility address:	650 S. HILL ST #710
	LOS ANGELES, CA 90014
EPA ID:	CAD981425788
Mailing address:	650 S HILL ST #SEVENTH HUNDRED
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	OHANES KAZANAJIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

JOHNS EXCHANGE INC (Continued) **1000319170**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/10/1986
Facility name:	JOHNS EXCHANGE INC
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002704235

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M204 **UNIQUE PREMIUM METALS, INC** **FINDS** **1012077290**
640 S HILL ST, STE 743 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 21 of 56 in cluster M

Relative:
Higher

Actual:
265 ft.

FINDS:

Registry ID: 110038862674

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

N205 **SO CAL GAS CO** **EMI** **S106839627**
810 S. FLOWER ST. **N/A**
< 1/8 **LOS ANGELES, CA 90051**
1 ft.

Site 13 of 15 in cluster N

Relative: Higher

Actual: 261 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	21947
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	8
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	21947
Air District Name:	SC
SIC Code:	4932
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

P206 **MORI HEIZO** **EDR Historical Cleaners** **1009186715**
721 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 10 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

EDR Historical Cleaners:

Name:	MORI HEIZO
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

T207 **SRO HOUSING CORP** **HAZNET** **S108221278**
845 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 7 of 13 in cluster T

Relative: Higher

Actual: 256 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002596234
Contact:	JOE CORSURAN
Telephone:	2132299640
Mailing Name:	Not reported
Mailing Address:	845 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	76.69
Facility County:	Not reported

O208 **CUSHMAN & WAKEFIELD** **HAZNET** **S103959423**
800 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90071**
1 ft.

Site 17 of 17 in cluster O

Relative: Higher

Actual: 261 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001413768
Contact:	CUSHMAN & WAKEFIELD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	555 S FLOWER STE 4200
Mailing City,St,Zip:	LOS ANGELES, CA 900712418
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	.1459
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001413768
Contact:	CUSHMAN & WAKEFIELD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	555 S FLOWER STE 4200
Mailing City,St,Zip:	LOS ANGELES, CA 900712418
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.1459
Facility County:	Los Angeles

AC209 **FOX PLAZA** **HAZNET** **S108747479**
608 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 6 of 73 in cluster AC

Relative: **Higher**

Actual: **266 ft.**

HAZNET:

Year:	2007
Gepaid:	CAL000303397
Contact:	SARKISS ZOUMALAN
Telephone:	8189928981
Mailing Name:	Not reported
Mailing Address:	608 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900141708
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAL000303397
Contact:	SARKISS ZOUMALAN
Telephone:	8189928981
Mailing Name:	Not reported
Mailing Address:	608 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900141708
Gen County:	Los Angeles
TSD EPA ID:	AZR000030452
TSD County:	99
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Not reported
Tons:	0.22
Facility County:	Los Angeles

T210 **WRIGHT/ROBINSON/MCCAMMON/OSTHIMER/TATUM** **HAZNET** **S103996382**
888 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 8 of 13 in cluster T

Relative: **Lower**

Actual: **254 ft.**

HAZNET:

Year:	1995
Gepaid:	CAC000889720
Contact:	NAMES SAME AS FACILITY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	888 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Laboratory waste chemicals
Disposal Method:	Treatment, Incineration
Tons:	.1559
Facility County:	Los Angeles

Z211 **GROSS THEO** **EDR Historical Auto Stations** **1009078157**
615 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 7 in cluster Z

Relative:
Lower

Actual:
253 ft.

EDR Historical Auto Stations:

Name:	GROSS THEO
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS
Name:	TEDS AUTO REPAIR
Year:	1933
Type:	AUTOMOBILE REPAIRING
Name:	GROSS T M
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	PEYTON W E
Year:	1942
Type:	AUTOMOBILE REPAIRING

AF212 **ORLIJAN S J** **EDR Historical Cleaners** **1009191964**
507 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 7 in cluster AF

Relative:
Higher

Actual:
259 ft.

EDR Historical Cleaners:

Name:	ORLIJAN S J
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

M213 **METALOR TECHNOLOGIES USA** **HAZNET** **S111081936**
650 S HILL ST SUITE #811 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 22 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000159614
Contact:	DIANE GEORGE EHS MANAGER
Telephone:	5086998800
Mailing Name:	Not reported
Mailing Address:	255 JOHN DIETSCH BLVD
Mailing City,St,Zip:	NORTH ATTLEBORO, MA 027610000
Gen County:	Not reported
TSD EPA ID:	ARD069748192
TSD County:	Not reported
Waste Category:	Baghouse waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0035
Facility County:	Los Angeles

AG214 **GRAND VIEW VILLIA** **HAZNET** **S108208126**
840 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90057**
1 ft.

Site 2 of 4 in cluster AG

Relative:
Higher

Actual:
258 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002184273
Contact:	PATRICA VALLE
Telephone:	2134875831
Mailing Name:	Not reported
Mailing Address:	CAL TRANS ATTN FRANK ROOM 414
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Oil/water separation sludge
Disposal Method:	Recycler
Tons:	0.83
Facility County:	Not reported

M215 **HAYTAYAN INC.** **HAZNET** **S106091199**
650 S HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 23 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000149008
Contact:	INACT PER 96 VQ AD
Telephone:	2136231298
Mailing Name:	Not reported
Mailing Address:	650 S HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Transfer Station
Tons:	0.00
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000149008
Contact:	INACT PER 96 VQ AD
Telephone:	2136231298
Mailing Name:	Not reported
Mailing Address:	650 S HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.03
Facility County:	Not reported

HAYTAYAN INC. (Continued) **S106091199**

Year:	2002
Gepaid:	CAL000149008
Contact:	INACT PER 96 VQ AD
Telephone:	2136231298
Mailing Name:	Not reported
Mailing Address:	650 S HILL STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0.00
Facility County:	Not reported

S216 **CHMIRS** **S105632795**
N/A

334 WEST 6TH ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 13 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

CHMIRS:

OES Incident Number:	5385
OES notification:	Not reported
OES Date:	11/26/1994
OES Time:	11:14:13 AM
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported

(Continued) **S105632795**

Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	STORM DRAINS
Spill Site:	Not reported
Cleanup By:	PRIVATE CONTRACTOR
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1994
Agency:	STONEWATER MGMT
Incident Date:	11/25/94 1100
Admin Agency:	Not reported
Amount:	200 GALS
Contained:	Not reported
Site Type:	Not reported
E Date:	Not reported
Substance:	DIESEL
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	HUMAN ERROR - WRONG PRODUCT INTO SUMP PUMP BY UNEXPLAINED CIRCUMSTANCES

M217 **ABKARIAN JEWELRY** **RCRA-SQG** **1000155415**
650 S HILL ST #916 **FINDS** **CAD981579097**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 24 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	ABKARIAN JEWELRY
Facility address:	650 S HILL ST #916 LOS ANGELES, CA 90014
EPA ID:	CAD981579097
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported

ABKARIAN JEWELRY (Continued) **1000155415**

EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KRIS ABKARIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/30/1986
Facility name:	ABKARIAN JEWELRY
Classification:	Large Quantity Generator

Violation Status:	No violations found

FINDS:

Registry ID:	110002721537

ABKARIAN JEWELRY (Continued) **1000155415**

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S218 **PHAROS JEWELRY** **HAZNET** **S106090491**
314 W 6TH ST #416 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 14 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2002
Gepaid:	CAD982027161
Contact:	HESU HOVSEPIAN
Telephone:	2136232072
Mailing Name:	Not reported
Mailing Address:	314 W 6TH ST STE 416
Mailing City,St,Zip:	LOS ANGELES, CA 900144014
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.06
Facility County:	Not reported

S219 **MARS** **HAZNET** **S110373115**
314 W 6TH ST, #402 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 15 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2009
Gepaid:	CAL000174490
Contact:	REPAIL SAHAK_#REC'D THRU S.
Telephone:	2136141074
Mailing Name:	Not reported
Mailing Address:	314 W 6TH ST STE 402
Mailing City,St,Zip:	LOS ANGELES, CA 900144014
Gen County:	Los Angeles
TSD EPA ID:	CAD981696420
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.7923
Facility County:	Los Angeles

N220 **C I M/FLOWER, LLC** **HAZNET** **S106089393**
800, 810 & 820 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 14 of 15 in cluster N

Relative: **Higher**

Actual: **261 ft.**

HAZNET:

Year:	2004
Gepaid:	CAC002557404
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90028
Gen County:	Los Angeles
TSD EPA ID:	CAL000827758
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Disposal, Land Fill
Tons:	2
Facility County:	Not reported

Year:	2003
Gepaid:	CAC002563652
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	ELLEN ROSE/VP ADMIN
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90028
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.5
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAC002557404
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	ELLEN ROSE/VP ADMIN
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90028
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	160.13
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAC002557404
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	ELLEN ROSE/VP ADMIN
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90028

C I M/FLOWER, LLC (Continued) **S106089393**

Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Other
Tons:	0.3
Facility County:	Los Angeles
Year:	2003
Gepaid:	CAC002563652
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	ELLEN ROSE/VP ADMIN
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 90028
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	1.04
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

Y221 **ABBOTT H S** **EDR Historical Auto Stations** **1009082699**
945 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 6 of 7 in cluster Y

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:

Name:	ABBOTT H S
Year:	1942
Type:	AUTOMOBILE REPAIRING

T222 **CUSHMAN & WAKEFIELD OF CAL INC** **CA FID UST** **S101586439**
888 S FIGUEROA ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **EMI**
1 ft.

Site 9 of 13 in cluster T

Relative:
Lower

Actual:
254 ft.

CA FID UST:

Facility ID:	19050148
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	888 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported

CUSHMAN & WAKEFIELD OF CAL INC (Continued) **S101586439**

DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6407
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	69091
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	69091
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0

CUSHMAN & WAKEFIELD OF CAL INC (Continued) **S101586439**

Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	69091
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC223 **VARDERESSIAN JEWELRY** **RCRA-SQG** **1000188095**
550 S HILL ST #764 **FINDS** **CAD981386329**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 7 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

RCRA-SQG:

Date form received by agency:	03/12/1986
Facility name:	VARDERESSIAN JEWELRY
Facility address:	550 S HILL ST #764 LOS ANGELES, CA 90014
EPA ID:	CAD981386329
Mailing address:	S HILL ST #764 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	550 S HILL ST #764 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 689-9060
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MICHAEL VARDERESSIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported

VARDERESSIAN JEWELRY (Continued) **1000188095**

Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002689421

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S224 **KIM'S JEWELRY** **HAZNET** **S103652044**
314 WEST 6TH ST STE 314 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 16 of 79 in cluster S

Relative: Higher

Actual: 265 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000126910
Contact:	--
Telephone:	2136220741
Mailing Name:	Not reported
Mailing Address:	314 WEST 6TH ST STE 314
Mailing City,St,Zip:	LOS ANGELES, CA 900140000

KIM'S JEWELRY (Continued) **S103652044**

Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	Not reported
Facility County:	Not reported

Year:	1999
Gepaid:	CAL000126910
Contact:	KIM'S JEWELRY MANUFACTURING
Telephone:	2136220741
Mailing Name:	Not reported
Mailing Address:	314 WEST 6TH ST STE 314
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	0.4586
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000126910
Contact:	KIM'S JEWELRY MANUFACTURING
Telephone:	2136220741
Mailing Name:	Not reported
Mailing Address:	314 WEST 6TH ST STE 314
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000126910
Contact:	KIM'S JEWELRY MANUFACTURING
Telephone:	2136220741
Mailing Name:	Not reported
Mailing Address:	314 WEST 6TH ST STE 314
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.4586
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000126910
Contact:	KIM'S JEWELRY MANUFACTURING
Telephone:	2136220741

KIM'S JEWELRY (Continued) **S103652044**

Mailing Name:	Not reported
Mailing Address:	314 WEST 6TH ST STE 314
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.3750
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

AD225 **PAPPAS S J** **EDR Historical Cleaners** **1009189881**
721 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 2 in cluster AD

Relative: Higher

Actual: 261 ft.

EDR Historical Cleaners:

Name:	YORK ROY
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	PAPPAS S J
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	PAPPAS STEVE
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

Y226 **BENUM JACK** **EDR Historical Cleaners** **1009192496**
862 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 7 of 7 in cluster Y

Relative: Higher

Actual: 257 ft.

EDR Historical Cleaners:

Name:	BENUM JACK
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

P227 **L A JEWELRY MART INC** **HAZNET** **S108211519**
712 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 11 of 15 in cluster P

Relative: Higher

Actual: 264 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002590910
Contact:	MAIDEE MENDELSOHN
Telephone:	2136227538

L A JEWELRY MART INC (Continued) **S108211519**

Mailing Name:	Not reported
Mailing Address:	712 S OLIVE ST STE 203
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Other
Tons:	0
Facility County:	Not reported

N228 **CIM 810 FLOWER LLC** **HAZNET** **S103979473**
810 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 15 of 15 in cluster N

Relative:
Higher

Actual:
261 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002653483
Contact:	ELLEN ROSE
Telephone:	3238604925
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD STE 900
Mailing City,St,Zip:	LOS ANGELES, CA 900286129
Gen County:	Not reported
TSD EPA ID:	CAD097030993
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.4
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001421240
Contact:	NORTH AMERICA BUILDING MGMT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	.1668
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001421240
Contact:	NORTH AMERICA BUILDING MGMT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	801 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681

CIM 810 FLOWER LLC (Continued) **S103979473**

TSD County: Los Angeles
Waste Category: Alkaline solution without metals pH >= 12.5
Disposal Method: Recycler
Tons: .0500
Facility County: Los Angeles

AC229 **UNIDOR JEWELRY** **RCRA-SQG** **1000191287**
606 S HILL ST #417 **FINDS** **CAD981394190**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 8 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

RCRA-SQG:
Date form received by agency: 02/25/1986
Facility name: UNIDOR JEWELRY
Facility address: 606 S HILL ST #417
LOS ANGELES, CA 90014
EPA ID: CAD981394190
Contact: ENVIRONMENTAL MANAGER
Contact address: 606 S HILL ST #FOURTH HUNDRED
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 623-5954
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: EDWARD ANDONIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No

UNIDOR JEWELRY (Continued) **1000191287**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002692382

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Z230 **MINUTEMAN PRESS** **HAZNET** **S106091908**
600 W 9TH ST STE 135 **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 7 in cluster Z

Relative: Lower

Actual: 253 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000216595
Contact:	W CHAO PRES/FRANCHISE OWNER
Telephone:	2136272604
Mailing Name:	Not reported
Mailing Address:	600 W 9TH ST STE 135
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.231
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAL000216595
Contact:	W CHAO PRES/FRANCHISE OWNER
Telephone:	2136272604
Mailing Name:	Not reported
Mailing Address:	600 W 9TH ST STE 135
Mailing City,St,Zip:	LOS ANGELES, CA 900150000

MINUTEMAN PRESS (Continued) **S106091908**

Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.231
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000216595
Contact: W CHAO PRES/FRANCHISE OWNER
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.462
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000216595
Contact: W CHAO PRES/FRANCHISE OWNER
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.12
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000216595
Contact: W CHAO PRES/FRANCHISE OWNER
Telephone: 2136272604
Mailing Name: Not reported
Mailing Address: 600 W 9TH ST STE 135
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.46
Facility County: Los Angeles

MINUTEMAN PRESS (Continued) **S106091908**

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

Z231 **CHMIRS** **S110979995**
600 WEST 9TH STREET UNIT 1007 **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 6 of 7 in cluster Z

Relative:
Lower

Actual:
253 ft.

CHMIRS:

OES Incident Number:	'10-3597
OES notification:	6/12/2010 5:05:00 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Residence
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	N/A
Other:	Not reported
Date/Time:	1705
Year:	2010

(Continued) **S110979995**

Agency:	Private Citizen
Incident Date:	6/12/2010
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Not reported
E Date:	Not reported
Substance:	Unknown Vapor
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Caller states that there is a odor that is coming in from his air condition ducts. Caller states that he does not smell the odor outside of his house. Caller states that this has been going on for the last 2-3 weeks. Caller states that he is experiencing migraines and nausea. Caller has notified his landlord of this and no actions have been taken.

Z232 **SOUTHERN CALIFORNIA GAS CO** **CA FID UST** **S101586669**
825 S HOPE ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 7 of 7 in cluster Z

Relative:
Higher

Actual:
259 ft.

CA FID UST:

Facility ID:	19054335
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2135892345
Mail To:	Not reported
Mailing Address:	825 S HOPE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SOUTHERN CALIFORNIA GAS CO (Continued) **S101586669**

SWEEPS UST:
Status: Not reported
Comp Number: 4178
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

M233 **ASTOURIAN JEWELRY INC.** **RCRA-SQG** **1000343469**
650 S. HILL ST. #629 **FINDS** **CAD097045553**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 25 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: ASTOURIAN JEWELRY INC.
Facility address: 650 S. HILL ST. #629
LOS ANGELES, CA 90014
EPA ID: CAD097045553
Mailing address: S. HILL ST. #SIXTH HUNDRED
LOS ANGELES, CA 90014
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: KEVORK ASTOURIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

ASTOURIAN JEWELRY INC. (Continued) **1000343469**

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002665385

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

---

234 **KRENTZER JOS CO** **EDR Historical Auto Stations** **1009082576**
951 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:

Name:	KRENTZER JOS CO
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	KREUTZER JOS
Year:	1942
Type:	AUTOMOBILE REPAIRING

T235	**SOUTH PARK ASSOCIATES** **888 S FIGUEROA STE 630** **LOS ANGELES, CA 90017**	**HAZNET**	**S108220859** **N/A**
< 1/8 **1 ft.**	**Site 10 of 13 in cluster T**		
Relative: Lower **Actual: 254 ft.**			

HAZNET:

Year: 2004
Gepaid: CAC002577722
Contact: GARY SHIELD
Telephone: 2136833270
Mailing Name: Not reported
Mailing Address: 888 S FIGUEROA STE 630
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: NED981723513
TSD County: 99
Waste Category: Oil/water separation sludge
Disposal Method: Transfer Station
Tons: 0.6
Facility County: Not reported

M236	**ST VINCENT GOLD ASSAYERS** **640 S HILL ST STE 662** **LOS ANGELES, CA 90014**	**HAZNET**	**S110374535** **N/A**
< 1/8 **1 ft.**	**Site 26 of 56 in cluster M**		
Relative: Higher **Actual: 265 ft.**			

HAZNET:

Year: 2010
Gepaid: CAL000334338
Contact: ARA AFARIAN
Telephone: 2136276732
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 662
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Not reported
TSD EPA ID: CAD003963592
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 0.2945
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000334338
Contact: ARA AFARIAN
Telephone: 2136276732
Mailing Name: Not reported
Mailing Address: 640 S HILL ST STE 662
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: CAD003963592
TSD County: Santa Clara
Waste Category: Other inorganic solid waste
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 0.265
Facility County: Los Angeles

X237 **SAVENA JEWELRY INC** **RCRA-SQG** **1000207164**
550 S HILL ST #1648 **FINDS** **CAD981626567**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 4 of 5 in cluster X

Relative:
Higher

Actual:
271 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	SAVENA JEWELRY INC
Facility address:	550 S HILL ST #1648 LOS ANGELES, CA 90013
EPA ID:	CAD981626567
Mailing address:	S HILL ST #FIRST THOUSAND LOS ANGELES, CA 90013
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KRIKOR HAVANDJIAN VP
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

SAVENA JEWELRY INC (Continued) **1000207164**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002729584

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

R238 **UNK** **CA FID UST** **S101584552**
801 S FIGUEROA ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 7 of 13 in cluster R

Relative:
Higher

Actual:
257 ft.

CA FID UST:

Facility ID:	19012757
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2139559440
Mail To:	Not reported
Mailing Address:	700 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7824
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported

UNK (Continued) **S101584552**

Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

M239 **S A SMELTING & ASSAYING LAB** **HAZNET** **S108219059**
640 S HILL ST STE 755 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 27 of 56 in cluster M

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000827881
Contact:	SERGIO ALEXANDER
Telephone:	2136221430
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 755
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	FL0000228791
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Not reported
Tons:	Not reported
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000827881
Contact:	SERGIO ALEXANDER
Telephone:	2136221430
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 755
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	FL000228791
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Not reported
Tons:	Not reported
Facility County:	Los Angeles

Year:	2004
Gepaid:	CAL000827881
Contact:	SERGIO ALEXANDER
Telephone:	2136221430
Mailing Name:	Not reported
Mailing Address:	640 S HILL ST STE 755
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Not reported

S A SMELTING & ASSAYING LAB (Continued) **S108219059**

Disposal Method: Recycler
Tons: 0.49
Facility County: Not reported

X240 **MARVEL JEWELRY** **RCRA-SQG** **1000429839**
550 S HILL ST 940 **FINDS** **CAD982407801**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 5 of 5 in cluster X

Relative:
Higher

Actual:
271 ft.

RCRA-SQG:

Date form received by agency: 03/31/1988
Facility name: MARVEL JEWELRY
Facility address: 550 S HILL ST 940
LOS ANGELES, CA 90013
EPA ID: CAD982407801
Contact: ENVIRONMENTAL MANAGER
Contact address: 550 S HILL ST NINETH HUNDRED F
LOS ANGELES, CA 90013
Contact country: US
Contact telephone: (213) 680-1645
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: HARRY VERTANIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No

MARVEL JEWELRY (Continued) **1000429839**

Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002805867

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

R241 **CUSHMAN AND WAKEFIELD** **HAZNET** **S103959427**
801 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 8 of 13 in cluster R

Relative:
Higher

Actual:
257 ft.

HAZNET:

Year:	2000
Gepaid:	CAC001350800
Contact:	CUSHMAN AND WAKEFIELD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	801 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Latex waste
Disposal Method:	Disposal, Land Fill
Tons:	.1042
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC001350800
Contact:	CUSHMAN AND WAKEFIELD
Telephone:	0000000000
Mailing Name:	Not reported

CUSHMAN AND WAKEFIELD (Continued) **S103959427**

Mailing Address:	801 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	.0417
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001350800
Contact:	CUSHMAN AND WAKEFIELD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	801 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.4170
Facility County:	Los Angeles

U242 **WEAVER A J** **EDR Historical Cleaners** **1009188890**
754 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 21 in cluster U

Relative: Higher

Actual: 264 ft.

EDR Historical Cleaners:

Name:	WEAVER A J
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

T243 **SERVICE STATION 0999** **HIST UST** **U001560297**
860 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90003**
1 ft.

Site 11 of 13 in cluster T

Relative: Higher

Actual: 255 ft.

HIST UST:

Region:	STATE
Facility ID:	00000003906
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0003
Contact Name:	KY ENTERPRISES INC.
Telephone:	2137784898
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010

Tank Num:	001
Container Num:	0999-4

SERVICE STATION 0999 (Continued) **U001560297**

Year Installed:	1973
Tank Capacity:	00000550
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test, 10
Tank Num:	002
Container Num:	0999-2
Year Installed:	1973
Tank Capacity:	00009940
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test, 10
Tank Num:	003
Container Num:	0999-1
Year Installed:	1973
Tank Capacity:	00009940
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test, 10

M244 **UNIQUE PREMIUM METALS, INC** **RCRA-LQG** **1012175602**
640 S HILL ST, STE 743 **US FIN ASSUR** **CAL000098454**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 28 of 56 in cluster M

Relative:
Higher

Actual:
265 ft.

RCRA-LQG:

Date form received by agency:	06/02/2008
Facility name:	UNIQUE PREMIUM METALS, INC
Facility address:	640 S HILL ST, STE 743 LOS ANGELES, CA 90014
EPA ID:	CAL000098454
Contact:	NELSON B COLTON
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(213) 622-9995
Contact email:	UPMC@AOL.COM
EPA Region:	09
Land type:	Private
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

UNIQUE PREMIUM METALS, INC (Continued) **1012175602**

Owner/Operator Summary:

Owner/operator name:	UNIQUE PREMIUM METALS, INC
Owner/operator address:	640 S HILL ST, STE 743 LOS ANGELES, CA 90014
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	02/01/1991
Owner/Op end date:	Not reported

Owner/operator name:	UNIQUE PREMIUM METALS, INC
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	05/23/2006
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	Yes
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	Yes
Used oil transporter:	Yes

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD

Facility Has Received Notices of Violations:

Regulation violated:	Not reported
Area of violation:	TSD - Container Use and Management
Date violation determined:	05/27/2008
Date achieved compliance:	07/03/2008
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	05/27/2008
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported

UNIQUE PREMIUM METALS, INC (Continued) **1012175602**

Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Manifest
Date violation determined: 06/20/2007
Date achieved compliance: 06/26/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/21/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/20/2007
Date achieved compliance: 06/26/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/21/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/20/2007
Date achieved compliance: 07/18/2007
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/21/2007
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 05/28/2009
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/27/2008
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - Container Use and Management
Date achieved compliance: 07/03/2008
Evaluation lead agency: State

UNIQUE PREMIUM METALS, INC (Continued) **1012175602**

Evaluation date:	04/28/2008
Evaluation:	FINANCIAL RECORD REVIEW
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	06/26/2007
Evaluation:	NOT A SIGNIFICANT NON-COMPLIER
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	06/25/2007
Evaluation:	FINANCIAL RECORD REVIEW
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	06/20/2007
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	07/18/2007
Evaluation lead agency:	State
Evaluation date:	06/20/2007
Evaluation:	SIGNIFICANT NON-COMPLIER
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	06/20/2007
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - Manifest
Date achieved compliance:	06/26/2007
Evaluation lead agency:	State
Evaluation date:	06/20/2007
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	06/26/2007
Evaluation lead agency:	State

US FIN ASSUR:

EPA ID:	CAL000098454
Provider:	WELLS FARGO BANK
EPA region:	9
County:	LOS ANGELES
Mechanism type:	TRUST FUND (FULLY FUNDED)
Mechanism ID:	TA001
Cost estimate:	10000
Face value:	10000
Effective date:	12/28/2010
EPA ID:	CAL000098454
Provider:	CERTAIN UNDERWRITER''S AT LLOYD''S, LONDON
EPA region:	9
County:	LOS ANGELES
Mechanism type:	INSURANCE

UNIQUE PREMIUM METALS, INC (Continued) **1012175602**

Mechanism ID:	PGIARK00748-00
Cost estimate:	2000000
Face value:	2000000
Effective date:	1/7/2011

P245 **KVV JEWELRY MFG** **EMI** **S106833947**
712 S OLIVE ST #601 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 12 of 15 in cluster P

Relative:
Higher

Actual:
264 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	60544
Air District Name:	SC
SIC Code:	3299
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M246 **BETTER DIAMOND SETTING CO** **RCRA-SQG** **1000401500**
650 S HILL ST **FINDS** **CAD982482564**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 29 of 56 in cluster M

Relative:
Higher

Actual:
264 ft.

RCRA-SQG:

Date form received by agency:	08/09/1988
Facility name:	BETTER DIAMOND SETTING CO
Facility address:	650 S HILL ST LOS ANGELES, CA 90014
EPA ID:	CAD982482564
Contact:	ENVIRONMENTAL MANAGER
Contact address:	650 S HILL ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 489-1361
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

BETTER DIAMOND SETTING CO (Continued) **1000401500**

Owner/Operator Summary:

Owner/operator name: VAHE AGOPYAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009546376

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

G247 **C S LUBRICATING SERVICE** **EDR Historical Auto Stations** **1009077572**
742 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 14 of 25 in cluster G

Relative: **Higher**

Actual: **268 ft.**

EDR Historical Auto Stations:

Name:	C S LUBRICATING SERVICE
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

M248 **ARBEL JEWELRY MFG CORP** **EMI** **S106826109**
650 S HILL ST, ROOM #514 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 30 of 56 in cluster M

Relative: **Higher**

Actual: **264 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	58977
Air District Name:	SC
SIC Code:	3911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S249 **SARKIS CREATIONS, SARKIS SULTA** **EMI** **S106838974**
314 WEST 6 ST, SUITE 603 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 17 of 79 in cluster S

Relative: **Higher**

Actual: **265 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57364
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC250 **WESTERN JEWELRY MART** **HAZNET** **S109930305**
606 S HILL ST STE 1109A **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 9 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002632621
Contact:	JESUS GARCIA
Telephone:	2134476743
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1109A
Mailing City,St,Zip:	LOS ANGELES, CA 900141766
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.418
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002632621
Contact:	JESUS GARCIA
Telephone:	2134476743
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1109A
Mailing City,St,Zip:	LOS ANGELES, CA 900141766
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Liquids with pH <= 2
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.22935
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002632621
Contact:	JESUS GARCIA
Telephone:	2134476743
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1109A
Mailing City,St,Zip:	LOS ANGELES, CA 900141766
Gen County:	Los Angeles
TSD EPA ID:	AZD982441263
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Other Treatment
Tons:	0.4587
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002632621
Contact:	JESUS GARCIA
Telephone:	2134476743
Mailing Name:	Not reported
Mailing Address:	606 S HILL ST STE 1109A

WESTERN JEWELRY MART (Continued) **S109930305**

Mailing City,St,Zip:	LOS ANGELES, CA 900141766
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

AH251 **UNION BANK** **EMI** **S106841608**
760 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90051**
1 ft.

Site 1 of 3 in cluster AH

Relative: Higher

Actual: 258 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	12070
Air District Name:	SC
SIC Code:	6021
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	12
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AH252 **MERUELO MADDOUX CA FF LLC** **HAZNET** **S108213723**
760 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 3 in cluster AH

Relative: Higher

Actual: 258 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002597314
Contact:	JOHN MADDOUX
Telephone:	2136275045
Mailing Name:	Not reported
Mailing Address:	761 TERMINAL ST BLDG 1 2ND FLR
Mailing City,St,Zip:	LOS ANGELES, CA 90021
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	16.85
Facility County:	Los Angeles

MERUELO MADDOUX CA FF LLC (Continued) **S108213723**

Year:	2005
Gepaid:	CAC002597314
Contact:	JOHN MADDOUX
Telephone:	2136275045
Mailing Name:	Not reported
Mailing Address:	761 TERMINAL ST BLDG 1 2ND FLR
Mailing City,St,Zip:	LOS ANGELES, CA 90021
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	25.28
Facility County:	Not reported

AG253 **PETRY J M** — **EDR Historical Cleaners** — **1009191984** **N/A**
859 S GRAND AVE
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 4 in cluster AG

Relative: Higher
Actual: 257 ft.

EDR Historical Cleaners:

Name:	PETRY J M
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

AF254 **FEGELMAN WOLFE** — **EDR Historical Cleaners** — **1009190462** **N/A**
811 S OLIVE ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 7 in cluster AF

Relative: Higher
Actual: 258 ft.

EDR Historical Cleaners:

Name:	FEGELMAN WOLFE
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	FEGELMAN WOLFE
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

AF255 **BROWNING STARBUCK** — **EDR Historical Auto Stations** — **1009077139** **N/A**
811 S OLIVE ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 7 in cluster AF

Relative: Higher
Actual: 258 ft.

EDR Historical Auto Stations:

Name:	BROWNING STARBUCK
Year:	1924
Type:	AUTOMOBILE REPAIRING

AA256 **HUSBANDS L R** **EDR Historical Auto Stations** **1009082854**
852 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 2 in cluster AA

Relative:
Higher

Actual:
258 ft.

EDR Historical Auto Stations:

Name:	HUSBANDS L R
Year:	1937
Type:	AUTOMOBILE REPAIRING

K257 **RAINBOW ONE HOUR & STUDIO** **RCRA-SQG** **1000307945**
304 W 5TH ST **FINDS** **CAD981629439**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 11 of 18 in cluster K

Relative:
Higher

Actual:
271 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	RAINBOW ONE HOUR & STUDIO
Facility address:	304 W 5TH ST
	LOS ANGELES, CA 90013
EPA ID:	CAD981629439
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	JACK ABAIAN & EILEEN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

RAINBOW ONE HOUR & STUDIO (Continued) **1000307945**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	12/01/1986
Facility name:	RAINBOW ONE HOUR & STUDIO
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002730288

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AI258 **717 OLYMPIC** **NPDES** **S109452775**
717 W OLYMPIC BLVD **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 8 in cluster AI

Relative:
Lower

Actual:
251 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	265767
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C337639
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	11/07/2005
Expiration Date Of Regulatory Measure:	Not reported

717 OLYMPIC (Continued) **S109452775**

Termination Date Of Regulatory Measure:	06/01/2010
Discharge Name:	Hanover RS LP
Discharge Address:	5847 San Felipe St Ste 3600
Discharge City:	Houston
Discharge State:	Texas
Discharge Zip:	77057

HAZNET:

Year:	2009
Gepaid:	CAL000341921
Contact:	LICICA BENEFIELD
Telephone:	2136248439
Mailing Name:	Not reported
Mailing Address:	717 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900151497
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.075
Facility County:	Los Angeles

S259 **PIERELDA JEWELRY** **RCRA-SQG** **1000355571**
314 W 6M ST **FINDS** **CAD981981350**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 18 of 79 in cluster S

Relative:
Higher

Actual:
265 ft.

RCRA-SQG:

Date form received by agency:	04/06/1987
Facility name:	PIERELDA JEWELRY
Facility address:	314 W 6M ST LOS ANGELES, CA 90014
EPA ID:	CAD981981350
Mailing address:	W 6M ST LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	314 W 6M ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 688-0964
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MEGUERDITCHIAN PIERRE
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212

PIERELDA JEWELRY (Continued) **1000355571**

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002763705

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

T260 **9TH ST MIXED USE PROJECT** **NPDES** **S109435243**
900 S FIGUEROA 700 9TH ST 901 S FLOWER **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 12 of 13 in cluster T

Relative:
Higher

Actual:
255 ft.

NPDES:
Npdes Number: CAS000002
Facility Status: Terminated
Agency Id: 0
Region: 4

9TH ST MIXED USE PROJECT (Continued) **S109435243**

Regulatory Measure Id:	296538
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C339235
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/26/2006
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/02/2010
Discharge Name:	Astani Enterprises Inc
Discharge Address:	9595 Wilshire Blvd Suite 1010
Discharge City:	Beverly Hills
Discharge State:	California
Discharge Zip:	90212

R261 **800 FIGUEROA BUILDING** **CA FID UST** **S101617634**
800 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90071**
1 ft.

Site 9 of 13 in cluster R

Relative: Higher

Actual: 257 ft.

CA FID UST:

Facility ID:	19009768
Regulated By:	UTNKA
Regulated ID:	00050965
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136133438
Mail To:	Not reported
Mailing Address:	533 FREMONT AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900710000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

M262 **DESGINED BY SCORPIO** **EMI** **S106829981**
650 S HILL ST, NO 915 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 31 of 56 in cluster M

Relative: Higher

Actual: 264 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	58819
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported

DESGINED BY SCORPIO (Continued) **S106829981**

Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

AJ263 **CLEGHORN R W** **EDR Historical Auto Stations** **1009081983**
1025 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 12 in cluster AJ

Relative:
Lower

Actual:
251 ft.

EDR Historical Auto Stations:
Name: CLEGHORN R W
Year: 1942
Type: AUTOMOBILE REPAIRING

AK264 **TEXACO** **HIST UST** **U001560633**
504 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

HIST UST:
Region: STATE
Facility ID: 00000017375
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0005
Contact Name: HARRY HAHN
Telephone: 2137485687
Owner Name: TEXACO U.S.A.
Owner Address: PO BX 3756 3350 WILSHIRE BLVD
Owner City,St,Zip: LOS ANGELES, CA 90010

Tank Num: 001
Container Num: 1
Year Installed: 1984
Tank Capacity: 00000550
Tank Used for: WASTE
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: Sensor Instrument

Tank Num: 002
Container Num: 2
Year Installed: 1984
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor, Vapor Sniff Well, Sensor Instrument

TEXACO (Continued) **U001560633**

Tank Num: 003
Container Num: 3
Year Installed: 1984
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: Not reported
Leak Detection: Stock Inventor, Vapor Sniff Well, Sensor Instrument

Tank Num: 004
Container Num: 4
Year Installed: 1984
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor, Vapor Sniff Well, Sensor Instrument

Tank Num: 005
Container Num: 5
Year Installed: 1984
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor, Vapor Sniff Well, Sensor Instrument

---

AK265 **HAHN'S TEXACO** **EDR Historical Auto Stations** **1008996120**
504 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90000**
1 ft.

Site 2 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:
Name: HAHN'S TEXACO
Year: 1994
Type: Not reported

AL266 **EEXCEL GRAND LTD** **HAZNET** **S103657362**
400 W 9TH **N/A**
< 1/8 **LOS ANGELES, CA 90013**
1 ft.

Site 1 of 6 in cluster AL

Relative:
Higher

Actual:
255 ft.

HAZNET:
Year: 1996
Gepaid: CAC001141656
Contact: ONTI CONSTRUCTION
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 400 W 9TH
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: AZC951206114
TSD County: 99
Waste Category: Other organic solids

EEXCEL GRAND LTD (Continued) **S103657362**

Disposal Method: Disposal, Land Fill
Tons: 61.7688
Facility County: Los Angeles

Year: 1996
Gepaid: CAC001141656
Contact: ONTI CONSTRUCTION
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 400 W 9TH
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Recycler
Tons: .0834
Facility County: Los Angeles

Year: 1996
Gepaid: CAC001141656
Contact: ONTI CONSTRUCTION
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 400 W 9TH
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD982484933
TSD County: 7
Waste Category: Other empty containers 30 gallons or more
Disposal Method: Recycler
Tons: .8000
Facility County: Los Angeles

AM267 **AVERILL MORGAN CO** **EDR Historical Cleaners** **1009188755**
319 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 5 in cluster AM

Relative: Lower
Actual: 254 ft.

EDR Historical Cleaners:
Name: AVERILL MORGAN CO
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

AN268 **HOPE ENTERPRISES LLC** **HAZNET** **S108209090**
1000 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 12 in cluster AN

Relative: Lower
Actual: 251 ft.

HAZNET:
Year: 2004
Gepaid: CAC002582002
Contact: RITA SIMBULAN
Telephone: 2136149888

HOPE ENTERPRISES LLC (Continued) **S108209090**

Mailing Name: Not reported
Mailing Address: 605 W OLYMPIC BLVD STE 780
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 0.84
Facility County: Not reported

Year: 2004
Gepaid: CAC002582838
Contact: IYAHOUDA EMRANI
Telephone: 2136149888
Mailing Name: Not reported
Mailing Address: 605 W OLYMPIC BLVD
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 18.54
Facility County: Not reported

AL269 **HOLUALOA COAST OFFICE LLC** **HAZNET** **S104566147**
315 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 6 in cluster AL

Relative: Higher

Actual: 255 ft.

HAZNET:
Year: 2002
Gepaid: CAC002551653
Contact: Sonia Hyncik
Telephone: 2136292041
Mailing Name: Not reported
Mailing Address: 315 W 9TH ST STE 927
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.84
Facility County: Not reported

Year: 1999
Gepaid: CAC001316816
Contact: HOLUALOA COAST OFFICE LLC
Telephone: 2136292041
Mailing Name: Not reported
Mailing Address: 315 W 9TH ST STE 927
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles

HOLUALOA COAST OFFICE LLC (Continued) **S104566147**

Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.8428
Facility County: Los Angeles

AN270 **UNION BANK OF CALIFORNIA** **HAZNET** **S104571565**
1000 SO HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 12 in cluster AN

Relative:
Lower

Actual:
251 ft.

HAZNET:

Year: 2000
Gepaid: CAC002278273
Contact: VENICE
Telephone: 2137487444
Mailing Name: Not reported
Mailing Address: 1526 SO BROADWAY ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 283.1808
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002198377
Contact: UNION BANK OF CALIFORNIA
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 120 SO SAN PEDRO ST
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Transfer Station
Tons: 0.0175
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002198377
Contact: UNION BANK OF CALIFORNIA
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 120 SO SAN PEDRO ST
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Transfer Station
Tons: 0.2502
Facility County: Los Angeles

Year: 1999

UNION BANK OF CALIFORNIA (Continued) **S104571565**

Gepaid:	CAC002198377
Contact:	UNION BANK OF CALIFORNIA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	120 SO SAN PEDRO ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Transfer Station
Tons:	0.1009
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAC002198377
Contact:	UNION BANK OF CALIFORNIA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	120 SO SAN PEDRO ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Latex waste
Disposal Method:	Transfer Station
Tons:	3.3712
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

AO271 **FEDERAL RESERVE BANK OF SF-LA BRANCH** **HAZNET** **S108747256**
950 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 19 in cluster AO

Relative:
Higher

Actual:
255 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000029514
Contact:	G GONZALES, ASST. CHIEF ENGR
Telephone:	2136832213
Mailing Name:	Not reported
Mailing Address:	950 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900151436
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.225
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000029514
Contact:	G GONZALES, ASST. CHIEF ENGR

FEDERAL RESERVE BANK OF SF-LA BRANCH (Continued) **S108747256**

Telephone: 2136832213
Mailing Name: Not reported
Mailing Address: 950 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900151436
Gen County: Not reported
TSD EPA ID: NVT330010000
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.3
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000029514
Contact: G GONZALES, ASST. CHIEF ENGR
Telephone: 2136832213
Mailing Name: Not reported
Mailing Address: 950 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900151436
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.005
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000029514
Contact: G GONZALES, ASST. CHIEF ENGR
Telephone: 2136832213
Mailing Name: Not reported
Mailing Address: 950 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900151436
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0525
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000029514
Contact: G GONZALES, ASST. CHIEF ENGR
Telephone: 2136832213
Mailing Name: Not reported
Mailing Address: 950 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900151436
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery

FEDERAL RESERVE BANK OF SF-LA BRANCH (Continued) **S108747256**

(H010-H129) Or (H131-H135)
Tons: 0.06
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

AF272 **DILLINGHAM C W** **EDR Historical Cleaners** **1009190747**
831 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 7 in cluster AF

Relative:
Higher

Actual:
257 ft.

EDR Historical Cleaners:
Name: DILLIUGHAM C W
Year: 1929
Type: CLOTHES PRESSERS CLEANERS AND REPAIRERS

Name: DILLINGHAM C W
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

AJ273 **COPPLE AUTO SERVICE** **EDR Historical Auto Stations** **1009082049**
1032 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 12 in cluster AJ

Relative:
Lower

Actual:
250 ft.

EDR Historical Auto Stations:
Name: COPPLE AUTO SERVICE
Year: 1942
Type: AUTOMOBILE REPAIRING

AO274 **FEDERAL RESERVE BANK OF SF** **UST** **U003780898**
950 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 19 in cluster AO

Relative:
Higher

Actual:
255 ft.

UST:
Facility ID: 24478
Latitude: 34.04368
Longitude: -118.25993

AP275 **LOS ANGELES JOB CORE** **HAZNET** **S111078865**
221 W 11TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 16 in cluster AP

Relative: Lower

Actual: 247 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002655120
Contact:	OSCAR SCHULTZ
Telephone:	2137480135
Mailing Name:	Not reported
Mailing Address:	1106 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900152206
Gen County:	Not reported
TSD EPA ID:	AZR000501510
TSD County:	Not reported
Waste Category:	Oil/water separation sludge
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.22935
Facility County:	Los Angeles

AQ276 **KNEWBOW ISADORE** **EDR Historical Cleaners** **1009190254**
946 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 4 in cluster AQ

Relative: Lower

Actual: 253 ft.

EDR Historical Cleaners:

Name:	KNEWBOW ISADORE
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

AO277 **CRANE A L** **EDR Historical Auto Stations** **1009084734**
519 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 19 in cluster AO

Relative: Higher

Actual: 255 ft.

EDR Historical Auto Stations:

Name:	CRANE A L
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AR278 **LIBERTY NATIONAL ENTERPRISES** **ICIS** **1011583524**
830 HILL STREET LOS ANGELES CA 90014 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 1 of 7 in cluster AR

Relative: Higher

Actual: 255 ft.

ICIS:

Enforcement Action ID:	09-2005-0114
FRS ID:	110022868146
Program ID:	FRS 110022868146
Action Name:	LIBERTY NATIONAL ENTERPRISES INC.
Facility Name:	LIBERTY NATIONAL ENTERPRISES

LIBERTY NATIONAL ENTERPRISES (Continued) **1011583524**

Facility Address: 830 HILL STREET LOS ANGELES CA 90014
LOS ANGELES, California 90014
Enforcement Action Type: TSCA 16 Action For Penalty
Facility County: Los Angeles
EPA Region #: 9

Program ID: FRS 110022868146
Facility Name: LIBERTY NATIONAL ENTERPRISES
Address: 830 HILL STREET
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 6513
Latitude: 34.043986
Longitude: -118.256251

AO279 **US FEDERAL RESERVE BANK** **RCRA-SQG** **1000214013**
950 S GRAND **FINDS** **CA3007890368**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 19 in cluster AO

Relative:
Higher

Actual:
255 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: US FEDERAL RESERVE BANK
Facility address: 950 S GRAND
LOS ANGELES, CA 90015
EPA ID: CA3007890368
Mailing address: PO BOX 2077 TERMINAL ANNEX
LOS ANGELES, CA 90015
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Federal
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: FEDERAL RESERVE BANK

US FEDERAL RESERVE BANK (Continued) **1000214013**

Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Federal
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/13/1990
Facility name:	US FEDERAL RESERVE BANK
Site name:	FEDERAL RESERVE BANK
Classification:	Large Quantity Generator

Date form received by agency:	04/06/1987
Facility name:	US FEDERAL RESERVE BANK
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002625213

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AS280 **WARD HOWARD F INC** **EDR Historical Auto Stations** **1009081268**
1058 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 8 in cluster AS

Relative:
Lower

Actual:
247 ft.

EDR Historical Auto Stations:

Name:	WARD H F INC
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	WARD HOWARD F INC
Year:	1942
Type:	AUTOMOBILE REPAIRING

AO281 **FEDERAL RESERVE BANK OF SF-LA BRANCH** **HAZNET** **S100935217**
950 S GRAND **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 19 in cluster AO

Relative:
Higher

Actual:
255 ft.

HAZNET:

Year:	2008
Gepaid:	CA3007890368
Contact:	--
Telephone:	4159742407
Mailing Name:	Not reported
Mailing Address:	101 MARKET ST M/S B020
Mailing City,St,Zip:	SAN FRANCISCO, CA 941050000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0625
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAL000029514
Contact:	ROARY WALSH, BUILDING SERVICES
Telephone:	2136832399
Mailing Name:	Not reported
Mailing Address:	950 S GRAND
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0.39
Facility County:	Not reported

Year:	2003
Gepaid:	CAL000029514
Contact:	ROARY WALSH, BUILDING SERVICES
Telephone:	2136832399
Mailing Name:	Not reported
Mailing Address:	950 S GRAND
Mailing City,St,Zip:	LOS ANGELES, CA 900150000

FEDERAL RESERVE BANK OF SF-LA BRANCH (Continued) **S100935217**

Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Treatment, Tank
Tons:	0.73
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000029514
Contact:	ROARY WALSH, BUILDING SERVICES
Telephone:	2136832399
Mailing Name:	Not reported
Mailing Address:	950 S GRAND
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000029514
Contact:	ROARY WALSH, BUILDING SERVICES
Telephone:	2136832399
Mailing Name:	Not reported
Mailing Address:	950 S GRAND
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.32
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
14 additional CA_HAZNET: record(s) in the EDR Site Report.

AF282 **MARTIN MICHL** **EDR Historical Auto Stations** **1009082657**
818 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 6 of 7 in cluster AF

Relative:
Higher

Actual:
258 ft.

EDR Historical Auto Stations:

Name:	MARTIN MICHL
Year:	1937
Type:	AUTOMOBILE REPAIRING

AN283 **STANDARD STATIONS INC OFFICE** **EDR Historical Auto Stations** **1009081399**
605 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 12 in cluster AN

Relative: **Lower**

Actual: **250 ft.**

EDR Historical Auto Stations:

Name:	STANDARD STATIONS INC OFFICE
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	STANDARD STATIONS INC OFFICE
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AK284 **HARRY HAHN** **HIST UST** **U001560615**
505 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 14 in cluster AK

Relative: **Lower**

Actual: **252 ft.**

HIST UST:

Region:	STATE
Facility ID:	00000039742
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	SAME
Telephone:	2136225946
Owner Name:	MOBIL OIL CORP
Owner Address:	612 S. FLOWER ST
Owner City,St,Zip:	LOS ANGELES, CA 90017
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000280
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	4
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	3
Year Installed:	1971
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

HARRY HAHN (Continued) **U001560615**

Tank Num:	004
Container Num:	2
Year Installed:	1971
Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

AO285 **FEDERAL RESERVE BANK OF S F** **CA FID UST** **S101586165**
950 S GRAND AVE **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015** **HAZNET**
1 ft. **EMI**

Site 6 of 19 in cluster AO

Relative: Higher

Actual: 255 ft.

CA FID UST:

Facility ID:	19040144
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	950 S GRAND AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	6485
Number:	7
Board Of Equalization:	Not reported
Ref Date:	06-02-93
Act Date:	06-02-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2002
Gepaid:	CAL000029514
Contact:	PAUL STARSON/ASST CHIEF ENGR
Telephone:	2136832399

FEDERAL RESERVE BANK OF S F (Continued) **S101586165**

Mailing Name: Not reported
Mailing Address: 950 S GRAND
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Laboratory waste chemicals
Disposal Method: Transfer Station
Tons: 0.00
Facility County: Not reported

Year: 2002
Gepaid: CAL000029514
Contact: PAUL STARSON/ASST CHIEF ENGR
Telephone: 2136832399
Mailing Name: Not reported
Mailing Address: 950 S GRAND
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: 0.28
Facility County: Not reported

Year: 2002
Gepaid: CAL000029514
Contact: PAUL STARSON/ASST CHIEF ENGR
Telephone: 2136832399
Mailing Name: Not reported
Mailing Address: 950 S GRAND
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Transfer Station
Tons: 0.58
Facility County: Not reported

Year: 2002
Gepaid: CAL000029514
Contact: PAUL STARSON/ASST CHIEF ENGR
Telephone: 2136832399
Mailing Name: Not reported
Mailing Address: 950 S GRAND
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Transfer Station
Tons: 0.04
Facility County: Not reported

Year: 2002

FEDERAL RESERVE BANK OF S F (Continued) **S101586165**

Gepaid:	CAL000029514
Contact:	PAUL STARSON/ASST CHIEF ENGR
Telephone:	2136832399
Mailing Name:	Not reported
Mailing Address:	950 S GRAND
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0.24
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
30 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	54835
Air District Name:	SC
SIC Code:	6011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AT286 **11TH & GRAND GLASS TOWER** **NPDES** **S109433970**
1050 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 7 in cluster AT

Relative:
Lower

Actual:
248 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	324693
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C346974
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/08/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/02/2010
Discharge Name:	11th & Grand LLC

11TH & GRAND GLASS TOWER (Continued) **S109433970**

Discharge Address:	6464 Sunset Blvd Ste 880
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90028

AU287 **MICHAEL GILARDIAN** **HAZNET** **S108213819**
409 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 5 in cluster AU

Relative: **Lower**

Actual: **253 ft.**

HAZNET:

Year:	2004
Gepaid:	CAC002574639
Contact:	MICHAEL GILARDIAN
Telephone:	2137490049
Mailing Name:	Not reported
Mailing Address:	409 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Transfer Station
Tons:	0.02
Facility County:	Not reported

AL288 **MC DONNELL J E** **EDR Historical Cleaners** **1009189998**
312 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 6 in cluster AL

Relative: **Higher**

Actual: **255 ft.**

EDR Historical Cleaners:

Name:	MC DONNELL J E
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

AS289 **PENDARVIS H W** **EDR Historical Auto Stations** **1009078360**
1018 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 8 in cluster AS

Relative: **Lower**

Actual: **249 ft.**

EDR Historical Auto Stations:

Name:	PENDARVIS H W
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

AP290 **WILSON L C** **EDR Historical Cleaners** **1009191687**
208 W 11TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 16 in cluster AP

Relative: **Lower**
Actual: **246 ft.**

EDR Historical Cleaners:

Name:	WILSON L C
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

AV291 **SPECK TIMMERMAN** **EDR Historical Auto Stations** **1009080882**
607 W 11TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 11 in cluster AV

Relative: **Lower**
Actual: **245 ft.**

EDR Historical Auto Stations:

Name:	SPECK TIMMERMAN
Year:	1937
Type:	AUTOMOBILE REPAIRING

AO292 **MORGAN J E** **EDR Historical Auto Stations** **1009083037**
943 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 7 of 19 in cluster AO

Relative: **Higher**
Actual: **255 ft.**

EDR Historical Auto Stations:

Name:	MORGAN J E
Year:	1937
Type:	AUTOMOBILE REPAIRING

AW293 **PHELEN FRANK** **EDR Historical Auto Stations** **1009078040**
1050 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 4 in cluster AW

Relative: **Lower**
Actual: **248 ft.**

EDR Historical Auto Stations:

Name:	PHELEN FRANK
Year:	1924
Type:	AUTOMOBILE REPAIRING

AO294 **COMMUNITY REDEVELOPMENT AGENCY** **SWEEPS UST** **S106924837**
943 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 8 of 19 in cluster AO

Relative: **Higher**
Actual: **255 ft.**

SWEEPS UST:

Status:	Not reported
Comp Number:	8154
Number:	Not reported
Board Of Equalization:	Not reported

COMMUNITY REDEVELOPMENT AGENCY (Continued) **S106924837**

Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AK295 **TEXACO REFINING AND MARKETING INC** **HAZNET** **S103662633**
504 W OLYMPIC **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	1997
Gepaid:	CAL000047506
Contact:	TEXACO REFINING AND MARKETING
Telephone:	8185052802
Mailing Name:	Not reported
Mailing Address:	10 UNIVERSAL CITY PLAZA 7TH FLOOR
Mailing City,St,Zip:	UNIVERSAL CITY, CA 916081009
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Treatment, Tank
Tons:	.0333
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000047506
Contact:	TEXACO REFINING AND MARKETING
Telephone:	8185052802
Mailing Name:	Not reported
Mailing Address:	10 UNIVERSAL CITY PLAZA 7TH FLOOR
Mailing City,St,Zip:	UNIVERSAL CITY, CA 916081009
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.4170
Facility County:	Los Angeles

AS296 **BELL H J** **EDR Historical Auto Stations** **1009081834**
1030 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 8 in cluster AS

Relative: **Lower**

Actual: **249 ft.**

EDR Historical Auto Stations:

Name:	BELL H J
Year:	1942
Type:	AUTOMOBILE REPAIRING

AL297 **SHORELAND VISTAS** **HAZNET** **S103652124**
315 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 6 in cluster AL

Relative: **Higher**

Actual: **255 ft.**

HAZNET:

Year:	1996
Gepaid:	CAC000761152
Contact:	SHORELAND VISTAS, INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	315 W 9TH ST, #927
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	3.1275
Facility County:	Los Angeles

AO298 **KETELLE SON** **EDR Historical Auto Stations** **1009082567**
944 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 9 of 19 in cluster AO

Relative: **Higher**

Actual: **255 ft.**

EDR Historical Auto Stations:

Name:	KETELLE SON
Year:	1937
Type:	AUTOMOBILE REPAIRING

AN299 **HOPE AND OIL PICK** **HAZNET** **S108209089**
1000 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 12 in cluster AN

Relative: **Lower**

Actual: **251 ft.**

HAZNET:

Year:	2004
Gepaid:	CAC002580361
Contact:	VASKEN ALEXANIA
Telephone:	8089969666
Mailing Name:	Not reported
Mailing Address:	1000 S HOPE ST

HOPE AND OIL PICK (Continued) **S108209089**

Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	2.08
Facility County:	Not reported

AO300 **JOHNSON MARY** **EDR Historical Cleaners** **1009190133**
953 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 10 of 19 in cluster AO

Relative: Higher

Actual: 255 ft.

EDR Historical Cleaners:

Name:	JOHNSON MARY
Year:	1929
Type:	LAUNDRIES HAND
Name:	CONGDON T F
Year:	1933
Type:	LAUNDRIES HAND
Name:	GROSS MAX
Year:	1942
Type:	LAUNDRIES HAND

AS301 **LARSON CARL** **EDR Historical Auto Stations** **1009080936**
1016 S FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 8 in cluster AS

Relative: Lower

Actual: 249 ft.

EDR Historical Auto Stations:

Name:	LARSON CARL
Year:	1933
Type:	AUTOMOBILE REPAIRING

AX302 **HOLIDAY INN** **HAZNET** **S103620612**
1020 S FIGUEROA **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 14 in cluster AX

Relative: Lower

Actual: 248 ft.

HAZNET:

Year:	1998
Gepaid:	CAC002126776
Contact:	HOLIDAY INN
Telephone:	2137481291
Mailing Name:	Not reported
Mailing Address:	1020 S FIGUEROA
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352

HOLIDAY INN (Continued) **S103620612**

TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: .3127
Facility County: Los Angeles

Year: 1997
Gepaid: CAC001079712
Contact: HOLIDAY INN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 1020 S FIGUEROA
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT080025711
TSD County: San Bernardino
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Recycler
Tons: .3753
Facility County: Los Angeles

Year: 1997
Gepaid: CAC001079712
Contact: HOLIDAY INN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 1020 S FIGUEROA
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAT080025711
TSD County: San Bernardino
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Not reported
Tons: .3753
Facility County: Los Angeles

AS303 **SHAMMAS GROUP** **HAZNET** **S108220265**
1037 FLOWER ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 8 in cluster AS

Relative:
Lower

Actual:
248 ft.

HAZNET:
Year: 2004
Gepaid: CAC002584872
Contact: JASON CHANG
Telephone: 2137476492
Mailing Name: Not reported
Mailing Address: 714 W OLYMPIC BLVD STE 710
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 8.42
Facility County: Not reported

AQ304 **MANAHAN J R** — **EDR Historical Auto Stations** — **1009079018** **N/A**
955 S HILL ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 4 in cluster AQ

Relative: Lower
Actual: 253 ft.

EDR Historical Auto Stations:

Name:	SHAPIROS SERVICE STATION
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION
Name:	MANAHAN J R
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	ROSE BENJ
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AO305 **EMMICK B H** — **EDR Historical Auto Stations** — **1009082457** **N/A**
951 S GRAND AVE
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 11 of 19 in cluster AO

Relative: Higher
Actual: 255 ft.

EDR Historical Auto Stations:

Name:	EMMICK B H
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	ORONA ADOLPH
Year:	1942
Type:	AUTOMOBILE REPAIRING

AL306 **COOPER S M** — **EDR Historical Cleaners** — **1009189067** **N/A**
402 W 9TH ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 6 in cluster AL

Relative: Higher
Actual: 255 ft.

EDR Historical Cleaners:

Name:	COOPER S M
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

AX307 **HORIUCHI J** — **EDR Historical Cleaners** — **1009186864** **N/A**
1033 S FIGUEROA ST
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 14 in cluster AX

Relative: Lower
Actual: 247 ft.

EDR Historical Cleaners:

Name:	HORIUCHI J
Year:	1924
Type:	LAUNDRIES ORIENTAL

AK308 **UNK** **CA FID UST** **S101586979**
501 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

CA FID UST:

Facility ID:	19054673
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	11111 SANTA MONICA BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

AU309 **MARTIN JOHN** **EDR Historical Auto Stations** **1009083270**
954 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 5 in cluster AU

Relative:
Lower

Actual:
254 ft.

EDR Historical Auto Stations:

Name:	MARTIN JOHN
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

AW310 **LOS ANGELES JOB CORP** **HAZNET** **S103620951**
1031 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 4 in cluster AW

Relative:
Lower

Actual:
250 ft.

HAZNET:

Year:	1997
Gepaid:	CAP400479315
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	000000000
Gen County:	0
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	.0417
Facility County:	0

LOS ANGELES JOB CORP (Continued) **S103620951**

Year:	1997
Gepaid:	CAP400479315
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	000000000
Gen County:	0
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Transfer Station
Tons:	.0208
Facility County:	0

Year:	1994
Gepaid:	CAP400479315
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	000000000
Gen County:	0
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	0

Year:	1994
Gepaid:	CAP400479315
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	000000000
Gen County:	0
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Transfer Station
Tons:	.0416
Facility County:	0

AK311 **EQUILON ENTERPRISES LLC** **HAZNET** **S104577915**
504 W OLYMPIC/GRAND **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 6 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000104881
Contact:	EQUILON ENTERPRISES LLC
Telephone:	7132412258
Mailing Name:	Not reported
Mailing Address:	PO BOX 4453

EQUILON ENTERPRISES LLC (Continued) **S104577915**

Mailing City,St,Zip:	HOUSTON, TX 772104453
Gen County:	Los Angeles
TSD EPA ID:	CAD982484933
TSD County:	7
Waste Category:	Empty containers less than 30 gallons
Disposal Method:	Disposal, Other
Tons:	.2500
Facility County:	Los Angeles

AJ312 **YWCA GREATER LOS ANGELES** **NPDES** **S111216936**
1020 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 12 in cluster AJ

Relative:
Lower

Actual:
251 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	400975
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C356829
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/03/2009
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	11/21/2011
Discharge Name:	YWCA of Greater Los Angeles Urban Campus Development Corporation
Discharge Address:	3345 Wilshire Blvd Suite 300
Discharge City:	Norwalk
Discharge State:	California
Discharge Zip:	90010

AJ313 **PARAMOUNT REPAIR SHOP** **EDR Historical Auto Stations** **1009078877**
1006 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 12 in cluster AJ

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:

Name:	PARAMOUNT REPAIR SHOP
Year:	1924
Type:	AUTOMOBILE REPAIRING
Name:	EDMONDSON J E
Year:	1933
Type:	AUTOMOBILE REPAIRING

AU314 **US FEDERAL RESERVE BANK** **RCRA-NonGen** **1000214016**
409 W OLYMPIC BLVD **FINDS** **CA7007890158**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 5 in cluster AU

Relative:
Lower

Actual:
253 ft.

RCRA-NonGen:

Date form received by agency:	05/11/1994
Facility name:	US FEDERAL RESERVE BANK
Facility address:	409 W OLYMPIC BLVD LOS ANGELES, CA 90015
EPA ID:	CA7007890158
Mailing address:	PO BOX 2077 TERMINAL ANNEX LOS ANGELES, CA 90051
Contact:	ENVIRONMENTAL MANAGER
Contact address:	409 W OLYMPIC BLVD LOS ANGELES, CA 90015
Contact country:	US
Contact telephone:	(213) 683-8431
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	FEDERAL RESERVE BANK
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Federal
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Federal
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

US FEDERAL RESERVE BANK (Continued) **1000214016**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002625632

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AT315 **NEW WELL HAND LAUNDRY** **EDR Historical Cleaners** **1009188695**
1056 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 7 in cluster AT

Relative: Lower

Actual: 249 ft.

EDR Historical Cleaners:
Name: NEW WELL HAND LAUNDRY
Year: 1933
Type: LAUNDRIES CHINESE

AJ316 **FERGUSON TOW SERVICE** **EDR Historical Auto Stations** **1009076478**
1017 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 5 of 12 in cluster AJ

Relative: Lower

Actual: 251 ft.

EDR Historical Auto Stations:
Name: FERGUSON TOW SERVICE
Year: 1929
Type: AUTOMOBILE REPAIRING AND SERVICE STATIONS

Name: EDMONDSON J E
Year: 1937
Type: AUTOMOBILE REPAIRING

Name: EDMONDSON J E
Year: 1942
Type: AUTOMOBILE REPAIRING

AJ317 **BURNHAM CHAS** **EDR Historical Auto Stations** **1009080231**
1008 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 6 of 12 in cluster AJ

Relative: **Lower**

Actual: **252 ft.**

EDR Historical Auto Stations:

Name:	BURNHAM CHAS
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS
Name:	SCHULTZ R R
Year:	1942
Type:	AUTOMOBILE REPAIRING

AJ318 **A COMPANY CLEANERS** **EDR Historical Cleaners** **1009126490**
363 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90000**
1 ft.

Site 7 of 12 in cluster AJ

Relative: **Lower**

Actual: **252 ft.**

EDR Historical Cleaners:

Name:	A COMPANY CLEANERS
Year:	1994
Type:	Not reported

AW319 **MARK GABAY** **CA FID UST** **S101583946**
1022 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 4 in cluster AW

Relative: **Lower**

Actual: **250 ft.**

CA FID UST:

Facility ID:	19007503
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136594409
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6349
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported

MARK GABAY (Continued) **S101583946**

Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AK320 **HARRY'S AUTO SERVICE INC.** **CA FID UST** **S101586244**
504 W OLYMPIC BLVD **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 7 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

CA FID UST:

Facility ID:	19042277
Regulated By:	UTNKA
Regulated ID:	00017375
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2137485687
Mail To:	Not reported
Mailing Address:	P O BOX 3756 3350 WI BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	1192
Number:	1
Board Of Equalization:	44-011651
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001192-000001
Actv Date:	04-20-88
Capacity:	550
Tank Use:	OIL
Stg:	W
Content:	WASTE OIL
Number Of Tanks:	6

Status:	A
Comp Number:	1192
Number:	1

HARRY'S AUTO SERVICE INC. (Continued) **S101586244**

Board Of Equalization: 44-011651
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001192-000002
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 1192
Number: 1
Board Of Equalization: 44-011651
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001192-000003
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 1192
Number: 1
Board Of Equalization: 44-011651
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001192-000004
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 1192
Number: 1
Board Of Equalization: 44-011651
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported

HARRY'S AUTO SERVICE INC. (Continued) **S101586244**

Swrcb Tank Id: 19-050-001192-000005
Actv Date: 04-20-88
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Status: A
Comp Number: 1192
Number: 1
Board Of Equalization: 44-011651
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001192-000006
Actv Date: 04-20-88
Capacity: Not reported
Tank Use: CHEMICAL
Stg: P
Content: UNKNOWN
Number Of Tanks: Not reported

AY321 **DAVIS EPHRAIM** **EDR Historical Cleaners** **1009185209**
1063 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 5 in cluster AY

Relative: Lower
Actual: 245 ft.

EDR Historical Cleaners:
Name: DAVIS EPHRAIM
Year: 1929
Type: CLOTHES PRESSERS CLEANERS AND REPAIRERS

AO322 **LEE SOON** **EDR Historical Cleaners** **1009190637**
912 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 12 of 19 in cluster AO

Relative: Higher
Actual: 256 ft.

EDR Historical Cleaners:
Name: LEE SOON
Year: 1929
Type: LAUNDRIES ORIENTAL

AR323 **DANDY PRESSING PARLOR** **EDR Historical Cleaners** **1009185204**
430 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 7 in cluster AR

Relative: Higher

Actual: 257 ft.

EDR Historical Cleaners:

Name:	DANDY PRESSING PARLOR
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

AS324 **PROPERTY UNDER CONSTRUCTION** **LUST** **S106915902**
1050-1070 FLOWER ST. S. **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 6 of 8 in cluster AS

Relative: Lower

Actual: 248 ft.

LUST:

Region:	STATE
Global Id:	T0603519348
Latitude:	34.043664
Longitude:	-118.263497
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/09/2007
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	CET
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900150107
LOC Case Number:	35569
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Heating Oil / Fuel Oil
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603519348
Contact Type:	Local Agency Caseworker
Contact Name:	TBD
Organization Name:	LOS ANGELES, CITY OF
Address:	200 N. MAIN ST. RM. 970
City:	LOS ANGELES
Email:	Not reported
Phone Number:	2134826528

Global Id:	T0603519348
Contact Type:	Regional Board Caseworker
Contact Name:	CHANDRA TYLER
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	Not reported
City:	R4 UNKNOWN
Email:	cetyler@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603519348
Action Type:	ENFORCEMENT
Date:	01/11/2005

PROPERTY UNDER CONSTRUCTION (Continued) **S106915902**

Action: Staff Letter

Global Id: T0603519348
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0603519348
Action Type: RESPONSE
Date: 02/11/2005
Action: Other Report / Document

Global Id: T0603519348
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603519348
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603519348
Action Type: ENFORCEMENT
Date: 03/09/2007
Action: Closure/No Further Action Letter

Global Id: T0603519348
Action Type: ENFORCEMENT
Date: 03/06/2007
Action: Site Visit / Inspection / Sampling

AO325 **SUZUKI I** **EDR Historical Cleaners** **1009186865**
510 W 9TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 13 of 19 in cluster AO

Relative: Higher

Actual: 256 ft.

EDR Historical Cleaners:
Name: KAJIHARA K
Year: 1924
Type: LAUNDRIES ORIENTAL

Name: SUZUKI I
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: SUZUKI I
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

Name: SUZUKI INOSUKI
Year: 1942
Type: LAUNDRIES ORIENTAL

AX326 **CITY OF LOS ANGELES** **CA FID UST** **S101586994**
1012 S FIGUEROA ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 14 in cluster AX

Relative: **Lower**

Actual: **249 ft.**

CA FID UST:

Facility ID:	19054688
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	UNK
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7946
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AR327 **COHN JACK** **EDR Historical Cleaners** **1009193597**
426 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 7 in cluster AR

Relative: **Higher**

Actual: **257 ft.**

EDR Historical Cleaners:

Name:	COHN JACK
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

AK328	**SCHAEFER A E**	**EDR Historical Auto Stations**	**1009081204**
	1023 S GRAND AVE		**N/A**
< 1/8	**LOS ANGELES, CA**		
1 ft.			
	Site 8 of 14 in cluster AK		

Relative: **Lower**

Actual: **251 ft.**

EDR Historical Auto Stations:

Name:	SCHAEFER A E
Year:	1937
Type:	AUTOMOBILE REPAIRING

AK329	**GRAND PHOENIX CORP**	**UST**	**U003780839**
	501 W OLYMPIC BLVD	**SWEEPS UST**	**N/A**
< 1/8	**LOS ANGELES, CA 90015**		
1 ft.			
	Site 9 of 14 in cluster AK		

Relative: **Lower**

Actual: **252 ft.**

UST:

Facility ID:	24405
Latitude:	34.04303
Longitude:	-118.26061

SWEEPS UST:

Status:	A
Comp Number:	7868
Number:	1
Board Of Equalization:	Not reported
Ref Date:	04-20-88
Act Date:	04-25-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AJ330	**C I PRINTING**	**HAZNET**	**S102816659**
	1035 S OLIVE ST		**N/A**
< 1/8	**LOS ANGELES, CA 90015**		
1 ft.			
	Site 8 of 12 in cluster AJ		

Relative: **Lower**

Actual: **250 ft.**

HAZNET:

Year:	2010
Gepaid:	CAL000090993
Contact:	YOUNG SIM SHIN OWNER
Telephone:	2137476747
Mailing Name:	Not reported
Mailing Address:	1035 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	ORQ000024781
TSD County:	Not reported
Waste Category:	Unspecified solvent mixture

C I PRINTING (Continued) **S102816659**

Disposal Method: Solvents Recovery
Tons: 0.108
Facility County: Los Angeles

Year: 2004
Gepaid: CAL000090993
Contact: YOUNG SIM SHIN OWNER
Telephone: 2137476747
Mailing Name: Not reported
Mailing Address: 1035 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: WAH000016212
TSD County: 99
Waste Category: Unspecified solvent mixture
Disposal Method: Recycler
Tons: 0.12
Facility County: Not reported

Year: 2003
Gepaid: CAL000090993
Contact: YOUNG SIM SHIN OWNER
Telephone: 2137476747
Mailing Name: Not reported
Mailing Address: 1035 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: WAH000016212
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Recycler
Tons: 0.25
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000090993
Contact: DONG H SHIN
Telephone: 2137476747
Mailing Name: Not reported
Mailing Address: 1035 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .0208
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000090993
Contact: DONG H SHIN
Telephone: 2137476747
Mailing Name: Not reported
Mailing Address: 1035 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles

C I PRINTING (Continued) **S102816659**

TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0208
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

AO331 **ATLANTIC HAND LAUNDRY** **EDR Historical Cleaners** **1009188009**
936 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 14 of 19 in cluster AO

Relative: Higher

Actual: 255 ft.

EDR Historical Cleaners:

Name:	ATLANTIC HAND LAUNDRY
Year:	1924
Type:	LAUNDRIES

AQ332 **GOODYEAR SERVICE CENTER #9265** **HIST UST** **U001560614**
940 S HILL ST **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 4 in cluster AQ

Relative: Lower

Actual: 253 ft.

HIST UST:

Region:	STATE
Facility ID:	00000029515
Facility Type:	Other
Other Type:	AUTO REPAIR CENTER
Total Tanks:	0001
Contact Name:	RALPH MESCHKAT
Telephone:	2136239121
Owner Name:	GOODYEAR TIRE & RUBBER
Owner Address:	1146 E. MARKET ST.
Owner City,St,Zip:	AKRON, OH 44316

Tank Num:	001
Container Num:	#0001
Year Installed:	1972
Tank Capacity:	00000000
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Visual

HAZNET:

Year:	2003
Gepaid:	CAC002562507
Contact:	MAYER BASSIRAT
Telephone:	2138919030
Mailing Name:	Not reported
Mailing Address:	940 S HILL ST STE E
Mailing City,St,Zip:	LOS ANGELES, CA 90015

GOODYEAR SERVICE CENTER #9265 (Continued) **U001560614**

Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	3.12
Facility County:	Los Angeles

AZ333 **TEXACO COMPANY THE OFFICE** **EDR Historical Auto Stations** **1009082115**
929 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 1 of 2 in cluster AZ

Relative: Lower

Actual: 250 ft.

EDR Historical Auto Stations:

Name:	TEXAS CO THE (CALIFORNIA)
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	TEXACO COMPANY THE OFFICE
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	TEXAS CO THE OFFICE
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AK334 **KAY WONG** **EDR Historical Cleaners** **1009191108**
1002 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 10 of 14 in cluster AK

Relative: Lower

Actual: 252 ft.

EDR Historical Cleaners:

Name:	KEE WONG
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	KAY WONG
Year:	1942
Type:	LAUNDRIES ORIENTAL

AN335 **COMMUNITY REDEVELOPMENT** **CA FID UST** **S101588157**
956 S HOPE ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 12 in cluster AN

Relative: Lower

Actual: 251 ft.

CA FID UST:

Facility ID:	19056393
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000

COMMUNITY REDEVELOPMENT (Continued) **S101588157**

Mail To:	Not reported
Mailing Address:	956 S HOPE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6931
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

AO336 **BATSON N S** **EDR Historical Auto Stations** **1009079063**
936 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 15 of 19 in cluster AO

Relative: Higher

Actual: 255 ft.

EDR Historical Auto Stations:

Name:	BATSON N S
Year:	1933
Type:	AUTOMOBILE REPAIRING

---

337 **J E ROBERTS CO** **HAZNET** **S104565539**
300 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Relative: Lower

Actual: 251 ft.

HAZNET:

Year:	1995
Gepaid:	CAC001130816
Contact:	J E ROBERTS CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	15660 N DALLAS PKWY
Mailing City,St,Zip:	DALLAS, TX 752480000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352

J E ROBERTS CO (Continued) **S104565539**

TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Recycler
Tons: .2293
Facility County: Los Angeles

Year: 1995
Gepaid: CAC001130816
Contact: J E ROBERTS CO
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 15660 N DALLAS PKWY
Mailing City,St,Zip: DALLAS, TX 752480000
Gen County: Los Angeles
TSD EPA ID: CAT080010101
TSD County: San Diego
Waste Category: Contaminated soil from site clean-up
Disposal Method: Transfer Station
Tons: .7500
Facility County: Los Angeles

AN338 **WARD GRIFFEN** **EDR Historical Auto Stations** **1009079274**
1030 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 6 of 12 in cluster AN

Relative: EDR Historical Auto Stations:
Lower Name: WARD GRIFFEN
Year: 1929
Actual: Type: AUTOMOBILE REPAIRING AND SERVICE STATIONS
249 ft.

AZ339 **CAST REAL ESTATE HOLDINGS** **HAZNET** **S109928971**
939 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 2 in cluster AZ

Relative: HAZNET:
Lower Year: 2008
Gepaid: CAC002629543
Actual: Contact: MARK COHEN
250 ft. Telephone: 2136265321
Mailing Name: Not reported
Mailing Address: 939 S BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900151619
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 2.085
Facility County: Los Angeles

AK340 **SHELL SERVICE STATION** **RCRA-SQG** **1005441239**
504 W OLYMPIC **FINDS** **CAR000117028**
< 1/8 **LOS ANGELES, CA 90015** **HAZNET**
1 ft.

Site 11 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

RCRA-SQG:

Date form received by agency:	05/21/2002
Facility name:	SHELL SERVICE STATION
Facility address:	504 W OLYMPIC S A P 121340 LOS ANGELES, CA 900151410
EPA ID:	CAR000117028
Mailing address:	P O BOX 2648 HOUSTON, TX 772522648
Contact:	SONDRA BIENVENU
Contact address:	P O BOX 2648 HOUSTON, TX 772522648
Contact country:	US
Contact telephone:	(713) 241-5036
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	EQUILON ENT LLC DBA S O P US
Owner/operator address:	P O BOX 2648 HOUSTON, TX 77252
Owner/operator country:	Not reported
Owner/operator telephone:	(713) 241-5036
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

SHELL SERVICE STATION (Continued) **1005441239**

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D018
Waste name: BENZENE

Violation Status: No violations found

FINDS:

Registry ID: 110012543168

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 2009
Gepaid: CAR000117028
Contact: R HULL/ENV. REPORTING ANALYST
Telephone: 2818742224
Mailing Name: Not reported
Mailing Address: 12700 NORTHBOROUGH DR 300G03
Mailing City,St,Zip: Houston, TX 770670000
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.2
Facility County: Los Angeles

Year: 2009
Gepaid: CAR000117028
Contact: R HULL/ENV. REPORTING ANALYST
Telephone: 2818742224
Mailing Name: Not reported
Mailing Address: 12700 NORTHBOROUGH DR 300G03
Mailing City,St,Zip: Houston, TX 770670000

SHELL SERVICE STATION (Continued) **1005441239**

Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.209
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000117028
Contact:	R HULL/ENV. REPORTING ANALYST
Telephone:	2818742224
Mailing Name:	Not reported
Mailing Address:	12700 NORTHBOROUGH DR 300G03
Mailing City,St,Zip:	Houston, TX 770670000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0255
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAR000117028
Contact:	N CORTEZ/ENVT'L DATA ANALYST
Telephone:	2818742224
Mailing Name:	Not reported
Mailing Address:	12700 NORTHBOROUGH DR MFT 240-G
Mailing City,St,Zip:	Houston, TX 770672508
Gen County:	Los Angeles
TSD EPA ID:	CAD982484933
TSD County:	San Bernardino
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Disposal, Other
Tons:	15
Facility County:	Not reported

Year:	2004
Gepaid:	CAR000117028
Contact:	N CORTEZ/ENVT'L DATA ANALYST
Telephone:	2818742224
Mailing Name:	Not reported
Mailing Address:	12700 NORTHBOROUGH DR MFT 240-G
Mailing City,St,Zip:	Houston, TX 770672508
Gen County:	Los Angeles
TSD EPA ID:	CAD982484933
TSD County:	San Bernardino
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Disposal, Other
Tons:	15
Facility County:	Not reported

SHELL SERVICE STATION (Continued) **1005441239**

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

AV341 **BICKERGON IRON WORKS** **HAZNET** **S104568282**
CORNER OF 11TH & FIGUEROA **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 2 of 11 in cluster AV

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	1999
Gepaid:	CAC001471936
Contact:	BICKERGON IRON WORKS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	22118 VERMONT AVE
Mailing City,St,Zip:	TORRANCE, CA 905020000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Treatment, Tank
Tons:	1.251
Facility County:	Los Angeles

AH342 **BOTACH** **HAZNET** **S103657664**
403 WEST 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 3 of 3 in cluster AH

Relative:
Higher

Actual:
257 ft.

HAZNET:

Year:	1994
Gepaid:	CAC001002608
Contact:	BOTACH
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	5011 WEST PICO BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900190000
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.2500
Facility County:	Los Angeles

AR343 **JEMP'S SNACK, JOUNG SU KIM DBA** **EMI** **S106833432**
833 S. HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 4 of 7 in cluster AR

Relative: Higher

Actual: 255 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	73287
Air District Name:	SC
SIC Code:	5812
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AX344 **HOLIDAY INN** **UST** **U003781114**
1020 S FIGUEROA ST **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 14 in cluster AX

Relative: Lower

Actual: 248 ft.

UST:

Facility ID:	24750
Latitude:	34.04463
Longitude:	-118.26427

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	43873
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	43873
Air District Name:	SC
SIC Code:	9999

HOLIDAY INN (Continued) **U003781114**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AR345
< 1/8
1 ft.

LIBERTY NATIONAL ENT - SHAHRAM AFSHANI
830 S, HILL ST. #371
LOS ANGELES, CA 90014

FTTS
HIST FTTS
FINDS

1008893544
N/A

Site 5 of 7 in cluster AR

Relative:
Higher

Actual:
255 ft.

FTTS:

Case Number:	Not reported
Docket Number:	TSCA0920050004
Complaint Issue Date:	06/30/05
Abatement Amount:	0.0000
Proposed Penalty:	0.0000
Final Assessment:	13675.0000
Final Order Date:	06/30/05
Close Date:	/ /
Violations(s):	L4N

HIST FTTS:

Case Number:	Not reported
Docket Number:	TSCA0920050004
Complaint Issue Date:	06/30/2005
Abatement Amount:	0.0000
Proposed Penalty:	0.0000
Final Assessment:	13675.0000
Final Order Date:	06/30/2005
Close Date:	/ /
Violations(s):	L4N

FINDS:

Registry ID: 110023166973

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

AI346	**UNOCAL #3300**	**HIST CORTESE**	**S103065777**
	730 OLYMPIC BLVD W	**LUST**	**N/A**
< 1/8	**LOS ANGELES, CA 90015**	**EMI**	
1 ft.			

Site 2 of 8 in cluster AI

Relative: **Lower**

Actual: **250 ft.**

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900150070

LUST:

Region:	STATE
Global Id:	T0603700550
Latitude:	34.044564
Longitude:	-118.263789
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/30/1994
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	EL
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900150070
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Other Solvent or Non-Petroleum Hydrocarbon
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700550
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700550
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700550
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

UNOCAL #3300 (Continued) **S103065777**

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900150070
Status:	Case Closed
Substance:	Hydrocarbons
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Soil
Abatement Method Used at the Site:	Not reported
Global ID:	T0603700550
W Global ID:	W0607701254
Staff:	UNK
Local Agency:	19050
Cross Street:	FIGUEROA ST
Enforcement Type:	Not reported
Date Leak Discovered:	Not reported
Date Leak First Reported:	3/30/1994
Date Leak Record Entered:	6/30/1995
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	6/30/1995
Date the Case was Closed:	6/30/1994
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	OLD CASE #960105-23
Water System:	UNOCAL - JIM SCOTT
Well Name:	Not reported
Approx. Dist To Production Well (ft):	2846.8846760983907604686488895
Source of Cleanup Funding:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	3/30/1994
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	UNOCAL
RP Address:	376 S VALENCIA BREA CA 92621
Program:	LUST
Lat/Long:	34.0444172 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported

UNOCAL #3300 (Continued) **S103065777**

Assigned Name:	3901254-001GEN
Summary:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76680
Air District Name:	SC
SIC Code:	1311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AQ347 **BEGARIE JOHN** **EDR Historical Auto Stations** **1009076147**
916 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 4 in cluster AQ

Relative:
Lower

Actual:
254 ft.

EDR Historical Auto Stations:

Name:	BEGARIE JOHN
Year:	1924
Type:	AUTOMOBILE REPAIRING

---

348 **BRIGGS W M** **EDR Historical Auto Stations** **1009081964**
842 S OLIVE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Relative:
Higher

Actual:
257 ft.

EDR Historical Auto Stations:

Name:	BRIGGS W M
Year:	1942
Type:	AUTOMOBILE REPAIRING

AK349 **SHELL SERVICE STATION** **LUST** **S108087193**
504 OLYMPIC BLVD. W. **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 12 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

LUST:

Region:	STATE
Global Id:	T0603789214
Latitude:	34.0429341987085
Longitude:	-118.261127471924
Case Type:	LUST Cleanup Site

SHELL SERVICE STATION (Continued) **S108087193**

Status:	Open - Site Assessment
Status Date:	01/10/2008
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	MT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900150125
LOC Case Number:	30517
File Location:	Regional Board
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline, Fuel Oxygenates
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603789214
Contact Type:	Regional Board Caseworker
Contact Name:	MARYAM TAIDY
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	LOS ANGELES
Email:	mtaidy@waterboards.ca.gov
Phone Number:	2135766741
Global Id:	T0603789214
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/15/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	10/15/2010
Action:	Monitoring Report - Semi-Annually
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	10/15/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/15/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	10/15/2007

SHELL SERVICE STATION (Continued) **S108087193**

Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	07/15/2009
Action:	Monitoring Report - Semi-Annually
Global Id:	T0603789214
Action Type:	ENFORCEMENT
Date:	06/15/2009
Action:	Staff Letter
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/07/2011
Action:	Soil and Water Investigation Workplan
Global Id:	T0603789214
Action Type:	ENFORCEMENT
Date:	07/28/2006
Action:	Staff Letter
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/22/2009
Action:	Soil and Water Investigation Workplan
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	04/15/2009
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	07/15/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/10/2008
Action:	Soil and Water Investigation Workplan
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	04/15/2008
Action:	Monitoring Report - Quarterly
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	01/07/2011
Action:	Soil and Water Investigation Report
Global Id:	T0603789214
Action Type:	RESPONSE
Date:	07/06/2007
Action:	Tank Removal Report / UST Sampling Report

SHELL SERVICE STATION (Continued) **S108087193**

Global Id: T0603789214
Action Type: RESPONSE
Date: 04/15/2011
Action: Monitoring Report - Semi-Annually

Global Id: T0603789214
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603789214
Action Type: RESPONSE
Date: 06/30/2011
Action: Site Assessment Report

Global Id: T0603789214
Action Type: RESPONSE
Date: 10/15/2009
Action: Monitoring Report - Semi-Annually

Global Id: T0603789214
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603789214
Action Type: RESPONSE
Date: 04/15/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0603789214
Action Type: RESPONSE
Date: 07/15/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0603789214
Action Type: RESPONSE
Date: 10/15/2011
Action: Monitoring Report - Semi-Annually

Global Id: T0603789214
Action Type: RESPONSE
Date: 08/31/2006
Action: Other Report / Document

AM350 **ZEMMI WHOLDING INC** **HAZNET** **S105086521**
323 W 8TH ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 2 of 5 in cluster AM

Relative:
Lower

Actual:
254 ft.

HAZNET:
Year: 2000
Gepaid: CAC002280369
Contact: ZEMMI WHOLDING INC
Telephone: 2136227234
Mailing Name: Not reported

ZEMMI WHOLDING INC (Continued) **S105086521**

Mailing Address:	631 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Paint sludge
Disposal Method:	Transfer Station
Tons:	.2000
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002280369
Contact:	ZEMMI WHOLDING INC
Telephone:	2136227234
Mailing Name:	Not reported
Mailing Address:	631 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Transfer Station
Tons:	.2502
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002280369
Contact:	ZEMMI WHOLDING INC
Telephone:	2136227234
Mailing Name:	Not reported
Mailing Address:	631 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	.0625
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002280369
Contact:	ZEMMI WHOLDING INC
Telephone:	2136227234
Mailing Name:	Not reported
Mailing Address:	631 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Liquids with pH <= 2
Disposal Method:	Transfer Station
Tons:	.1500
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002280369

ZEMMI WHOLDING INC (Continued) **S105086521**

Contact:	ZEMMI WHOLDING INC
Telephone:	2136227234
Mailing Name:	Not reported
Mailing Address:	631 SO OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	.0025
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

AX351 **HOLIDAY INN/EMERIK CORP** **HAZNET** **S104568841**
1020 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 14 in cluster AX

Relative:
Lower

Actual:
248 ft.

HAZNET:

Year:	2000
Gepaid:	CAC001479024
Contact:	EMERICK CORP
Telephone:	2137481291
Mailing Name:	Not reported
Mailing Address:	1020 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	3.3712
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAC001479024
Contact:	EMERICK CORP
Telephone:	2137481291
Mailing Name:	Not reported
Mailing Address:	1020 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Treatment, Tank
Tons:	0.2502
Facility County:	Los Angeles

AW352 **BUCHER E R** **EDR Historical Auto Stations** **1009077219**
1021 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 4 of 4 in cluster AW

Relative:
Lower

Actual:
250 ft.

EDR Historical Auto Stations:

Name:	BUCHER E R
Year:	1924
Type:	AUTOMOBILE REPAIRING

AI353 **KREUTZER JOS** **EDR Historical Auto Stations** **1009081894**
709 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 3 of 8 in cluster AI

Relative:
Lower

Actual:
250 ft.

EDR Historical Auto Stations:

Name:	KREUTZER JOS
Year:	1942
Type:	AUTOMOBILE REPAIRING

AJ354 **TURNER G A** **EDR Historical Auto Stations** **1009083930**
435 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 9 of 12 in cluster AJ

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:

Name:	BECHTEL E H
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	TURNER G A
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AN355 **UNION BANK SERVICE CENTER** **HIST UST** **U001560634**
1000 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 7 of 12 in cluster AN

Relative:
Lower

Actual:
251 ft.

HIST UST:

Region:	STATE
Facility ID:	00000050920
Facility Type:	Other
Other Type:	COMPUTER CENTER
Total Tanks:	0004
Contact Name:	OLYMPIC BOULEVARD
Telephone:	2132366075
Owner Name:	UNION BANK
Owner Address:	445 SO. FIGUEROA STREET
Owner City,St,Zip:	LOS ANGELES, CA 90071
Tank Num:	001
Container Num:	1

UNION BANK SERVICE CENTER (Continued) **U001560634**

Year Installed: 1976
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 3/16 inches
Leak Detection: Not reported

Tank Num: 002
Container Num: 2
Year Installed: 1976
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: 3/16 inches
Leak Detection: Not reported

Tank Num: 003
Container Num: 3
Year Installed: 1976
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 3/16 inches
Leak Detection: Not reported

Tank Num: 004
Container Num: 4
Year Installed: 1976
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: 3/16 inches
Leak Detection: Not reported

AX356 **HOLIDAY INN** **HAZNET** **S108748448**
1020 FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 6 of 14 in cluster AX

Relative:
Lower

Actual:
248 ft.

HAZNET:
Year: 2006
Gepaid: CAC002606398
Contact: ARON NEIDERMAN
Telephone: 2137481291
Mailing Name: Not reported
Mailing Address: 1020 FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900151392
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Unspecified aqueous solution
Disposal Method: Treatment, Tank
Tons: 0.12
Facility County: Los Angeles

AJ357 **FOOTHILL THRIFT & LOAN** — **HAZNET** — **S103964688** / **N/A**

1010-1012 SOUTH OLIVE ST
LOS ANGELES, CA 90015

< 1/8
1 ft.

Site 10 of 12 in cluster AJ

Relative: **Lower**

Actual: **251 ft.**

HAZNET:

Year:	1994
Gepaid:	CAC000882624
Contact:	PATRICK GALETINE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1010-1012 SOUTH OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.3336
Facility County:	Los Angeles

AO358 **YUEN LEE** — **EDR Historical Cleaners** — **1009189701** / **N/A**

526 W 9TH ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 16 of 19 in cluster AO

Relative: **Higher**

Actual: **255 ft.**

EDR Historical Cleaners:

Name:	YUEN LEE
Year:	1933
Type:	LAUNDRIES CHINESE
Name:	YUEN LEE
Year:	1937
Type:	LAUNDRIES CHINESE
Name:	YUEN LEE
Year:	1942
Type:	LAUNDRIES ORIENTAL

AT359 **REAGAN KAZAR** — **EDR Historical Auto Stations** — **1009083112** / **N/A**

1055 S GRAND AVE
LOS ANGELES, CA

< 1/8
1 ft.

Site 3 of 7 in cluster AT

Relative: **Lower**

Actual: **249 ft.**

EDR Historical Auto Stations:

Name:	REAGAN KAZAR
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AO360 **HULLQUIST C J** — **EDR Historical Cleaners** — **1009187280** / **N/A**
528 W 9TH ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 17 of 19 in cluster AO

Relative: **Higher**
Actual: **255 ft.**

EDR Historical Cleaners:

Name:	HULLQUIST C J
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

AG361 **RANDLE W A** — **EDR Historical Auto Stations** — **1009077757** / **N/A**
860 S GRAND AVE
LOS ANGELES, CA

< 1/8
1 ft.

Site 4 of 4 in cluster AG

Relative: **Higher**
Actual: **257 ft.**

EDR Historical Auto Stations:

Name:	RANDLE W A
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS
Name:	WILLUMSEN E H
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION

AT362 **HANSEN SERVICE** — **EDR Historical Auto Stations** — **1009081305** / **N/A**
1053 S GRAND AVE
LOS ANGELES, CA

< 1/8
1 ft.

Site 4 of 7 in cluster AT

Relative: **Lower**
Actual: **249 ft.**

EDR Historical Auto Stations:

Name:	HANSEN SERVICE
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

AX363 **EMERIK HOTEL CORP** — **CA FID UST**, **SWEEPS UST**, **EMI** — **S101588262** / **N/A**
1020 S FIGUEROA ST
LOS ANGELES, CA 90015

< 1/8
1 ft.

Site 7 of 14 in cluster AX

Relative: **Lower**
Actual: **248 ft.**

CA FID UST:

Facility ID:	19056505
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	1020 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported

EMERIK HOTEL CORP (Continued) **S101588262**

NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7447
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	73664
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

---

364 **WILLYS DISTRIBUTORS SERVICE** **EDR Historical Auto Stations** **1009082021**
1058 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Relative:
Lower

Actual:
248 ft.

EDR Historical Auto Stations:

Name:	WILLYS DISTRIBUTORS SERVICE
Year:	1937
Type:	AUTOMOBILE REPAIRING

AN365 **UNION BANK SERVICE CENTER** **CA FID UST** **S101617177**
1000 S HOPE ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 8 of 12 in cluster AN

Relative:
Lower

Actual:
251 ft.

CA FID UST:

Facility ID:	19013307
Regulated By:	UTNKI
Regulated ID:	00050920
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132366075
Mail To:	Not reported
Mailing Address:	445 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	2850
Number:	Not reported
Board Of Equalization:	44-012585
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002850-000001
Actv Date:	Not reported
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	4

Status:	Not reported
Comp Number:	2850
Number:	Not reported
Board Of Equalization:	44-012585
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002850-000002
Actv Date:	Not reported
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

UNION BANK SERVICE CENTER (Continued) **S101617177**

Status:	Not reported
Comp Number:	2850
Number:	Not reported
Board Of Equalization:	44-012585
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002850-000003
Actv Date:	Not reported
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	2850
Number:	Not reported
Board Of Equalization:	44-012585
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002850-000004
Actv Date:	Not reported
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

AO366 **FIDM REALTY** **EMI** **S106831066**
909 S GRAND AVE. **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 18 of 19 in cluster AO

Relative:
Higher

Actual:
256 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76157
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AY367 **ROLDAN ALF** **EDR Historical Cleaners** **1009190498**
1091/2 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 5 in cluster AY

Relative: **Lower**

Actual: **244 ft.**

EDR Historical Cleaners:

Name:	ROLDAN ALF
Year:	1933
Type:	LAUNDRIES HAND

AR368 **LIBERTY NATIONAL ENTERPRISES** **FINDS** **1008930065**
830 HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 6 of 7 in cluster AR

Relative: **Higher**

Actual: **255 ft.**

FINDS:

Registry ID: 110022868146

Environmental Interest/Information System
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

BA369 **9TH & HILL PARTNERSHIP** **CA FID UST** **S101585657**
220 W 9TH ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 1 of 4 in cluster BA

Relative: **Lower**

Actual: **252 ft.**

CA FID UST:

Facility ID:	19027233
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	220 W 9TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported

9TH & HILL PARTNERSHIP (Continued) **S101585657**

NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: A
Comp Number: 4094
Number: 1
Board Of Equalization: Not reported
Ref Date: 06-25-93
Act Date: 04-26-94
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

AT370 **SILVER PROPERTIES TRUST** **HAZNET** **S107141867**
1051 S GRAND AVE **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 7 in cluster AT

Relative: Lower

Actual: 249 ft.

HAZNET:
Year: 2003
Gepaid: CAC002566695
Contact: LAURENCE BOOKMAN
Telephone: 8183775433
Mailing Name: Not reported
Mailing Address: 201 E OLYMPIC BLVD
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 84.28
Facility County: Los Angeles

AK371 **TEXACO STATION** **UST** **U003780840**
504 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 13 of 14 in cluster AK

Relative: Lower

Actual: 252 ft.

UST:
Facility ID: 24406
Latitude: 34.04303
Longitude: -118.26067

AF372 **SYSTEM SERVICE STATIONS** — **EDR Historical Auto Stations** — **1009081974** **N/A**
815 S OLIVE ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 7 of 7 in cluster AF

Relative: **Higher**

Actual: **258 ft.**

EDR Historical Auto Stations:

Name:	SYSTEM SERVICE STATIONS
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS

AL373 **BILTMORE CLEANERS** — **RCRA-SQG** **FINDS** **DRYCLEANERS** **HAZNET** — **1000857954** **CAD983674094**
342 W 9TH ST
LOS ANGELES, CA 90015

< 1/8
1 ft.

Site 6 of 6 in cluster AL

Relative: **Higher**

Actual: **255 ft.**

RCRA-SQG:

Date form received by agency:	12/06/1993
Facility name:	BILTMORE CLEANERS
Facility address:	342 W 9TH ST LOS ANGELES, CA 90015
EPA ID:	CAD983674094
Mailing address:	W NINETH ST LOS ANGELES, CA 90015
Contact:	BOB GREEN
Contact address:	342 W NINETH ST LOS ANGELES, CA 90015
Contact country:	US
Contact telephone:	(213) 624-3595
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	BOBBY JOE GREEN
Owner/operator address:	342 W 9TH ST LOS ANGELES, CA 90015
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 624-3595
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

BILTMORE CLEANERS (Continued) **1000857954**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002903476

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DRYCLEANERS:

EPA Id:	CAD983674094
NAICS Code:	81232
NAICS Description:	Drycleaning and Laundry Services (except Coin-Operated)
SIC Code:	7211
SIC Description:	Power Laundries, Family and Commercial
Create Date:	12/08/1995
Facility Active:	No
Inactive Date:	06/30/1998
Facility Addr2:	Not reported
Mailing Name:	Not reported
Mailing Address:	342 W 9TH ST
Mailing Address 2:	Not reported
Mailing State:	CA
Mailing Zip:	900151502
Owner Name:	BOBBY JOE GREEN
Owner Address:	342 W 9TH ST
Owner Address 2:	Not reported
Owner Telephone:	2135640301
Contact Name:	BOBBY JOE GREEN
Contact Address:	INACT PER 98VQ FINAL NOTICE
Contact Address 2:	- BATCH 4/27
Contact Telephone:	2136243595

HAZNET:

Year:	1998
Gepaid:	CAD983674094
Contact:	BOBBY JOE GREEN
Telephone:	2135640301
Mailing Name:	Not reported
Mailing Address:	342 W 9TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900151502
Gen County:	Los Angeles
TSD EPA ID:	CAD981397417

BILTMORE CLEANERS (Continued) **1000857954**

TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: .6737
Facility County: Los Angeles

Year: 1997
Gepaid: CAD983674094
Contact: BOBBY JOE GREEN
Telephone: 2135640301
Mailing Name: Not reported
Mailing Address: 342 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900151502
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: .2398
Facility County: Los Angeles

Year: 1997
Gepaid: CAD983674094
Contact: BOBBY JOE GREEN
Telephone: 2135640301
Mailing Name: Not reported
Mailing Address: 342 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900151502
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Not reported
Tons: .2398
Facility County: Los Angeles

Year: 1996
Gepaid: CAD983674094
Contact: BOBBY JOE GREEN
Telephone: 2135640301
Mailing Name: Not reported
Mailing Address: 342 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900151502
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: .4630
Facility County: Los Angeles

Year: 1995
Gepaid: CAD983674094

BILTMORE CLEANERS (Continued) **1000857954**

Contact:	BOBBY JOE GREEN
Telephone:	2135640301
Mailing Name:	Not reported
Mailing Address:	342 W 9TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900151502
Gen County:	Los Angeles
TSD EPA ID:	CAD981397417
TSD County:	Los Angeles
Waste Category:	Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method:	Recycler
Tons:	.2357
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

AN374 **THE STANDARD OIL CO GROUP** **HAZNET** **S106840496**
605 W OLYMPIC BLVD **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 9 of 12 in cluster AN

Relative:
Lower

Actual:
250 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002625336
Contact:	MEEDO CAREISAT
Telephone:	2135722022
Mailing Name:	Not reported
Mailing Address:	605 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900151400
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	75781
Air District Name:	SC
SIC Code:	0
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AJ375 **CHMIRS** **S105677845**
OLYMPIC & OLIVE **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 11 of 12 in cluster AJ

Relative:
Lower

Actual:
252 ft.

CHMIRS:

OES Incident Number:	01-0149
OES notification:	1/9/200109:04:18 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	US Towing
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	Ernest Paper Products
Incident Date:	1/8/200112:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported

(Continued) **S105677845**

Contained:	Yes
Site Type:	Road
E Date:	Not reported
Substance:	Gasoline
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	15
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Driver of vehicle was driving to make a delivery and was involved in a traffic collision, causing a fuel tank to be ruptured spilling gasoline.

AN376 **91030** **HIST UST** **U001560589**
599 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 10 of 12 in cluster AN

Relative:
Lower

Actual:
251 ft.

HIST UST:

Region:	STATE
Facility ID:	00000061971
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	COOK, MICHAEL W
Telephone:	2136140918
Owner Name:	CHEVRON U.S.A. INC.
Owner Address:	575 MARKET
Owner City,St,Zip:	SAN FRANCISCO, CA 94105

Tank Num:	001
Container Num:	1
Year Installed:	1971
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	0000250 unknown
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	2
Year Installed:	1971
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported

91030 (Continued) **U001560589**

Tank Construction:	0000250 unknown
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	3
Year Installed:	1971
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	0000250 unknown
Leak Detection:	Stock Inventor
Tank Num:	004
Container Num:	4
Year Installed:	1971
Tank Capacity:	00001000
Tank Used for:	WASTE
Type of Fuel:	Not reported
Tank Construction:	0000130 unknown
Leak Detection:	Stock Inventor

AU377 **UST** **U003976701**
409 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 5 in cluster AU

Relative: Lower

Actual: 253 ft.

UST:

Facility ID:	24156
Latitude:	34.04242
Longitude:	-118.25966

AX378 **HOLIDAY INN** **HAZNET** **S104567080**
1020 SO FIGUEROA **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 8 of 14 in cluster AX

Relative: Lower

Actual: 248 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001405888
Contact:	HOLIDAY INN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1020 SO FIGUEROA
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080025711
TSD County:	San Bernardino
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	.2710
Facility County:	Los Angeles

AE379 **MC BRYDE LUBRICATING SERVICE INC** **EDR Historical Auto Stations** **1009076579**
916 S HOPE ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 2 of 2 in cluster AE

Relative:
Lower

Actual:
252 ft.

EDR Historical Auto Stations:

Name:	MC BRYDE LUBRICATING SERVICE
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION
Name:	MC BRYDE LUBRICATING SERVICE INC
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

AI380 **PETROLEUM BUILDING THE** **HAZNET** **S109430248**
714 W OLYMPIC BOULEVARD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 4 of 8 in cluster AI

Relative:
Lower

Actual:
250 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000047943
Contact:	CANCELLED PER 95 FEE FORM HN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	714 W OLYMPIC BOULEVARD
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	18
Facility County:	Los Angeles
Year:	2007
Gepaid:	CAL000047943
Contact:	CANCELLED PER 95 FEE FORM HN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	714 W OLYMPIC BOULEVARD
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	14
Facility County:	Los Angeles
Year:	2007
Gepaid:	CAL000047943
Contact:	CANCELLED PER 95 FEE FORM HN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	714 W OLYMPIC BOULEVARD

PETROLEUM BUILDING THE (Continued) **S109430248**

Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.83
Facility County:	Los Angeles

AI381 **SHAMMAS REALTY** **CA FID UST** **S101583754**
714 W OLYMPIC BLVD **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 5 of 8 in cluster AI

Relative:
Lower

Actual:
250 ft.

CA FID UST:

Facility ID:	19005940
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	714 W OLYMPIC BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7181
Number:	1
Board Of Equalization:	Not reported
Ref Date:	07-06-93
Act Date:	07-06-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AS382 **< 1/8** **1 ft.**

COMMUNITY REDEVELOPMENT AGENCY LA INC
1050 S FLOWER ST
LOS ANGELES, CA 90015

NPDES **HAZNET** — **S107139084** **N/A**

Site 7 of 8 in cluster AS

Relative: **Lower**

Actual: **248 ft.**

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	187794
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C324204
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	10/20/2003
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/02/2010
Discharge Name:	Los Angeles Redevelopment Agency
Discharge Address:	354 S Spring St Ste 700
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90013

HAZNET:

Year:	2003
Gepaid:	CAC002185345
Contact:	LILLIAN BURKENHEIM
Telephone:	2139771600
Mailing Name:	Not reported
Mailing Address:	354 S SPRING ST STE 800
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	1.66
Facility County:	Los Angeles

AJ383 **< 1/8** **1 ft.**

PRATT W M
1027 S OLIVE ST
LOS ANGELES, CA

EDR Historical Auto Stations — **1009078370** **N/A**

Site 12 of 12 in cluster AJ

Relative: **Lower**

Actual: **251 ft.**

EDR Historical Auto Stations:

Name:	PRATT W M
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

AI384	**UNOCAL SERVICE STATION #3300**	**CA FID UST**	**S101585394**
	730 W OLYMPIC BLVD	**SWEEPS UST**	**N/A**
< 1/8	**LOS ANGELES, CA 90015**	**HAZNET**	
1 ft.			

Site 6 of 8 in cluster AI

Relative: **Lower**

Actual: **250 ft.**

CA FID UST:

Facility ID:	19023169
Regulated By:	UTNKI
Regulated ID:	00019079
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2137497756
Mail To:	Not reported
Mailing Address:	3701 WILSHIRE BOULEVARD-S
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	1380
Number:	Not reported
Board Of Equalization:	44-001057
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001380-000001
Actv Date:	Not reported
Capacity:	9940
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	4

Status:	Not reported
Comp Number:	1380
Number:	Not reported
Board Of Equalization:	44-001057
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001380-000002
Actv Date:	Not reported
Capacity:	9940
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

UNOCAL SERVICE STATION #3300 (Continued) **S101585394**

Status:	Not reported
Comp Number:	1380
Number:	Not reported
Board Of Equalization:	44-001057
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001380-000003
Actv Date:	Not reported
Capacity:	10000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	1380
Number:	Not reported
Board Of Equalization:	44-001057
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001380-000004
Actv Date:	Not reported
Capacity:	280
Tank Use:	OIL
Stg:	WASTE
Content:	WASTE OIL
Number Of Tanks:	Not reported

HAZNET:

Year:	1993
Gepaid:	CAD981645823
Contact:	UNION OIL COMPANY OF CALIFORNI
Telephone:	7144286560
Mailing Name:	Not reported
Mailing Address:	PO BOX 25376
Mailing City,St,Zip:	SANTA ANA, CA 927995376
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Treatment, Tank
Tons:	2.9190
Facility County:	Los Angeles

AU385 **TAYLOR T W** — **EDR Historical Auto Stations** — **1009077302** / **N/A**
962 S OLIVE ST
LOS ANGELES, CA

< 1/8
1 ft.

Site 5 of 5 in cluster AU

Relative: Lower
Actual: 254 ft.

EDR Historical Auto Stations:

Name:	TAYLOR T W
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION

AR386 **BROADWAY TRADE CTR** — **HAZNET** — **S103673722** / **N/A**
830 S HILL ST
LOS ANGELES, CA 90014

< 1/8
1 ft.

Site 7 of 7 in cluster AR

Relative: Higher
Actual: 255 ft.

HAZNET:

Year:	1997
Gepaid:	CAC001227896
Contact:	BROADWAY TRADE CTR
Telephone:	5629412233
Mailing Name:	Not reported
Mailing Address:	830 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.5056
Facility County:	Los Angeles

AI387 **UNION OIL SERVICE STATION 3300** — **HIST UST** — **U001560635** / **N/A**
730 W OLYMPIC BLVD
LOS ANGELES, CA 90015

< 1/8
1 ft.

Site 7 of 8 in cluster AI

Relative: Lower
Actual: 250 ft.

HIST UST:

Region:	STATE
Facility ID:	00000055962
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0001
Contact Name:	JOHN M. VRANJES
Telephone:	2137497756
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010

Tank Num:	001
Container Num:	3300-00
Year Installed:	Not reported
Tank Capacity:	00000196
Tank Used for:	WASTE
Type of Fuel:	06
Tank Construction:	Not reported

UNION OIL SERVICE STATION 3300 (Continued) **U001560635**

Leak Detection: None

AN388 **JOHNSON F O** **EDR Historical Auto Stations** **1009081564**
626 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 11 of 12 in cluster AN

Relative: **Lower**

Actual: **250 ft.**

EDR Historical Auto Stations:
Name: JOHNSON F O
Year: 1937
Type: GASOLINE AND OIL SERVICE STATIONS

AI389 **SERVICE STATION 3300** **HIST UST** **1000166719**
730 W OLYMPIC BLVD **N/A**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 8 of 8 in cluster AI

Relative: **Lower**

Actual: **250 ft.**

HIST UST:
Region: STATE
Facility ID: 00000019079
Facility Type: Gas Station
Other Type: Not reported
Total Tanks: 0004
Contact Name: JOHN M VRANJES
Telephone: 2137497756
Owner Name: UNION OIL COMPANY OF CALIFORNI
Owner Address: 3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip: LOS ANGELES, CA 90010

Tank Num: 001
Container Num: 3300-1
Year Installed: 1964
Tank Capacity: 00009940
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test, 10

Tank Num: 002
Container Num: 3300-2
Year Installed: 1964
Tank Capacity: 00009940
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor, Pressure Test, 10

Tank Num: 003
Container Num: 3300-3
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported

SERVICE STATION 3300 (Continued) **1000166719**

Leak Detection:	Stock Inventor, Pressure Test, 10
Tank Num:	004
Container Num:	3300-4
Year Installed:	1964
Tank Capacity:	00000280
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, Pressure Test, 10

AO390
< 1/8
1 ft.

LIPPERT LEONARD
902 S GRAND AVE
LOS ANGELES, CA

EDR Historical Auto Stations **1009082754**
N/A

Site 19 of 19 in cluster AO

Relative:
Higher

Actual:
256 ft.

EDR Historical Auto Stations:

Name:	LIPPERT BROS
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	LIPPERT LEONARD
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AK391
< 1/8
1 ft.

SHELL SERVICE STATION
504 W OLYMPIC BLVD
LOS ANGELES, CA 90015

RCRA-SQG **1005904452**
HAZNET **CAR000122838**

Site 14 of 14 in cluster AK

Relative:
Lower

Actual:
252 ft.

RCRA-SQG:

Date form received by agency:	05/08/2002
Facility name:	SHELL SERVICE STATION
Facility address:	504 W OLYMPIC BLVD SAP 121340 LOS ANGELES, CA 900151410
EPA ID:	CAR000122838
Mailing address:	PO BOX 2648 HOUSTON, TX 772522648
Contact:	SONDRA BIENVENU
Contact address:	PO BOX 2648 HOUSTON, TX 772522648
Contact country:	US
Contact telephone:	713-241-5036
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

SHELL SERVICE STATION (Continued) **1005904452**

Owner/Operator Summary:

Owner/operator name:	EQUILON ENTERPRISES LLC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	05/08/2002
Owner/Op end date:	Not reported

Owner/operator name:	EQUILON ENTERPRISES LLC
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	05/08/2002
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

HAZNET:

Year:	2004
Gepaid:	CAR000122838
Contact:	Sondra Bienvenu
Telephone:	7132415036
Mailing Name:	Not reported
Mailing Address:	12700 NORTHBOROUGH DRIVE MFT 240-G
Mailing City,St,Zip:	Houston, TX 770672508
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	0.01
Facility County:	Not reported

Year: 2003

SHELL SERVICE STATION (Continued) **1005904452**

Gepaid:	CAR000122838
Contact:	Sondra Bienvenu
Telephone:	7132415036
Mailing Name:	Not reported
Mailing Address:	12700 NORTHBOROUGH DRIVE MFT 240-G
Mailing City,St,Zip:	Houston, TX 770672508
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	0.02
Facility County:	Los Angeles

AN392 **CHEVRON 91030** — **CA FID UST**, **SWEEPS UST** — **S101586640**, **N/A**
599 W OLYMPIC BLVD
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 12 of 12 in cluster AN

Relative:
Lower

Actual:
251 ft.

CA FID UST:

Facility ID:	19054295
Regulated By:	UTNKI
Regulated ID:	00061971
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136140918
Mail To:	Not reported
Mailing Address:	575 MARKET ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	3483
Number:	Not reported
Board Of Equalization:	44-013029
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003483-000001
Actv Date:	Not reported
Capacity:	5000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	4

CHEVRON 91030 (Continued) **S101586640**

Status:	Not reported
Comp Number:	3483
Number:	Not reported
Board Of Equalization:	44-013029
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003483-000002
Actv Date:	Not reported
Capacity:	10000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	3483
Number:	Not reported
Board Of Equalization:	44-013029
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003483-000003
Actv Date:	Not reported
Capacity:	10000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	3483
Number:	Not reported
Board Of Equalization:	44-013029
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003483-000004
Actv Date:	Not reported
Capacity:	1000
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	Not reported

J393 **< 1/8** **1 ft.**	**CITICORP PLAZA** **725 S FIGUEROA ST** **LOS ANGELES, CA 90017**	**CA FID UST**	**S101584120** **N/A**

Site 9 of 14 in cluster J

Relative: **Higher**

Actual: **276 ft.**

CA FID UST:

Facility ID:	19008709
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	725 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

J394 **< 1/8** **1 ft.**	**CITICORP PLAZA** **725 S FIGUEROA ST** **LOS ANGELES, CA 90017**	**UST** **SWEEPS UST**	**U003780876** **N/A**

Site 10 of 14 in cluster J

Relative: **Higher**

Actual: **276 ft.**

UST:

Facility ID:	24447
Latitude:	34.04897
Longitude:	-118.26029

SWEEPS UST:

Status:	A
Comp Number:	6469
Number:	1
Board Of Equalization:	Not reported
Ref Date:	08-27-93
Act Date:	02-17-94
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-006469-000001
Actv Date:	08-27-93
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	2

Status:	A
Comp Number:	6469
Number:	1
Board Of Equalization:	Not reported
Ref Date:	08-27-93

CITICORP PLAZA (Continued) **U003780876**

Act Date: 02-17-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-006469-000002
Actv Date: 08-27-93
Capacity: 1
Tank Use: CHEMICAL
Stg: P
Content: UNKNOWN
Number Of Tanks: Not reported

J395 **EYP REALTY, LLC** **HAZNET** **S104582947**
725 SO FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 11 of 14 in cluster J

Relative:
Higher

Actual:
276 ft.

HAZNET:
Year: 2008
Gepaid: CAL000207541
Contact: PATRICK LACEY/PROPERTY MANAGER
Telephone: 2139557170
Mailing Name: Not reported
Mailing Address: 725 SO FIGUEROA ST #1850
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.187
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000207541
Contact: PATRICK LACEY/PROPERTY MANAGER
Telephone: 2139557170
Mailing Name: Not reported
Mailing Address: 725 SO FIGUEROA ST #1850
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Paint sludge
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.02085
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000207541
Contact: PATRICK LACEY/PROPERTY MANAGER
Telephone: 2139557170
Mailing Name: Not reported
Mailing Address: 725 SO FIGUEROA ST #1850
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD008252405

EYP REALTY, LLC (Continued) **S104582947**

TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.627
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000207541
Contact:	PATRICK LACEY/PROPERTY MANAGER
Telephone:	2139557170
Mailing Name:	Not reported
Mailing Address:	725 SO FIGUEROA ST #1850
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.22935
Facility County:	Los Angeles

Year:	2001
Gepaid:	CAL000207541
Contact:	PATRICK LACEY/GEN MGR
Telephone:	2139557170
Mailing Name:	Not reported
Mailing Address:	725 SO FIGUEROA ST #1850
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	San Bernardino
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Disposal, Other
Tons:	1
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

J396 **CUSHMAN & WAKEFIELD, PPLA PLAZ** **EMI** **S106829573**
725 S FIGUEROA ST , STE 1940 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 12 of 14 in cluster J

Relative: Higher

Actual: 276 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	67280
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0

CUSHMAN & WAKEFIELD, PPLA PLAZ (Continued) **S106829573**

NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

AY397 **A AND B AUTO BODY WORKS** **RCRA-SQG** **1000686077**
1101 S BROADWAY **FINDS** **CAD983633009**
< 1/8 **LOS ANGELES, CA 90015**
1 ft.

Site 3 of 5 in cluster AY

Relative:
Lower

Actual:
244 ft.

RCRA-SQG:

Date form received by agency:	04/22/1992
Facility name:	A AND B AUTO BODY WORKS
Facility address:	1101 S BROADWAY
	LOS ANGELES, CA 90061
EPA ID:	CAD983633009
Mailing address:	S BROADWAY
	LOS ANGELES, CA 90061
Contact:	JAMES PRICE
Contact address:	1101 S BROADWAY
	LOS ANGELES, CA 90061
Contact country:	US
Contact telephone:	(213) 754-2853
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	A AND B AUTO BODY WORKS
Owner/operator address:	1101 S BROADWAY
	LOS ANGELES, CA 90061
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 754-2853
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

A AND B AUTO BODY WORKS (Continued) **1000686077**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002874033

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

J398 **777 TOWER ASSOCATE** **HAZNET** **S103671987**
777 S FIGUEROA ST_STE 4050 **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 13 of 14 in cluster J

Relative: Higher

Actual: 262 ft.

HAZNET:

Year: 2001
Gepaid: CAL000169794
Contact: ROD STEENSEN
Telephone: 2132363934
Mailing Name: Not reported
Mailing Address: 777 S FIGUEROA ST_ STE 4050
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.08
Facility County: Not reported

Year: 2001
Gepaid: CAL000169794
Contact: ROD STEENSEN
Telephone: 2132363934
Mailing Name: Not reported
Mailing Address: 777 S FIGUEROA ST_ STE 4050
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Empty containers less than 30 gallons
Disposal Method: Recycler
Tons: 0.1
Facility County: Not reported

Year: 2000
Gepaid: CAL000169794

777 TOWER ASSOCATE (Continued) **S103671987**

Contact: 777 TOWER ASSOCATE
Telephone: 2132363946
Mailing Name: Not reported
Mailing Address: 777 S FIGUEROA ST_ STE 4050
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Treatment, Tank
Tons: .1668
Facility County: Los Angeles

Year: 1999
Gepaid: CAL000169794
Contact: 777 TOWER ASSOCATE
Telephone: 2132363946
Mailing Name: Not reported
Mailing Address: 777 S FIGUEROA ST_ STE 4050
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Tons: 0.15
Facility County: Los Angeles

Year: 1999
Gepaid: CAL000169794
Contact: 777 TOWER ASSOCATE
Telephone: 2132363946
Mailing Name: Not reported
Mailing Address: 777 S FIGUEROA ST_ STE 4050
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Transfer Station
Tons: 0.0075
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

AC399 **HAYTAYAN JEWELERS INC** **RCRA-SQG** **1000396432**
621 S HILL ST #806 **FINDS** **CAD981371297**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 10 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

RCRA-SQG:
Date form received by agency: 05/08/1986
Facility name: HAYTAYAN JEWELERS INC
Facility address: 621 S HILL ST #806
LOS ANGELES, CA 90014
EPA ID: CAD981371297

HAYTAYAN JEWELERS INC (Continued) **1000396432**

Mailing address:	629 S HILL ST #EIGHTH HUNDRED LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	621 S HILL ST #806 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-1298
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HAYATAYAN JEWELRY CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

HAYTAYAN JEWELERS INC (Continued) **1000396432**

FINDS:

Registry ID: 110002684131

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC400 **GOLDEN PYRAMID INC** **EMI** **S106831867**
629 S HILL ST #204 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 11 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	47961
Air District Name:	SC
SIC Code:	3324
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC401 **V J JEWELRY** **RCRA-SQG** **1000120959**
629 S HILL ST #607 **FINDS** **CAD982408023**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 12 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

RCRA-SQG:

Date form received by agency:	03/31/1988
Facility name:	V J JEWELRY
Facility address:	629 S HILL ST #607 LOS ANGELES, CA 90014
EPA ID:	CAD982408023
Mailing address:	S HILL ST #607 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	629 S HILL ST #607 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-9873

V J JEWELRY (Continued) **1000120959**

Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	VIC SARKISSIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002806036

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

V J JEWELRY (Continued) **1000120959**

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC402 **M & M HOLDING LLC** **HAZNET** **S100866991**
629 S HILL ST **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 13 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000213712
Contact:	TERESITA MATHEWS/OFFICE MGR
Telephone:	2136241335
Mailing Name:	Not reported
Mailing Address:	629 S HILL STE 1202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Not reported
TSD EPA ID:	CAD009007626
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	4
Facility County:	Los Angeles

Year:	2001
Gepaid:	CAL000213712
Contact:	TESS MATHEWS/OFFICE MGR
Telephone:	2136241335
Mailing Name:	Not reported
Mailing Address:	629 S HILL STE 1202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	3.11
Facility County:	Not reported

Year:	1996
Gepaid:	CAL000108141
Contact:	NASSER AND SUZEYMAN BINAFARD
Telephone:	2136231335
Mailing Name:	Not reported
Mailing Address:	2500 WILSHIRE BLVD STE 808
Mailing City,St,Zip:	LOS ANGELES, CA 900574313
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	4.2500
Facility County:	Los Angeles

M & M HOLDING LLC (Continued) **S100866991**

Year:	1995
Gepaid:	CAL000108141
Contact:	NASSER AND SUZEYMAN BINAFARD
Telephone:	2136231335
Mailing Name:	Not reported
Mailing Address:	2500 WILSHIRE BLVD STE 808
Mailing City,St,Zip:	LOS ANGELES, CA 900574313
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	.5000
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000108141
Contact:	NASSER AND SUZEYMAN BINAFARD
Telephone:	2136231335
Mailing Name:	Not reported
Mailing Address:	2500 WILSHIRE BLVD STE 808
Mailing City,St,Zip:	LOS ANGELES, CA 900574313
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	4.5928
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	18696
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	18696
Air District Name:	SC
SIC Code:	3299

M & M HOLDING LLC (Continued) **S100866991**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC403 **SHINE JEWELRY** **RCRA-SQG** **1000311612**
629 SOUTH HILL ST #906 07 **FINDS** **CAD981685316**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 14 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	SHINE JEWELRY
Facility address:	629 SOUTH HILL ST #906 07
	LOS ANGELES, CA 90014
EPA ID:	CAD981685316
Mailing address:	SOUTH HILL ST #906 07
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	KARAPET DEDEIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner

SHINE JEWELRY (Continued) **1000311612**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002752085

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC404 **AMERICAN HOME PROPERTIES** **RCRA-SQG** **1000360691**
629 S HILL ST **FINDS** **CAD981390842**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 15 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

RCRA-SQG:

Date form received by agency:	02/24/1986
Facility name:	AMERICAN HOME PROPERTIES
Facility address:	629 S HILL ST LOS ANGELES, CA 90014
EPA ID:	CAD981390842
Mailing address:	S HILL ST LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	629 S HILL ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 624-1335
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous

AMERICAN HOME PROPERTIES (Continued) **1000360691**

waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	AMERICAN HOME PROP
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002691436

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC405 **GOLDEN HORN** **HAZNET** **S106093479**
629 S HILL ST STE 400 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 16 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000253462
Contact:	Philip Aksoy/partner
Telephone:	2136295855
Mailing Name:	Not reported
Mailing Address:	629 S Hill St Ste 400
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	0.27
Facility County:	Not reported

AC406 **KITSINIAN JEWELRY** **RCRA-NonGen** **1000382366**
629 S HILL ST #200 **FINDS** **CAD098616774**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 17 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

RCRA-NonGen:

Date form received by agency:	02/27/1986
Facility name:	KITSINIAN JEWELRY
Facility address:	629 S HILL ST #200 LOS ANGELES, CA 90014
EPA ID:	CAD098616774
Mailing address:	S HILL ST #SECOND HUNDRED LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	629 S HILL ST #SECOND HUNDRED LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(415) 555-1212
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	SARKIS A KITSINIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED

KITSINIAN JEWELRY (Continued) **1000382366**

	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002665928

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC407 **S.A. KITSINIAN INC** **EMI** **S106838665**
629 S HILL ST #200 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 18 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	48515
Air District Name:	SC
SIC Code:	3324
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

S.A. KITSINIAN INC (Continued) **S106838665**

Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

AC408 **GOLDERN PYRAMID MFG, INC.** **RCRA-SQG** **1000188230**
629 SOUTH HILL ST. #204 **FINDS** **CAD982322927**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 19 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

RCRA-SQG:
Date form received by agency: 03/16/1988
Facility name: GOLDERN PYRAMID MFG, INC.
Facility address: 629 SOUTH HILL ST. #204
LOS ANGELES, CA 90014
EPA ID: CAD982322927
Contact: ENVIRONMENTAL MANAGER
Contact address: 629 SOUTH HILL ST. #204
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 623-9120
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: GARO KHESHVADJIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No

GOLDERN PYRAMID MFG, INC. (Continued) **1000188230**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002794110

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC409 **M & M HOLDING, LLC** **ENVIROSTOR** **S110494027**
629 S. HILL STREET #1202 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 20 of 73 in cluster AC

Relative: Higher

Actual: 266 ft.

ENVIROSTOR:

Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Chatsworth
Facility ID:	71003306
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	Not reported
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Not reported
Latitude:	0
Longitude:	0
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED

M & M HOLDING, LLC (Continued) **S110494027**

Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAL000213712
Alias Type: EPA Identification Number
Alias Name: 71003306
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1 Non-Submittal
Completed Date: 04/30/2001
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

AC410 **STARLITE JEWELRY MFG CO** **HAZNET** **S103989280**
607 S HILL ST, STE 846 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 21 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:
Year: 1995
Gepaid: CAD133597054
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 607 S HILL ST, STE 846
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: Not reported
Tons: .0625
Facility County: Los Angeles

AC411 **GOLD PANTHER** **HAZNET** **S103966258**
607 SOUTH HILL STREET STE 844 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 22 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1997
Gepaid:	CAL000157412
Contact:	HOVIG ABAJIAN
Telephone:	2136275447
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 844
Mailing City,St,Zip:	LOS ANGELES, CA 900141717
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles

AC412 **PACIFIC CHAIN & JLY MFG CO INC** **RCRA-SQG** **1000249944**
607 S HILL ST **FINDS** **CAD008377004**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 23 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	PACIFIC CHAIN & JLY MFG CO INC
Facility address:	607 S HILL ST LOS ANGELES, CA 90014
EPA ID:	CAD008377004
Mailing address:	S HILL ST LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	DUNST JOE
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported

PACIFIC CHAIN & JLY MFG CO INC (Continued) **1000249944**

Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002633605

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC413 **VARTKES JEWELRY CO INC** **RCRA-SQG** **1000414026**
607 SO HILL ST RM 731 **FINDS** **CAD982463663**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
1 ft.

Site 24 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:
Date form received by agency: 01/24/1989
Facility name: VARTKES JEWELRY CO INC
Facility address: 607 SO HILL ST RM 731
LOS ANGELES, CA 90014
EPA ID: CAD982463663
Mailing address: SO HILL ST RM 731
LOS ANGELES, CA 90014

VARTKES JEWELRY CO INC (Continued) **1000414026**

Contact:	ENVIRONMENTAL MANAGER
Contact address:	607 SO HILL ST RM 731
	LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-3882
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HELMSLEY-SPEAR CO INC
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002816935

VARTKES JEWELRY CO INC (Continued) **1000414026**

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1996
Gepaid:	CAD982463663
Contact:	VARTKES JEWELRY CO INC
Telephone:	2136223882
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 731
Mailing City,St,Zip:	LOS ANGELES, CA 900141716
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	.2293
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAD982463663
Contact:	VARTKES JEWELRY CO INC
Telephone:	2136223882
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 731
Mailing City,St,Zip:	LOS ANGELES, CA 900141716
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.3127
Facility County:	Los Angeles

AC414 **HELMUT H DREYER MFG** **RCRA-CESQG** **1004675366**
607 S HILL ST #734 **FINDS** **CAD042222281**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 25 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

RCRA-CESQG:

Date form received by agency:	01/20/1986
Facility name:	HELMUT H DREYER MFG
Facility address:	607 S HILL ST #734 LOS ANGELES, CA 90014
EPA ID:	CAD042222281
Mailing address:	607 S HILL ST #SEVENTH HUNDRED LOS ANGELES, CA 90014
Contact:	HELMUT DREYER
Contact address:	607 S HILL ST #SEVENTH HUNDRED LOS ANGELES, CA 90014

HELMUT H DREYER MFG (Continued) **1004675366**

Contact country: US
Contact telephone: (213) 628-5062
Contact email: Not reported
EPA Region: 09
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: HELMUT H DREYER
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No

HELMUT H DREYER MFG (Continued) **1004675366**

Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002644755

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC415 **1X CALF JEWELRY MART REALTY CORP** **HAZNET** **S103666636**
607 SO HILL ST **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
1 ft.

Site 26 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1995
Gepaid:	CAC000064581
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	3.3712
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000064581
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000064581
Contact:	Not reported
Telephone:	0000000000

1X CALF JEWELRY MART REALTY CORP (Continued) **S103666636**

Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000064581
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	11637
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	4
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

AC416 **ELDITZ JEWELERS CORPORATION** **HAZNET** **S103666637**
607 SOUTH HILL ST STE 400 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 27 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1994
Gepaid:	CAL000123380
Contact:	EDUARDO GARCIA PRESIDENT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 SOUTH HILL ST STE 400

ELDITZ JEWELERS CORPORATION (Continued) **S103666637**

Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	.2293
Facility County:	Los Angeles
Year:	1993
Gepaid:	CAL000123380
Contact:	EDUARDO GARCIA PRESIDENT
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 SOUTH HILL ST STE 400
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

AC417 **G&G JEWELRY** **HAZNET** **S103965438**
607 S HILL ST SUITE 215 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 28 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1996
Gepaid:	CAD981988348
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 215
Mailing City,St,Zip:	LOS ANGELES, CA 900141779
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.0834
Facility County:	Los Angeles

AC418 **CALIFORNIA JEWELRY MART** **RCRA-NonGen** **1000252218**
607 S HILL ST **FINDS** **CAD981395981**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
1 ft.

Site 29 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

RCRA-NonGen:

Date form received by agency:	06/22/1998
Facility name:	CALIFORNIA JEWELRY MART
Facility address:	607 S HILL ST

CALIFORNIA JEWELRY MART (Continued) **1000252218**

	LOS ANGELES, CA 90014
EPA ID:	CAD981395981
Contact:	JAMES H CLAXTON
Contact address:	8205 SANTA MONICA BLVD STE 1 3 LOS ANGELES, CA 90046
Contact country:	US
Contact telephone:	(213) 460-2858
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	CALIFORNIA JEWELRY MART
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009535459

Environmental Interest/Information System

CALIFORNIA JEWELRY MART (Continued) **1000252218**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 1997
Gepaid: CAD981395981
Contact: CAL JEWELRY MART REALTY CORP
Telephone: 2136272831
Mailing Name: Not reported
Mailing Address: 607 S HILL ST STE 838
Mailing City,St,Zip: LOS ANGELES, CA 900141717
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .0842
Facility County: Los Angeles

Year: 1997
Gepaid: CAD981395981
Contact: CAL JEWELRY MART REALTY CORP
Telephone: 2136272831
Mailing Name: Not reported
Mailing Address: 607 S HILL ST STE 838
Mailing City,St,Zip: LOS ANGELES, CA 900141717
Gen County: Los Angeles
TSD EPA ID: AZD983481813
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .8428
Facility County: Los Angeles

Year: 1997
Gepaid: CAD981395981
Contact: CAL JEWELRY MART REALTY CORP
Telephone: 2136272831
Mailing Name: Not reported
Mailing Address: 607 S HILL ST STE 838
Mailing City,St,Zip: LOS ANGELES, CA 900141717
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Disposal, Other
Tons: .1500
Facility County: Los Angeles

Year: 1997
Gepaid: CAD981395981
Contact: CAL JEWELRY MART REALTY CORP

CALIFORNIA JEWELRY MART (Continued) **1000252218**

Telephone:	2136272831
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 838
Mailing City,St,Zip:	LOS ANGELES, CA 900141717
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Recycler
Tons:	.0625
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAD981395981
Contact:	CAL JEWELRY MART REALTY CORP
Telephone:	2136272831
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 838
Mailing City,St,Zip:	LOS ANGELES, CA 900141717
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	.2293
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

AC419 **CALIFORNIA JEWELRY MART REALTY** **CA FID UST** **S101583731**
607 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **EMI**
1 ft.

Site 30 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

CA FID UST:

Facility ID:	19005776
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	607 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported

CALIFORNIA JEWELRY MART REALTY (Continued) **S101583731**

Comp Number:	6832
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	11637
Air District Name:	SC
SIC Code:	3911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	2
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	11637
Air District Name:	SC
SIC Code:	3911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	11637
Air District Name:	SC
SIC Code:	3911

CALIFORNIA JEWELRY MART REALTY (Continued) **S101583731**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC420 **JEWELS BY NICOLAS** **HAZNET** **1000205412**
607 S HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 31 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1996
Gepaid:	CAD981448905
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900141707
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.0208
Facility County:	Los Angeles

AC421 **ARSEN JEWELRY** **HAZNET** **S103950990**
607 SOUTH HILL STREET **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 32 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000049712
Contact:	DAVID FREEMEN
Telephone:	7145588813
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 725
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZT010010685
TSD County:	0
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles
Year:	1999

ARSEN JEWELRY (Continued) **S103950990**

Gepaid:	CAL000049712
Contact:	DAVID FREEMEN
Telephone:	7145588813
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 725
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	0.1251
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000049712
Contact:	DAVID FREEMEN
Telephone:	7145588813
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 725
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000049712
Contact:	DAVID FREEMEN
Telephone:	7145588813
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 725
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000624999
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	.1251
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000049712
Contact:	DAVID FREEMEN
Telephone:	7145588813
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 725
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1251

ARSEN JEWELRY (Continued) **S103950990**

Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

AC422 **ASTOURIAN JEWELRY MANUFACTURING** **HAZNET** **S103951152**
607 SOUTH HILL ST STE 841 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 33 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1996
Gepaid:	CAL000128150
Contact:	ASTOURIAN JEWELRY MANUFACTURIN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 841
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1668
Facility County:	Los Angeles

AC423 **KAZU JEWELERS, INC** **RCRA-SQG** **1000423897**
607 S HILL ST, STE 928 **FINDS** **CAD054770235**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
1 ft.

Site 34 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	KAZU JEWELERS, INC
Facility address:	607 S HILL ST, STE 928 LOS ANGELES, CA 90014
EPA ID:	CAD054770235
Mailing address:	S HILL ST, STE 928 LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

KAZU JEWELERS, INC (Continued) **1000423897**

Owner/Operator Summary:

Owner/operator name:	KAZU JEWELERS, INC
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009530793

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 1993
Gepaid: CAD054770235

KAZU JEWELERS, INC (Continued) **1000423897**

Contact:	KAZU JEWELERS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST STE 928
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles

AC424 **TOUCH OF GOLD** **HAZNET** **S103666638**
607 S HILL ST #531 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 35 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1994
Gepaid:	CAD981168909
Contact:	G.O. ADOMIAN
Telephone:	2134893368
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST #531
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD981685472
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	.3752
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAD981168909
Contact:	G.O. ADOMIAN
Telephone:	2134893368
Mailing Name:	Not reported
Mailing Address:	607 S HILL ST #531
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD981685472
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	.1876
Facility County:	Los Angeles

AC425	**SHIMA PEARL CO, INC**	**RCRA-SQG**	**1000294774**
	607 S HILL ST #602	**FINDS**	**CAD981450117**
< 1/8	**LOS ANGELES, CA 90014**		
1 ft.			

Site 36 of 73 in cluster AC

Relative: **Higher**

Actual: **267 ft.**

RCRA-SQG:

Date form received by agency:	03/04/1986
Facility name:	SHIMA PEARL CO, INC
Facility address:	607 S HILL ST #602 LOS ANGELES, CA 90014
EPA ID:	CAD981450117
Contact:	ENVIRONMENTAL MANAGER
Contact address:	607 S HILL ST #602 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 628-2640
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CALIF JEWELRY MART
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

SHIMA PEARL CO, INC (Continued) **1000294774**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002711209

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC426 **VALLE VELASCO CO** **RCRA-SQG** **1000279535**
607 S HILL ST **FINDS** **CAD982021784**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 37 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

RCRA-SQG:
Date form received by agency: 08/06/1987
Facility name: VALLE VELASCO CO
Facility address: 607 S HILL ST
LOS ANGELES, CA 90014
EPA ID: CAD982021784
Mailing address: S HILL ST
LOS ANGELES, CA 90014
Contact: ENVIRONMENTAL MANAGER
Contact address: 607 S HILL ST
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 627-1155
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: HECTOR E VALLE JR
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported

VALLE VELASCO CO (Continued) **1000279535**

Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009542414

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

F427 **RIO GRANDE OIL CO OFFICE** **EDR Historical Auto Stations** **1009080525**
427 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
1 ft.

Site 15 of 26 in cluster F

Relative:
Higher

Actual:
278 ft.

EDR Historical Auto Stations:
Name: RIO GRANDE OIL CO OFFICE
Year: 1937
Type: GASOLINE AND OIL SERVICE STATIONS

AC428 **JEWELERS MALL THE** **RCRA-SQG** **1000204322**
625 S HILL ST **FINDS** **CAD982504292**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 38 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

RCRA-SQG:

Date form received by agency:	12/14/1989
Facility name:	JEWELERS MALL THE
Facility address:	625 S HILL ST LOS ANGELES, CA 90014
EPA ID:	CAD982504292
Contact:	ENVIRONMENTAL MANAGER
Contact address:	625 S HILL ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 688-7722
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	WESTERN JEWELRY MART
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

JEWELERS MALL THE (Continued) **1000204322**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002835228

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC429 **HOVIG JEWELRY** **HAZNET** **S111082290**
625 S HILL ST STE B7 **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 39 of 73 in cluster AC

Relative:
Higher

Actual:
266 ft.

HAZNET:
Year: 2010
Gepaid: CAL000265931
Contact: OHANNES BARONIAN
Telephone: 2136226913
Mailing Name: Not reported
Mailing Address: 625 S HILL ST STE B7
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Not reported
TSD EPA ID: CAD982446874
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 7.506
Facility County: Los Angeles

M430 **635 HILL STREET COMPANY LLC** **HAZNET** **S107147217**
635 HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90014**
1 ft.

Site 32 of 56 in cluster M

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000223957
Contact:	E NIZAMIAN-MANAGING MEMBER
Telephone:	2136229677
Mailing Name:	Not reported
Mailing Address:	635 S HILL ST STE 202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.12
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000223957
Contact:	E NIZAMIAN-MANAGING MEMBER
Telephone:	2136229677
Mailing Name:	Not reported
Mailing Address:	635 S HILL ST STE 202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.45
Facility County:	Los Angeles

Year:	2004
Gepaid:	CAL000223957
Contact:	E NIZAMIAN-MANAGING MEMBER
Telephone:	2136229677
Mailing Name:	Not reported
Mailing Address:	635 S HILL ST STE 202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Recycler
Tons:	0.06
Facility County:	Not reported

Year:	2003
Gepaid:	CAL000223957
Contact:	E NIZAMIAN-MANAGING MEMBER
Telephone:	2136229677
Mailing Name:	Not reported

635 HILL STREET COMPANY LLC (Continued) **S107147217**

Mailing Address:	635 S HILL ST STE 202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	IND000646943
TSD County:	Los Angeles
Waste Category:	Laboratory waste chemicals
Disposal Method:	Disposal, Land Fill
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000223957
Contact:	E NIZAMIAN-MANAGING MEMBER
Telephone:	2136229677
Mailing Name:	Not reported
Mailing Address:	635 S HILL ST STE 202
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Recycler
Tons:	0.06
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

F431 **OLODORT JOS** **EDR Historical Cleaners** **1009185069**
415 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
0.000 mi.
2 ft. **Site 16 of 26 in cluster F**

Relative: Higher

Actual: 280 ft.

EDR Historical Cleaners:

Name:	OLODORT JOS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

F432 **V A OUTPATIENT CLINICS** **RCRA-NonGen** **1000685773**
425 S HILL ST **FINDS** **CAD983624222**
< 1/8 **LOS ANGELES, CA 90013** **HAZNET**
0.000 mi.
2 ft. **Site 17 of 26 in cluster F**

Relative: Higher

Actual: 278 ft.

RCRA-NonGen:

Date form received by agency:	09/15/1993
Facility name:	V A OUTPATIENT CLINICS
Facility address:	425 S HILL ST LOS ANGELES, CA 90013
EPA ID:	CAD983624222
Mailing address:	S HILL ST LOS ANGELES, CA 90013
Contact:	LORI PERSON
Contact address:	425 S HILL ST LOS ANGELES, CA 90013

V A OUTPATIENT CLINICS (Continued) **1000685773**

Contact country:	US
Contact telephone:	(213) 894-5289
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	V A OUTPATIENT CLINIC
Owner/operator address:	425 S HILL ST LOS ANGELES, CA 90013
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 894-5289
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002871535

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1993
Gepaid:	CAD983624222
Contact:	V A OUTPATIENT CLINIC
Telephone:	2138945289
Mailing Name:	Not reported

V A OUTPATIENT CLINICS (Continued) **1000685773**

Mailing Address:	425 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT080010101
TSD County:	San Diego
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	.1500
Facility County:	Los Angeles

F433 **SERRANO DANL** **EDR Historical Cleaners** **1009189505**
449 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA**
0.000 mi.
2 ft. **Site 18 of 26 in cluster F**

Relative: Higher

Actual: 276 ft.

EDR Historical Cleaners:

Name:	SERRANO DANL
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

F434 **SUBWAY TERMINAL BLDG** **EMI** **S106840203**
417 SO. HILL ST. **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.000 mi.
2 ft. **Site 19 of 26 in cluster F**

Relative: Higher

Actual: 279 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	1447
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

F435 **ANDERSON PHOTOGRAPHY & ASSOCIA** **HAZNET** **S103950159**
417 S HILL ST #445 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.000 mi.
2 ft. **Site 20 of 26 in cluster F**

Relative: Higher

Actual: 279 ft.

HAZNET:

Year:	1997
Gepaid:	CAL000004821
Contact:	ANDERSON LORRAINE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	417 S HILL ST #445
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.2085
Facility County:	Los Angeles

F436 **1X SUBWAY TERMINAL BUILDING** **HAZNET** **S104574290**
417 SO HILL ST #1080 **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.000 mi.
2 ft. **Site 21 of 26 in cluster F**

Relative: Higher

Actual: 279 ft.

HAZNET:

Year:	1999
Gepaid:	CAD981570385
Contact:	STB ASSOCIATES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	17.931
Facility County:	Los Angeles

F437 **FOREST CITY DEVELOPMENT** **HAZNET** **S108747433**
417 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.000 mi.
2 ft. **Site 22 of 26 in cluster F**

Relative: Higher

Actual: 279 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002603334
Contact:	TERESA MORELLI
Telephone:	2164163791
Mailing Name:	Not reported
Mailing Address:	50 PUBLIC SQ STE 1360
Mailing City,St,Zip:	CLEVELAND, OH 441132233

FOREST CITY DEVELOPMENT (Continued) **S108747433**

Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 3.53
Facility County: Los Angeles

F438 **FC SUBWAY TERMINAL BLG LESSOR LLC** **HAZNET** **S108206744**
417 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.000 mi.
2 ft. **Site 23 of 26 in cluster F**

Relative:
Higher

Actual:
279 ft.

HAZNET:
Year: 2005
Gepaid: CAC002591933
Contact: MIKE VAN EATTEN
Telephone: 2134880010
Mailing Name: Not reported
Mailing Address: 949 S HOPE STREET STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD080013352
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.22
Facility County: Not reported

F439 **F C SUBWAY TERMINAL LESSOR, LLC** **HAZNET** **S103658523**
417 S HILL ST **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.000 mi.
2 ft. **Site 24 of 26 in cluster F**

Relative:
Higher

Actual:
279 ft.

HAZNET:
Year: 2005
Gepaid: CAC002571051
Contact: MIKE VAN ETTEN
Telephone: 2134880010
Mailing Name: Not reported
Mailing Address: 949 S HOPE STE STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Transfer Station
Tons: 0.14
Facility County: Not reported

Year: 2004
Gepaid: CAC002571051
Contact: MIKE VAN ETTEN
Telephone: 2134880010

F C SUBWAY TERMINAL LESSOR, LLC (Continued) **S103658523**

Mailing Name: Not reported
Mailing Address: 949 S HOPE STE STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Transfer Station
Tons: 0.14
Facility County: Not reported

Year: 2003
Gepaid: CAC002571051
Contact: MIKE VAN ETTEN
Telephone: 2134880010
Mailing Name: Not reported
Mailing Address: 949 S HOPE STE STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 3.12
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002571051
Contact: MIKE VAN ETTEN
Telephone: 2134880010
Mailing Name: Not reported
Mailing Address: 949 S HOPE STE STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 183.73
Facility County: Los Angeles

Year: 2002
Gepaid: CAC002552905
Contact: Jeff Griswod/property mgr
Telephone: 2136877275
Mailing Name: Not reported
Mailing Address: 417 S Hill St Ste 200
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Disposal, Land Fill
Tons: 332.06
Facility County: Not reported

F C SUBWAY TERMINAL LESSOR, LLC (Continued) **S103658523**

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	1447
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AX440 **HINKLEY PAUL CO** **EDR Historical Auto Stations** **1009079453**
1059 S FIGUEROA ST **N/A**
< 1/8 **LOS ANGELES, CA**
0.000 mi.
2 ft. **Site 9 of 14 in cluster AX**

Relative: Lower

Actual: 246 ft.

EDR Historical Auto Stations:

Name:	HINKLEY PAUL CO
Year:	1924
Type:	AUTOMOBILE REPAIRING

E441 **THE ANGELUS PLAZA** **HAZNET** **S108756313**
255 S HILL ST **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.000 mi.
2 ft. **Site 7 of 11 in cluster E**

Relative: Higher

Actual: 311 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002653695
Contact:	ROMMEL JIMENEA X 331
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123500
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Tank bottom waste
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.3336
Facility County:	Los Angeles
Year:	2008

THE ANGELUS PLAZA (Continued) **S108756313**

Gepaid:	CAC002630012
Contact:	ROMMEL JIMENEA X 331
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123500
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	2.2935
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002630012
Contact:	ROMMEL JIMENEA X 331
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123500
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.418
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002630012
Contact:	ROMMEL JIMENEA X 331
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123500
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.075
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002599373
Contact:	ROMMEL JIMENEA/CHIEF ENG/EX: 331
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	911 N STUDEBAKER RD
Mailing City,St,Zip:	LONG BEACH, CA 908154900
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles

THE ANGELUS PLAZA (Continued) **S108756313**

Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.91
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

E442 **ANGELUS PLAZA** **CA FID UST** **S101588240**
255 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **EMI**
0.000 mi.
2 ft. **Site 8 of 11 in cluster E**

Relative: Higher

Actual: 311 ft.

CA FID UST:

Facility ID:	19056481
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	255 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7310
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-10-93
Act Date:	03-10-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76527
Air District Name:	SC

ANGELUS PLAZA (Continued) **S101588240**

SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

E443 **THE ANGELUS PLAZA** **UST** **U003780785**
245 S HILL ST **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
3 ft. **Site 9 of 11 in cluster E**

Relative:
Higher

Actual:
316 ft.

UST:

Facility ID:	24341
Latitude:	34.05247
Longitude:	-118.24837

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	64408
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

E444 **THE ANGELUS PLAZA/RHF BUNKER HILL CORPORATION** **CA FID UST** **S101584586**
245 S HILL ST **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
3 ft. **Site 10 of 11 in cluster E**

Relative:
Higher

Actual:
316 ft.

CA FID UST:

Facility ID:	19013153
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136234352
Mail To:	Not reported
Mailing Address:	245 S HILL ST

THE ANGELUS PLAZA/RHF BUNKER HILL CORPORATION (Continued) **S101584586**

Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 90012
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	8128
Number:	1
Board Of Equalization:	44-034906
Ref Date:	09-22-93
Act Date:	03-18-94
Created Date:	01-14-93
Tank Status:	A
Owner Tank Id:	8128
Swrcb Tank Id:	19-050-008128-000001
Actv Date:	09-22-93
Capacity:	550
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

BB445 **CITY VIEW LOFT PARTNERS LLC** **HAZNET** **S108202566**
249 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
3 ft. **Site 1 of 6 in cluster BB**

Relative:
Higher

Actual:
294 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002586008
Contact:	SEAN MASSON
Telephone:	5625905600
Mailing Name:	Not reported
Mailing Address:	244 TIME AVE
Mailing City,St,Zip:	LONG BEACH, CA 90802
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.84
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAC002586008
Contact:	SEAN MASSON
Telephone:	5625905600
Mailing Name:	Not reported
Mailing Address:	244 TIME AVE
Mailing City,St,Zip:	LONG BEACH, CA 90802

CITY VIEW LOFT PARTNERS LLC (Continued) **S108202566**

Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	11.79
Facility County:	Not reported

E446 **TIMES MIRROR** **HIST CORTESE** **S101297033**
240 HILL ST S **LUST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
3 ft. **Site 11 of 11 in cluster E**

Relative:
Higher

Actual:
318 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120107

LUST:

Region:	STATE
Global Id:	T0603700509
Latitude:	34.051813
Longitude:	-118.248431
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/19/1997
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AS
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120107
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Other Solvent or Non-Petroleum Hydrocarbon
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700509
Contact Type:	Regional Board Caseworker
Contact Name:	ADNAN SIDDIQUI
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	LOS ANGELES
Email:	asiddiqui@waterboards.ca.gov
Phone Number:	Not reported
Global Id:	T0603700509
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

TIMES MIRROR (Continued) **S101297033**

LUST:
Global Id: T0603700509
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900120107
Status: Case Closed
Substance: Hydrocarbons
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Remove Free Product
Global ID: T0603700509
W Global ID: W0605100582
Staff: AS
Local Agency: 19050
Cross Street: Not reported
Enforcement Type: Not reported
Date Leak Discovered: Not reported
Date Leak First Reported: 12/10/1991
Date Leak Record Entered: 12/11/1991
Date Confirmation Began: Not reported
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 9/29/1997
Date the Case was Closed: 8/19/1997
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Operator: Not reported
Water System: YMCA CAMP OF LOS ANGELES 2
Well Name: Not reported
Approx. Dist To Production Well (ft): 1952.6467401634376073083642517
Source of Cleanup Funding: UNK
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: 12/10/1991
Pollution Characterization Began: 9/25/1996
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: 1/1/1965
Hist Max MTBE Conc in Groundwater: 10
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Yes
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: TIME MIRROR

TIMES MIRROR (Continued) **S101297033**

RP Address:	TIMES MIRROR SQUARE, LOS ANGELES CA 90053
Program:	LUST
Lat/Long:	34.052298 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600582-001GEN
Summary:	03/03/97 - GW MONITORING OF WELLS 02/18/97, F.P. SHEEN IN MW-1 FREE PRODUCT REMEDIATED 9/24/97 - WELL ABANDONMENT

L447 **GRAND CENTRAL SQUARE LTD.** **HAZNET** **S103652116**
315 SO. BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.001 mi.
4 ft. **Site 2 of 10 in cluster L**

Relative:
Higher

Actual:
286 ft.

HAZNET:

Year:	1994
Gepaid:	CAC000919080
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	C/O YELLING COMPANY
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.8428
Facility County:	Los Angeles

L448 **GRAND CENTRAL MARKET** **HAZNET** **S102795317**
317 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.001 mi.
4 ft. **Site 3 of 10 in cluster L**

Relative:
Higher

Actual:
286 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002657741
Contact:	FILOMENA ERIMAN
Telephone:	2136874752
Mailing Name:	Not reported
Mailing Address:	317 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900131222
Gen County:	Not reported
TSD EPA ID:	CAD097030993
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

GRAND CENTRAL MARKET (Continued) **S102795317**

Tons:	0.0375
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAC000877328
Contact:	GRAND CENTRAL SQUARE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	304 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.6856
Facility County:	Los Angeles

L449 **GRAND CENTRAL SQUARE LTD PARTERNERSHIP** **HAZNET** **S108748014**
317 S BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.001 mi.
4 ft. **Site 4 of 10 in cluster L**

Relative:
Higher

Actual:
286 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002601650
Contact:	MASSIMO AVINCOLA
Telephone:	2136212000
Mailing Name:	Not reported
Mailing Address:	317 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900131222
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.84
Facility County:	Los Angeles

A450 **CHMIRS** **S105646098**
FIRST ST AND BROADWAY **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
4 ft. **Site 11 of 15 in cluster A**

Relative:
Higher

Actual:
300 ft.

CHMIRS:

OES Incident Number:	013506
OES notification:	Not reported
OES Date:	4/30/1996
OES Time:	08:59:56 AM
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported

(Continued) **S105646098**

Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	STORM DRAIN
Spill Site:	Not reported
Cleanup By:	MTA
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1996
Agency:	MTA
Incident Date:	0805 30APR96
Admin Agency:	Not reported
Amount:	6 GALS
Contained:	YES
Site Type:	RD
E Date:	Not reported
Substance:	ANTIFREEZE
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported

(Continued) **S105646098**

Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	RADITOR FAILED ON A BUS AND SPILLED CONTENTS.

A451 **LOS ANGELES TIMES** **CA FID UST** **S101584467**
130 S BROADWAY **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.001 mi.
4 ft. **Site 12 of 15 in cluster A**

Relative:
Higher

Actual:
298 ft.

CA FID UST:

Facility ID:	19011693
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	130 S BROADWAY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	7269
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

F452 | **S CALIFORNIA RAPID TRANSIT DIS** | **CA FID UST** | **S101586794**
436 S HILL ST | **SWEEPS UST** | **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.001 mi.
5 ft. **Site 25 of 26 in cluster F**

Relative: **Higher**

Actual: **277 ft.**

CA FID UST:

Facility ID:	19054472
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132372135
Mail To:	Not reported
Mailing Address:	436 S HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	5867
Number:	Not reported
Board Of Equalization:	44-013233
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-005867-000001
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	CHEMICAL
Stg:	PRODUCT
Content:	UNKNOWN
Number Of Tanks:	1

M453 | **701 S HILL LLC** | **HAZNET** | **S110370092**
701 S HILL ST | **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.001 mi.
5 ft. **Site 33 of 56 in cluster M**

Relative: **Higher**

Actual: **261 ft.**

HAZNET:

Year:	2009
Gepaid:	CAC002642910
Contact:	ANDREW CHU
Telephone:	2136889786
Mailing Name:	Not reported
Mailing Address:	23930 MADISON ST
Mailing City,St,Zip:	TORRANCE, CA 90505
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626

701 S HILL LLC (Continued) **S110370092**

TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 4.4
Facility County: Los Angeles

F454 **CAMERA READY** **RCRA-SQG** **1000212179**
NE **417 S HILL SUITE #301** **FINDS** **CAD982023327**
< 1/8 **LOS ANGELES, CA 90013**
0.001 mi.
6 ft. **Site 26 of 26 in cluster F**

Relative:
Higher

Actual:
279 ft.

RCRA-SQG:
Date form received by agency: 08/11/1987
Facility name: CAMERA READY
Facility address: 417 S HILL SUITE #301
LOS ANGELES, CA 90013
EPA ID: CAD982023327
Mailing address: S HILL SUITE #301
LOS ANGELES, CA 90013
Contact: ENVIRONMENTAL MANAGER
Contact address: 417 S HILL SUITE #301
LOS ANGELES, CA 90013
Contact country: US
Contact telephone: (213) 627-4621
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: JULIE JOHANNSEN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

CAMERA READY (Continued) **1000212179**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002779663

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

A455 **TRANSAMERICA OCCIDENTAL** **CA FID UST** **S101583738**
NE **150 S BROADWAY** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90011**
0.001 mi.
6 ft. **Site 13 of 15 in cluster A**

Relative:
Higher

Actual:
298 ft.

CA FID UST:

Facility ID:	19005822
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	150 S BROADWAY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900110000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

TRANSAMERICA OCCIDENTAL (Continued) **S101583738**

SWEEPS UST:

Status:	Not reported
Comp Number:	7183
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

BB456
NE
< 1/8
0.001 mi.
6 ft.

HIGH PERFORMANCE MAGAZINE
240 S BROADWAY 5TH FL
LOS ANGELES, CA 90012

RCRA-SQG **1000238384**
FINDS **CAD981368434**

Site 2 of 6 in cluster BB

Relative:
Higher

Actual:
294 ft.

RCRA-SQG:

Date form received by agency:	01/22/1986
Facility name:	HIGH PERFORMANCE MAGAZINE
Facility address:	240 S BROADWAY 5TH FL LOS ANGELES, CA 90012
EPA ID:	CAD981368434
Mailing address:	S BROADWAY FIFTH FL LOS ANGELES, CA 90012
Contact:	ENVIRONMENTAL MANAGER
Contact address:	240 S BROADWAY FIFTH FL LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(213) 687-3658
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ASTRO ARTZ
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

HIGH PERFORMANCE MAGAZINE (Continued) **1000238384**

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002682623

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

G457 **DOWNTOWN PROPERTIES LLC** **HAZNET** **S103970019**
North **818 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.001 mi.
6 ft. **Site 15 of 25 in cluster G**

Relative:
Higher

Actual:
277 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002641802
Contact:	JOHN GOLDRICK
Telephone:	2132138542
Mailing Name:	Not reported
Mailing Address:	818 W 7TH ST STE 410
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626

DOWNTOWN PROPERTIES LLC (Continued) **S103970019**

TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

Year: 2002
Gepaid: CAC002555873
Contact: JJ GOLDRICH
Telephone: 2138955901
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 100E
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 0.20
Facility County: Not reported

Year: 2002
Gepaid: CAC002555873
Contact: JJ GOLDRICH
Telephone: 2138955901
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 100E
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 12.64
Facility County: Not reported

Year: 1998
Gepaid: CAC001316672
Contact: CHRIS MURPHY
Telephone: 2136236760
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues 10 percent or more
Disposal Method: Recycler
Tons: .2293
Facility County: Los Angeles

G458
North
< 1/8
0.001 mi.
6 ft.

818 W 7TH ST
LOS ANGELES, CA 90017

Site 16 of 25 in cluster G

AST **A100345363**
N/A

Relative:
Higher

Actual:
277 ft.

AST:
Owner: LEVEL 3 COMMUNITACTIONS INC
Total Gallons: 5,200
Certified Unified Program Agencies: City of Los Angeles

G459
North
< 1/8
0.001 mi.
6 ft.

DOWNTOWN PROPERTIES LLC
818 W 7TH ST STE 720
LOS ANGELES, CA 90017

Site 17 of 25 in cluster G

HAZNET **S105086776**
N/A

Relative:
Higher

Actual:
277 ft.

HAZNET:
Year: 2000
Gepaid: CAC002284833
Contact: DOWNTOWN PROPERTIES LLC
Telephone: 2133750202
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 720
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZD980892731
TSD County: 99
Waste Category: Unspecified oil-containing waste
Disposal Method: Not reported
Tons: .4170
Facility County: Los Angeles

Year: 2000
Gepaid: CAC002284833
Contact: DOWNTOWN PROPERTIES LLC
Telephone: 2133750202
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 720
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZD980892731
TSD County: 99
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Not reported
Tons: 1.1263
Facility County: Los Angeles

Year: 2000
Gepaid: CAC002284833
Contact: DOWNTOWN PROPERTIES LLC
Telephone: 2133750202
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 720
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZD980892731
TSD County: 99
Waste Category: Unspecified aqueous solution
Disposal Method: Not reported

DOWNTOWN PROPERTIES LLC (Continued) **S105086776**

Tons: .0834
Facility County: Los Angeles

Year: 2000
Gepaid: CAC002284833
Contact: DOWNTOWN PROPERTIES LLC
Telephone: 2133750202
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 720
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZD980892731
TSD County: 99
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Tons: .0834
Facility County: Los Angeles

Year: 2000
Gepaid: CAC002284833
Contact: DOWNTOWN PROPERTIES LLC
Telephone: 2133750202
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 720
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: .3500
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

G460
North
< 1/8
0.001 mi.
6 ft.

DOWNTOWN PROPERTIES LLC **HAZNET** **S108746513**
818 W 7TH ST FL 4TH **N/A**
LOS ANGELES, CA 90017

Site 18 of 25 in cluster G

Relative:
Higher

Actual:
277 ft.

HAZNET:
Year: 2007
Gepaid: CAC002607597
Contact: LORI GREENSLAND/BUILDING MGR
Telephone: 2138955901
Mailing Name: Not reported
Mailing Address: 818 W 7TH ST STE 100
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

DOWNTOWN PROPERTIES LLC (Continued) **S108746513**

Year:	2006
Gepaid:	CAC002607597
Contact:	LORI GREENSLAND/BUILDING MGR
Telephone:	2138955901
Mailing Name:	Not reported
Mailing Address:	818 W 7TH ST STE 100
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.58
Facility County:	Los Angeles

G461 **THE HAMMERSON PROPERTY CALIF** **CA FID UST** **S101584107**
North **818 E 7TH ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.001 mi.
6 ft. **Site 19 of 25 in cluster G**

Relative:
Higher

Actual:
277 ft.

CA FID UST:

Facility ID:	19008558
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136234165
Mail To:	Not reported
Mailing Address:	818 W 7TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7348
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

I462 **T E G THE ENV GROUP** **HAZNET** **S102803069**
NE **351 S HILL ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.002 mi.
8 ft. **Site 3 of 3 in cluster I**

Relative:
Higher

Actual:
291 ft.

HAZNET:

Year:	1995
Gepaid:	CAC001033616
Contact:	T E G THE ENV GROUP
Telephone:	2137269696
Mailing Name:	Not reported
Mailing Address:	4710 S EASTERN AVE
Mailing City,St,Zip:	COMMERCE, CA 900400000
Gen County:	Los Angeles
TSD EPA ID:	AZD983481813
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	1.6856
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC001033616
Contact:	T E G THE ENV GROUP
Telephone:	2137269696
Mailing Name:	Not reported
Mailing Address:	4710 S EASTERN AVE
Mailing City,St,Zip:	COMMERCE, CA 900400000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	.6321
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC001033616
Contact:	T E G THE ENV GROUP
Telephone:	2137269696
Mailing Name:	Not reported
Mailing Address:	4710 S EASTERN AVE
Mailing City,St,Zip:	COMMERCE, CA 900400000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	.4214
Facility County:	Los Angeles

D463 **NE** **< 1/8** **0.002 mi.** **8 ft.**

SCHULMAN C C
103 N GRAND AVE
LOS ANGELES, CA

EDR Historical Cleaners **1009187569** **N/A**

Site 3 of 6 in cluster D

Relative: Higher

Actual: 394 ft.

EDR Historical Cleaners:

Name:	SCHULMAN C C
Year:	1929
Type:	LAUNDRIES HAND
Name:	GERALD G H
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	GERALD G H
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

BC464 **WSW** **< 1/8** **0.002 mi.** **9 ft.**

KIM Y H
426 W 11TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009185616** **N/A**

Site 1 of 3 in cluster BC

Relative: Lower

Actual: 246 ft.

EDR Historical Cleaners:

Name:	KIM Y H
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

A465 **NE** **< 1/8** **0.002 mi.** **9 ft.**

LOS ANGELES COUNTY LAW LIBRARY
301 W 1ST ST
LOS ANGELES, CA 90012

HAZNET **S108750434** **N/A**

Site 14 of 15 in cluster A

Relative: Higher

Actual: 301 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002626201
Contact:	MARCIA J KOSLOV EXT 319
Telephone:	2136293531
Mailing Name:	Not reported
Mailing Address:	301 W 1ST ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123140
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	10.2
Facility County:	Los Angeles
Year:	2007
Gepaid:	CAC002618197
Contact:	MARCIA J KOSLOV EXT 319
Telephone:	2136293531
Mailing Name:	Not reported

LOS ANGELES COUNTY LAW LIBRARY (Continued) **S108750434**

Mailing Address:	301 W 1ST ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123140
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	22.95
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002604652
Contact:	MARCIA J KOSLOV EXT 319
Telephone:	2136293531
Mailing Name:	Not reported
Mailing Address:	301 W 1ST ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123140
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	5.05
Facility County:	Los Angeles

A466 **LA LAW LIBRARY** **NPDES** **S111459690**
NE **301 WEST FIRST ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.002 mi.
9 ft. **Site 15 of 15 in cluster A**

Relative:
Higher

Actual:
301 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	4
Regulatory Measure Id:	419101
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C362851
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	01/20/2012
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Los Angeles County Law Library
Discharge Address:	301 West 1st Street
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90012

U467 **NNE** **< 1/8** **0.002 mi.** **9 ft.**

MOBIL OIL, CORPORATION **HIST CORTESE** **S105024745**
617 7TH **N/A**
LOS ANGELES, CA 90017

Site 3 of 21 in cluster U

Relative: Higher

Actual: 268 ft.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 3159

R468 **NNW** **< 1/8** **0.002 mi.** **10 ft.**

ADLAND EREN **EDR Historical Cleaners** **1009187913**
806 W 8TH ST **N/A**
LOS ANGELES, CA

Site 10 of 13 in cluster R

Relative: Higher

Actual: 256 ft.

EDR Historical Cleaners:
Name: ROTHBLATT AARON
Year: 1924
Type: LAUNDRIES

Name: ROTHBLATT AARON
Year: 1929
Type: LAUNDRIES HAND

Name: PECK ABR
Year: 1933
Type: LAUNDRIES HAND

Name: ADLAND EREN
Year: 1937
Type: LAUNDRIES HAND

Name: ADLAND CLARA
Year: 1942
Type: LAUNDRIES HAND

B469 **NE** **< 1/8** **0.002 mi.** **10 ft.**

THE ANGELUS PLAZA **EMI** **S106840812**
200 S OLIVE ST **N/A**
LOS ANGELES, CA 90012

Site 2 of 5 in cluster B

Relative: Higher

Actual: 354 ft.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 76524
Air District Name: SC
SIC Code: 6512
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0

THE ANGELUS PLAZA (Continued) **S106840812**

NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

B470
NE
< 1/8
0.002 mi.
10 ft.

ANGELUS PLAZA
200 S OLIVE ST
LOS ANGELES, CA 90012

UST **U003780778**
N/A

Site 3 of 5 in cluster B

Relative:
Higher

Actual:
354 ft.

UST:
Facility ID: 24335
Latitude: 34.05374
Longitude: -118.24884

B471
NE
< 1/8
0.002 mi.
10 ft.

THE ANGELUS PLAZA
200 SO. OLIVE
LOS ANGELES, CA 90012

HAZNET **S103990743**
N/A

Site 4 of 5 in cluster B

Relative:
Higher

Actual:
354 ft.

HAZNET:
Year: 1995
Gepaid: CAC000928784
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 255 SO. HILL ST.
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CT/800133521
TSD County: 0
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Tons: .2085
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000928784
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 255 SO. HILL ST.
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: .2085
Facility County: Los Angeles

AS472 **LAUSD/ FIGUEROA ST ELEM** **HAZNET** **S103974450**
WSW **510 W 11TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90044**
0.002 mi.
10 ft. **Site 8 of 8 in cluster AS**

Relative: Lower

Actual: 245 ft.

HAZNET:

Year:	2009
Gepaid:	CAD982045601
Contact:	SOE AUNG / ECM
Telephone:	2132413199
Mailing Name:	Not reported
Mailing Address:	333 S BEAUDRY AVE 20TH FLOOR
Mailing City,St,Zip:	Los Angeles, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAD982045601
Contact:	YI HWA KIM DEPUTY DIRECTOR
Telephone:	2137435086
Mailing Name:	Environmental Health & Safety
Mailing Address:	333 S Beaudry Ave 20th Fl
Mailing City,St,Zip:	Los Angeles, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	AZR000005454
TSD County:	99
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Other Treatment
Tons:	0.0065
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAD982045601
Contact:	YI HWA KIM DEPUTY DIRECTOR
Telephone:	2137435086
Mailing Name:	Not reported
Mailing Address:	333 S Beaudry Ave 20th Fl
Mailing City,St,Zip:	Los Angeles, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	12.64
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAD982045601
Contact:	YI HWA KIM DEPUTY DIRECTOR
Telephone:	2137435086
Mailing Name:	Not reported
Mailing Address:	333 S Beaudry Ave 20th Fl

LAUSD/ FIGUEROA ST ELEM (Continued) **S103974450**

Mailing City,St,Zip:	Los Angeles, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAL000827758
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	1.47
Facility County:	Not reported

Year:	2004
Gepaid:	CAD982045601
Contact:	YI HWA KIM DEPUTY DIRECTOR
Telephone:	2137435086
Mailing Name:	Not reported
Mailing Address:	333 S Beaudry Ave 20th Fl
Mailing City,St,Zip:	Los Angeles, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAL000827758
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	1.47
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

B473 **MATT CONSTRUCTION** **HAZNET** **S109927514**
NE **201 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.002 mi.
10 ft. **Site 5 of 5 in cluster B**

Relative:
Higher

Actual:
355 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002626213
Contact:	SERGIO MAYORQUIN
Telephone:	5625779759
Mailing Name:	Not reported
Mailing Address:	9814 NORWALK BLVD STE 100
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 90670
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.209
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002626213
Contact:	SERGIO MAYORQUIN
Telephone:	5625779759
Mailing Name:	Not reported
Mailing Address:	9814 NORWALK BLVD STE 100
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 90670
Gen County:	Los Angeles

MATT CONSTRUCTION (Continued) **S109927514**

TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2502
Facility County:	Los Angeles

L474
NE
< 1/8
0.002 mi.
11 ft.

BRADBURY BUILDING
304 BROADWAY S.
LOS ANGELES, CA 90013

LUST **S108723423**
N/A

Site 5 of 10 in cluster L

Relative:
Higher

Actual:
287 ft.

LUST:

Region:	STATE
Global Id:	T0603783082
Latitude:	34.050809
Longitude:	-118.248129
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/19/2008
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900130089
LOC Case Number:	25467
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603783082
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported
Global Id:	T0603783082
Contact Type:	Regional Board Caseworker
Contact Name:	ARMAN TOUMARI
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 WEST 4TH STREET, SUITE 200
City:	LOS ANGELES
Email:	atoumari@waterboards.ca.gov
Phone Number:	2135766708

LUST:

Global Id:	T0603783082
Action Type:	RESPONSE
Date:	10/31/2007
Action:	Other Report / Document

BRADBURY BUILDING (Continued) **S108723423**

Global Id:	T0603783082
Action Type:	ENFORCEMENT
Date:	10/01/2007
Action:	Staff Letter
Global Id:	T0603783082
Action Type:	ENFORCEMENT
Date:	03/19/2008
Action:	Closure/No Further Action Letter
Global Id:	T0603783082
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0603783082
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

G475
North
< 1/8
0.002 mi.
12 ft.

BROADWAY PLAZA PHOTO
750 W 7TH ST
LOS ANGELES, CA 90017

Site 20 of 25 in cluster G

RCRA-SQG
FINDS
HAZNET
EMI

1000145730
CAD981993470

Relative:
Higher

Actual:
272 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	BROADWAY PLAZA PHOTO
Facility address:	750 W 7TH ST LOS ANGELES, CA 90017
EPA ID:	CAD981993470
Mailing address:	W 7TH ST LOS ANGELES, CA 90017
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator

BROADWAY PLAZA PHOTO (Continued) **1000145730**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: MASUDA ORWASHER TAKADA
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002769889

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 2010
Gepaid: CAL000195592
Contact: Macy’s Facility Management
Telephone: 7326315578
Mailing Name: Not reported
Mailing Address: 755 ROUTE 18
Mailing City,St,Zip: EAST BRUNSWICK, NJ 88160000
Gen County: Not reported
TSD EPA ID: UTD981552177
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture

BROADWAY PLAZA PHOTO (Continued) **1000145730**

Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000195592
Contact: Macy's Facility Management
Telephone: 7326315578
Mailing Name: Not reported
Mailing Address: 755 ROUTE 18
Mailing City,St,Zip: EAST BRUNSWICK, NJ 88160000
Gen County: Not reported
TSD EPA ID: TXD055141378
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.175
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000195592
Contact: Macy's Facility Management
Telephone: 7326315578
Mailing Name: Not reported
Mailing Address: 755 ROUTE 18
Mailing City,St,Zip: EAST BRUNSWICK, NJ 88160000
Gen County: Not reported
TSD EPA ID: TXD055141378
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.15
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000195592
Contact: Macy's Facility Management
Telephone: 7326315578
Mailing Name: Not reported
Mailing Address: 755 ROUTE 18
Mailing City,St,Zip: EAST BRUNSWICK, NJ 88160000
Gen County: Not reported
TSD EPA ID: UTD981552177
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.175
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000195592
Contact: Macy's Facility Management
Telephone: 7326315578
Mailing Name: Not reported
Mailing Address: 755 ROUTE 18
Mailing City,St,Zip: EAST BRUNSWICK, NJ 88160000
Gen County: Not reported

BROADWAY PLAZA PHOTO (Continued) **1000145730**

TSD EPA ID:	TXD055141378
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.1
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
23 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	44337
Air District Name:	SC
SIC Code:	5311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

L476 **MAS ASSET MGMT CORP** **HAZNET** **S108213378**
NE **304 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90071**
0.002 mi.
12 ft. **Site 6 of 10 in cluster L**

Relative:
Higher

Actual:
287 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002590723
Contact:	KASHA DALI
Telephone:	2134800111
Mailing Name:	Not reported
Mailing Address:	601 W 5TH ST STE 730
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Los Angeles
TSD EPA ID:	CAD980884183
TSD County:	Sacramento
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.05
Facility County:	Not reported

L477 **BRADBURY ASSOCIATES** **HAZNET** **S102823606**
NE **304 SOUTH BROADWAY_#201** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.002 mi.
12 ft. **Site 7 of 10 in cluster L**

Relative:
Higher

Actual:
287 ft.

HAZNET:

Year:	1996
Gepaid:	CAL000141654
Contact:	CALIF LIMITED PARTNERSHIP
Telephone:	2136261893
Mailing Name:	Not reported
Mailing Address:	304 S BROADWAY STE 201
Mailing City,St,Zip:	LOS ANGELES, CA 900131237
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	.0375
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000141654
Contact:	CALIF LIMITED PARTNERSHIP
Telephone:	2136261893
Mailing Name:	Not reported
Mailing Address:	304 S BROADWAY STE 201
Mailing City,St,Zip:	LOS ANGELES, CA 900131237
Gen County:	Los Angeles
TSD EPA ID:	AZD983481813
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.8428
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000141654
Contact:	CALIF LIMITED PARTNERSHIP
Telephone:	2136261893
Mailing Name:	Not reported
Mailing Address:	304 S BROADWAY STE 201
Mailing City,St,Zip:	LOS ANGELES, CA 900131237
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Treatment, Tank
Tons:	.8340
Facility County:	Los Angeles

L478 **NE** **< 1/8** **0.002 mi.** **12 ft.**

BRADBURY ASSOCIATES, LP
304 SOUTH BROADWAY STE 525
LOS ANGELES, CA 90013

HAZNET **S107142166** **N/A**

Site 8 of 10 in cluster L

Relative: **Higher**

Actual: **287 ft.**

HAZNET:

Year:	2003
Gepaid:	CAC002567474
Contact:	FRANCINE LIPSMAN
Telephone:	3236689070
Mailing Name:	FRANCINE LIPSMAN
Mailing Address:	304 SOUTH BROADWAY STE 525
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	14.37
Facility County:	Los Angeles

BB479 **NE** **< 1/8** **0.002 mi.** **12 ft.**

VICTOR CLOTHING COMPANY
242 S BROADWAY
LOS ANGELES, CA 90012

HAZNET **S106085066** **N/A**

Site 3 of 6 in cluster BB

Relative: **Higher**

Actual: **294 ft.**

HAZNET:

Year:	2002
Gepaid:	CAC002345097
Contact:	MIKE SILLS/PROFESSIONAL SERV
Telephone:	5625973977
Mailing Name:	Not reported
Mailing Address:	242 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	8.42
Facility County:	Not reported

Year:	2002
Gepaid:	CAC002345097
Contact:	MIKE SILLS/PROFESSIONAL SERV
Telephone:	5625973977
Mailing Name:	Not reported
Mailing Address:	242 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Not reported
Waste Category:	Tank bottom waste
Disposal Method:	Treatment, Tank
Tons:	4.06
Facility County:	Not reported

BB480 **CLINTON FIBANCIAL LLC** **HAZNET** **S106085768**
NE **242 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.002 mi.
12 ft. **Site 4 of 6 in cluster BB**

Relative:
Higher

Actual:
294 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002468239
Contact:	NATHAN CORMAN
Telephone:	3234643000
Mailing Name:	Not reported
Mailing Address:	PO BOX 67396
Mailing City,St,Zip:	LOS ANGELES, CA 900670000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	0.47
Facility County:	Not reported

BB481 **NEIGHBORHOOD EFFORT INC** **HAZNET** **S108214772**
NE **242 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.002 mi.
12 ft. **Site 5 of 6 in cluster BB**

Relative:
Higher

Actual:
294 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002608321
Contact:	ALAN GROSS
Telephone:	2133861435
Mailing Name:	Not reported
Mailing Address:	15303 VENTURA BLVD
Mailing City,St,Zip:	SHERMAN OAKS, CA 914036628
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	H14
Tons:	0.14
Facility County:	Los Angeles

Year:	2004
Gepaid:	CAC002574890
Contact:	ALAN GROSS
Telephone:	2133861435
Mailing Name:	Not reported
Mailing Address:	3345 WILSHIRE BLVD STE 1203
Mailing City,St,Zip:	LOS ANGELES, CA 90010
Gen County:	Los Angeles
TSD EPA ID:	CAD088504881
TSD County:	Orange
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	1.4
Facility County:	Not reported

BB482	**COLOR AD INC**	**HAZNET**	**S103958102**
NE	**240 S BROADWAY 5TH FLOOR**		**N/A**
< 1/8	**LOS ANGELES, CA 90012**		
0.002 mi.			
13 ft.	**Site 6 of 6 in cluster BB**		

Relative:
Higher

Actual:
294 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000144034
Contact:	DARYL OLDENKAMP PRESIDENT
Telephone:	2136177700
Mailing Name:	Not reported
Mailing Address:	19627 S SANTA FE AVE
Mailing City,St,Zip:	COMPTON, CA 902215914
Gen County:	Los Angeles
TSD EPA ID:	ARD981057870
TSD County:	99
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.74
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAL000144034
Contact:	DARYL OLDENKAMP PRESIDENT
Telephone:	2136177700
Mailing Name:	Not reported
Mailing Address:	19627 S SANTA FE AVE
Mailing City,St,Zip:	COMPTON, CA 902215914
Gen County:	Los Angeles
TSD EPA ID:	UTD981552177
TSD County:	99
Waste Category:	Unspecified alkaline solution
Disposal Method:	Treatment, Incineration
Tons:	0.17
Facility County:	Not reported

Year:	2003
Gepaid:	CAL000144034
Contact:	DARYL OLDENKAMP PRESIDENT
Telephone:	2136177700
Mailing Name:	Not reported
Mailing Address:	19627 S SANTA FE AVE
Mailing City,St,Zip:	COMPTON, CA 902215914
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	2.08
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000144034
Contact:	DARYL OLDENKAMP PRESIDENT
Telephone:	2136177700
Mailing Name:	Not reported
Mailing Address:	19627 S SANTA FE AVE
Mailing City,St,Zip:	COMPTON, CA 902215914

COLOR AD INC (Continued) **S103958102**

Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.24
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000144034
Contact:	DARYL OLDENKAMP PRESIDENT
Telephone:	2136177700
Mailing Name:	Not reported
Mailing Address:	19627 S SANTA FE AVE
Mailing City,St,Zip:	COMPTON, CA 902215914
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Unspecified sludge waste
Disposal Method:	Transfer Station
Tons:	0.83
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

AP483 **CAMP G N** **EDR Historical Auto Stations** **1009081466**
SSW **1100 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.002 mi.
13 ft. **Site 3 of 16 in cluster AP**

Relative:
Lower

Actual:
247 ft.

EDR Historical Auto Stations:

Name:	CAMP G N
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

L484 **HALL OF RECORDS/ LA CO. F.M.D.** **UST** **U003780805**
NE **320 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.003 mi.
14 ft. **Site 9 of 10 in cluster L**

Relative:
Higher

Actual:
286 ft.

UST:

Facility ID:	24365
Latitude:	34.05056
Longitude:	-118.24835

H485
NE
< 1/8
0.003 mi.
15 ft.

NEWBERRY 1 HOUR PHOTO
437 S BROADWAY
LOS ANGELES, CA 90013

HAZNET **S102816171** **N/A**

Site 11 of 13 in cluster H

Relative: **Higher**

Actual: **274 ft.**

HAZNET:

Year:	1994
Gepaid:	CAL000083429
Contact:	ANNA CHOI
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	336 BURNSIDE AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900360000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.2333
Facility County:	Los Angeles

L486
NE
< 1/8
0.003 mi.
15 ft.

SOLOMON ABR
322 S BROADWAY
LOS ANGELES, CA

EDR Historical Cleaners **1009191010** **N/A**

Site 10 of 10 in cluster L

Relative: **Higher**

Actual: **285 ft.**

EDR Historical Cleaners:

Name:	SOLOMON ABR
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

AM487
East
< 1/8
0.003 mi.
15 ft.

AMERICAN GENERAL
304 WEST 8TH STREET
LOS ANGELES, CA 90014

HAZNET **S103651230** **N/A**

Site 3 of 5 in cluster AM

Relative: **Lower**

Actual: **254 ft.**

HAZNET:

Year:	1993
Gepaid:	CAL930273394
Contact:	ALLEN C KIM
Telephone:	7148600516
Mailing Name:	Not reported
Mailing Address:	304 WEST 8TH STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.1042
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL930273394
Contact:	ALLEN C KIM

AMERICAN GENERAL (Continued) **S103651230**

Telephone:	7148600516
Mailing Name:	Not reported
Mailing Address:	304 WEST 8TH STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1334
Facility County:	Los Angeles

G488
North
< 1/8
0.003 mi.
16 ft.

COLEMAN EDWARDS
815 W 7TH ST
LOS ANGELES, CA

Site 21 of 25 in cluster G

EDR Historical Auto Stations **1009079332**
N/A

Relative:
Higher

Actual:
277 ft.

EDR Historical Auto Stations:

Name:	COLEMAN EDWARDS
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

P489
NE
< 1/8
0.003 mi.
18 ft.

GEORGE & NIA PIYKAR
500 WEST 7TH STREET
LOS ANGELES, CA 90013

Site 13 of 15 in cluster P

HAZNET **S106090156**
N/A

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002559462
Contact:	GEORGE PIYKAR
Telephone:	2137496636
Mailing Name:	Not reported
Mailing Address:	425 E PICO BLVD STE 206
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.84
Facility County:	Not reported

K490
ENE
< 1/8
0.003 mi.
18 ft.

RITE AID PHARMACY
501 SO BROADWAY
LOS ANGELES, CA 90013

Site 12 of 18 in cluster K

HAZNET **S103984679**
N/A

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year:	2005
Gepaid:	CAL000147079
Contact:	ERNESTO BROWN
Telephone:	2136260947
Mailing Name:	Not reported
Mailing Address:	30 HUNTER LANE
Mailing City,St,Zip:	CAMP HILL, PA 170110000
Gen County:	Los Angeles
TSD EPA ID:	CA0000084517
TSD County:	Sacramento
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.02
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000147079
Contact:	ERNESTO BROWN
Telephone:	2136260947
Mailing Name:	Not reported
Mailing Address:	30 HUNTER LANE
Mailing City,St,Zip:	CAMP HILL, PA 170110000
Gen County:	Los Angeles
TSD EPA ID:	CA0000084517
TSD County:	Sacramento
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.02
Facility County:	Not reported

Year:	2003
Gepaid:	CAL000147079
Contact:	ERNESTO BROWN
Telephone:	2136260947
Mailing Name:	Not reported
Mailing Address:	125 E BAKER ST #265
Mailing City,St,Zip:	COSTA MESA, CA 926260000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613968
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.12
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000147079
Contact:	ERNESTO BROWN
Telephone:	2136260947
Mailing Name:	Not reported
Mailing Address:	125 E BAKER ST #265
Mailing City,St,Zip:	COSTA MESA, CA 926260000

RITE AID PHARMACY (Continued) **S103984679**

Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Treatment, Tank
Tons:	0.06
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000147079
Contact:	ERNESTO BROWN
Telephone:	2136260947
Mailing Name:	Not reported
Mailing Address:	125 E BAKER ST #265
Mailing City,St,Zip:	COSTA MESA, CA 926260000
Gen County:	Los Angeles
TSD EPA ID:	CA0000084517
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.04
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
57 additional CA_HAZNET: record(s) in the EDR Site Report.

K491 **RITE AID STORE #5429** **HAZNET** **S103984683**
ENE **501 SOUTH BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.003 mi.
18 ft. **Site 13 of 18 in cluster K**

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000153186
Contact:	RITE AID CORPORATION
Telephone:	7177612633
Mailing Name:	Not reported
Mailing Address:	4020 STIRRUP CREEK DRIVE SUITE 211
Mailing City,St,Zip:	DURHAM, NC 277033165
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0208
Facility County:	Los Angeles

K492 | **ENE** | **< 1/8** | **0.003 mi.** | **18 ft.**

RITE AID
501 S BROADWAY
LOS ANGELES, CA 90013

HAZNET **S103984575** **N/A**

Site 14 of 18 in cluster K

Relative: Higher

Actual: 270 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001271200
Contact:	RITE AID CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	125 E BAKER ST STE 265
Mailing City,St,Zip:	COSTA MESA, CA 926260000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	12.6420
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001271200
Contact:	RITE AID CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	125 E BAKER ST STE 265
Mailing City,St,Zip:	COSTA MESA, CA 926260000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	21.0700
Facility County:	Los Angeles

U493 | **NNE** | **< 1/8** | **0.003 mi.** | **18 ft.**

GIP 7TH ST LLP
600 W 7TH ST
LOS ANGELES, CA 90017

HAZNET **S108747876** **N/A**

Site 4 of 21 in cluster U

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002603723
Contact:	IEAN SLAGLE
Telephone:	2136880963
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST STE 510
Mailing City,St,Zip:	LOS ANGELES, CA 900173864
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.12
Facility County:	Los Angeles

U494 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

RITE AID 6383
600 W SEVENTH ST
LOS ANGELES, CA 90017

FINDS — **1014672980** **N/A**

Site 5 of 21 in cluster U

Relative: Higher

Actual: 267 ft.

FINDS:

Registry ID: 110042181019

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

U495 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

CARRIER CENTER BUILDING
600 W 7TH ST
LOS ANGELES, CA 90017

HAZNET — **S108200913** **N/A**

Site 6 of 21 in cluster U

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002584908
Contact:	DAVE RECK
Telephone:	2132281160
Mailing Name:	Not reported
Mailing Address:	626 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.1
Facility County:	Not reported

U496 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

XO COMMUNICATIONS
600 W 7TH ST
LOS ANGELES, CA 90017

CA FID UST **SWEEPS UST** **HAZNET** — **S101585672** **N/A**

Site 7 of 21 in cluster U

Relative: Higher

Actual: 267 ft.

CA FID UST:

Facility ID:	19027511
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	UNK
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900210000

XO COMMUNICATIONS (Continued) **S101585672**

Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7906
Number:	1
Board Of Equalization:	Not reported
Ref Date:	05-04-93
Act Date:	03-29-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2008
Gepaid:	CAC002631889
Contact:	GREG STREIT
Telephone:	9492542544
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.935
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002631889
Contact:	GREG STREIT
Telephone:	9492542544
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)

XO COMMUNICATIONS (Continued) **S101585672**

Tons: 0.15
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002617302
Contact: DANIEL DE SANTIS/GM
Telephone: 2136880963
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST STE 434
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 2.52
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002617302
Contact: DANIEL DE SANTIS/GM
Telephone: 2136880963
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST STE 434
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 0.11
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002617302
Contact: DANIEL DE SANTIS/GM
Telephone: 2136880963
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST STE 434
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD008302903
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.01
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

U497 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

GIP 7TH ST LLC
600 W 7TH ST STE 540
LOS ANGELES, CA 90017

HAZNET **S110370149** **N/A**

Site 8 of 21 in cluster U

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	2009
Gepaid:	CAC002643042
Contact:	ANGELA CAMACHO
Telephone:	2138086003
Mailing Name:	Not reported
Mailing Address:	600 W 7TH ST STE 540
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2625
Facility County:	Los Angeles

U498 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

WESTERN WEATERPROOFING CO
600 7TH STREET
LOS ANGELES, CA 90017

HAZNET **S108225309** **N/A**

Site 9 of 21 in cluster U

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002592294
Contact:	DAN TYLER
Telephone:	7149208285
Mailing Name:	Not reported
Mailing Address:	720 DEBRA LN
Mailing City,St,Zip:	ANAHEIM, CA 92805
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.07
Facility County:	Not reported

U499 **NNE** **< 1/8** **0.003 mi.** **18 ft.**

CARRIER CENTER LOS ANGELES
600 W 7TH ST
LOS ANGELES, CA 90021

LUST **HAZNET** **S103985101** **N/A**

Site 10 of 21 in cluster U

Relative: **Higher**

Actual: **267 ft.**

LUST:

Region:	STATE
Global Id:	T0603716161
Latitude:	34.047597
Longitude:	-118.25719
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed

CARRIER CENTER LOS ANGELES (Continued) **S103985101**

Status Date:	06/12/1995
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	TP
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	Not reported
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603716161
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

Global Id:	T0603716161
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603716161
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0603716161
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

HAZNET:

Year:	1996
Gepaid:	CAC000954576
Contact:	ROBINSON - MAY CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	6160 LAUREL CANYON BLVD
Mailing City,St,Zip:	NORTH HOLLYWOOD, CA 916060000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler

CARRIER CENTER LOS ANGELES (Continued) **S103985101**

Tons: 30.5661
Facility County: Los Angeles

Year: 1994
Gepaid: CAC000954576
Contact: ROBINSON - MAY CO
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 6160 LAUREL CANYON BLVD
Mailing City,St,Zip: NORTH HOLLYWOOD, CA 916060000
Gen County: Los Angeles
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 2.0641
Facility County: Los Angeles

U500
NNE
< 1/8
0.003 mi.
18 ft.

CALIFORNIA INSTITUTE OF TECH
600 W 7TH ST
LOS ANGELES, CA 90017

UST **U003780518**
N/A

Site 11 of 21 in cluster U

Relative:
Higher

Actual:
267 ft.

UST:
Facility ID: 24082
Latitude: 34.04735
Longitude: -118.25671

U501
NNE
< 1/8
0.003 mi.
18 ft.

CARRIER CENTER LOS ANGELES
600 W 7TH ST
LOS ANGELES, CA 90017

HAZNET **S104570442**
N/A

Site 12 of 21 in cluster U

Relative:
Higher

Actual:
267 ft.

HAZNET:
Year: 2000
Gepaid: CAC002252617
Contact: CARRIER CENTER LA NEVADA CORP
Telephone: 2139484900
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: .1500
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002137633
Contact: H&R PROPERTIES REIT
Telephone: 2136131888
Mailing Name: Not reported

CARRIER CENTER LOS ANGELES (Continued) **S104570442**

Mailing Address: 600 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 0.1
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002137633
Contact: H&R PROPERTIES REIT
Telephone: 2136131888
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.5899
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002137633
Contact: H&R PROPERTIES REIT
Telephone: 2136131888
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Not reported
Disposal Method: Not reported
Tons: 15.62
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002137633
Contact: H&R PROPERTIES REIT
Telephone: 2136131888
Mailing Name: Not reported
Mailing Address: 600 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 201.6184
Facility County: Los Angeles

CARRIER CENTER LOS ANGELES (Continued) **S104570442**

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

U502 **RITE AID 6383** **RCRA-CESQG** **1014387704**
NNE **600 W SEVENTH ST** **CAR000212753**
< 1/8 **LOS ANGELES, CA 90017**
0.003 mi.
18 ft. **Site 13 of 21 in cluster U**

Relative:
Higher

Actual:
267 ft.

RCRA-CESQG:

Date form received by agency:	09/06/2010
Facility name:	RITE AID 6383
Facility address:	600 W SEVENTH ST LOS ANGELES, CA 90017
EPA ID:	CAR000212753
Mailing address:	30 HUNTER LN CAMP HILL, PA 17011
Contact:	STEPHANIE CAIATI
Contact address:	30 HUNTER LN CAMP HILL, PA 17011
Contact country:	US
Contact telephone:	717-730-8225
Contact email:	SSCAIATI@RITEAID.COM
EPA Region:	09
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	RITE AID CORP
Owner/operator address:	30 HUNTER LN CAMP HILL, PA 17011
Owner/operator country:	US
Owner/operator telephone:	717-730-8225
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	09/01/1962
Owner/Op end date:	Not reported

Owner/operator name:	RITE AID CORP
Owner/operator address:	30 HUNTER LN CAMP HILL, PA 17011
Owner/operator country:	US
Owner/operator telephone:	717-730-8225
Legal status:	Private

RITE AID 6383 (Continued) **1014387704**

Owner/Operator Type: Owner
Owner/Op start date: 09/01/1962
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D005
Waste name: BARIUM

Waste code: D006
Waste name: CADMIUM

Waste code: D007
Waste name: CHROMIUM

Waste code: D008
Waste name: LEAD

Waste code: D016
Waste name: 2,4-D

Waste code: D035

RITE AID 6383 (Continued) **1014387704**

Waste name: METHYL ETHYL KETONE

Waste code: U002
Waste name: ACETONE (I)

Waste code: U080
Waste name: METHANE, DICHLORO-

Waste code: U160
Waste name: 2-BUTANONE, PEROXIDE (R,T)

Violation Status: No violations found

U503
NNE
< 1/8
0.003 mi.
18 ft.

RITE AID 6383 **HAZNET** **S111084961**
600 W SEVENTH ST **N/A**
LOS ANGELES, CA 90017

Site 14 of 21 in cluster U

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year: 2010
Gepaid: CAR000212753
Contact: STEPHANIE CAIATI
Telephone: 7177308225
Mailing Name: Not reported
Mailing Address: 30 HUNTER LN
Mailing City,St,Zip: CAMP HILL, PA 170110000
Gen County: Not reported
TSD EPA ID: CAD008364432
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.007
Facility County: Los Angeles

Year: 2010
Gepaid: CAR000212753
Contact: STEPHANIE CAIATI
Telephone: 7177308225
Mailing Name: Not reported
Mailing Address: 30 HUNTER LN
Mailing City,St,Zip: CAMP HILL, PA 170110000
Gen County: Not reported
TSD EPA ID: CAD008364432
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.015
Facility County: Los Angeles

U504 **600 WEST 7TH STREET ASSOCIATES** **HAZNET** **S105082705**
NNE **600 WEST 7TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90071**
0.003 mi.
18 ft. **Site 15 of 21 in cluster U**

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	2000
Gepaid:	CAC001181728
Contact:	BRUCE A MILLER & ASOC,& ASTON
Telephone:	2137924555
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE 3850
Mailing City,St,Zip:	LOS ANGELES, CA 900710000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.4214
Facility County:	Los Angeles

P505 **THE SALTER COMPANY** **HAZNET** **S108199753**
NE **520 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.003 mi.
18 ft. **Site 14 of 15 in cluster P**

Relative: **Higher**

Actual: **266 ft.**

HAZNET:

Year:	2007
Gepaid:	CAC002611322
Contact:	MASON WRIGHT
Telephone:	3104739925
Mailing Name:	Not reported
Mailing Address:	1849 SAWTELLE BLVD STE 600
Mailing City,St,Zip:	LOS ANGELES, CA 90025
Gen County:	Los Angeles
TSD EPA ID:	CAD981696420
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.38
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAC002585415
Contact:	JAMES AUSTIN
Telephone:	3104739925
Mailing Name:	Not reported
Mailing Address:	1849 SAWTELL BLVD STE 600
Mailing City,St,Zip:	LOS ANGELES, CA 90025
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	29.49
Facility County:	Not reported

C506 **DEL PRATO JOHN** **EDR Historical Auto Stations** **1009082006**
NE **104 N HILL ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.004 mi.
19 ft. **Site 5 of 11 in cluster C**

Relative: Higher

Actual: 327 ft.

EDR Historical Auto Stations:

Name:	DEL PRATO JOHN
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

AY507 **ST HELENS PETROLEUM CORP OFFICE** **EDR Historical Auto Stations** **1009081687**
SSE **1031 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.004 mi.
19 ft. **Site 4 of 5 in cluster AY**

Relative: Lower

Actual: 246 ft.

EDR Historical Auto Stations:

Name:	ST HELENS PETROLEUM CORP OFFICE
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

AT508 **MOSES F N** **EDR Historical Auto Stations** **1009080466**
SW **1101 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.004 mi.
20 ft. **Site 6 of 7 in cluster AT**

Relative: Lower

Actual: 247 ft.

EDR Historical Auto Stations:

Name:	MOSES F N
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	MOSES F N
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	MOSES F N
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

AT509 **GRAND AVENUE LOFTS LP** **HAZNET** **S103622637**
SW **1100 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.004 mi.
21 ft. **Site 7 of 7 in cluster AT**

Relative: Lower

Actual: 247 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002571906
Contact:	ELLEN ROSE
Telephone:	3238604900
Mailing Name:	Not reported
Mailing Address:	6922 HOLLYWOOD BLVD 9TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 90028
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111

GRAND AVENUE LOFTS LP (Continued) **S103622637**

TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	290.76
Facility County:	Los Angeles
Year:	1996
Gepaid:	CAP601252149
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	000000000
Gen County:	0
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	1.2000
Facility County:	0

BD510 **ERNS** **92294311**
ENE **707 S BROADWAY ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.004 mi.
22 ft. **Site 1 of 18 in cluster BD**

Relative:
Higher

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual:
258 ft.

AV511 **POST POST** **EDR Historical Auto Stations** **1009077751**
West **1100 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.004 mi.
23 ft. **Site 3 of 11 in cluster AV**

Relative:
Lower

Actual:
245 ft.

EDR Historical Auto Stations:

Name:	POST POST
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

M512 **AMERICAN FLORIST EXCHANGE LTD** **HAZNET** **S104566139**
ENE **410 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.004 mi.
23 ft. **Site 34 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	1999
Gepaid:	CAC001316504
Contact:	AMERICAN FLORIST EXCHANGE LTD
Telephone:	8183452843
Mailing Name:	Not reported
Mailing Address:	754 WALL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900142344

AMERICAN FLORIST EXCHANGE LTD (Continued) **S104566139**

Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	1.4595
Facility County:	Los Angeles

M513	**D & Z**	**HAZNET**	**S105091087**
ENE	**404 WEST 7TH ST.**		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
0.005 mi.			
24 ft.	**Site 35 of 56 in cluster M**		

Relative: **Higher**

Actual: **262 ft.**

HAZNET:

Year:	2000
Gepaid:	CAL000177229
Contact:	ELIZABETH REMEDIOS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1213
Mailing City,St,Zip:	LOS ANGELES, CA 900141619
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	.0834
Facility County:	Los Angeles

M514	**CHAIN SMITH**	**EMI**	**S106828352**
ENE	**404 W 7TH ST, STE 726**		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
0.005 mi.			
24 ft.	**Site 36 of 56 in cluster M**		

Relative: **Higher**

Actual: **262 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	53559
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M515 **JEWELRY DESIGN CENTER** **ICIS** **1011577758**
ENE **404 W 7TH ST STE 1020 LOS ANGELES CA 90014** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 37 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

ICIS:

Enforcement Action ID:	09-1993-0032
FRS ID:	110009549140
Program ID:	RCRAINFO CAD983615139
Action Name:	JEWELRY DESIGN CENTER
Facility Name:	JEWELRY DESIGN CENTER
Facility Address:	404 W 7TH ST STE 1020 LOS ANGELES CA 90014 LOS ANGELES, California 90014
Enforcement Action Type:	Civil Judicial Action
Facility County:	Los Angeles
EPA Region #:	9

Enforcement Action ID:	09-1993-0032
FRS ID:	110009549140
Program ID:	HWTS-DATAMART CAD983615139
Action Name:	JEWELRY DESIGN CENTER
Facility Name:	JEWELRY DESIGN CENTER
Facility Address:	404 W 7TH ST STE 1020 LOS ANGELES CA 90014 LOS ANGELES, California 90014
Enforcement Action Type:	Civil Judicial Action
Facility County:	Los Angeles
EPA Region #:	9

Enforcement Action ID:	09-1993-0032
FRS ID:	110009549140
Program ID:	FRS 110009549140
Action Name:	JEWELRY DESIGN CENTER
Facility Name:	JEWELRY DESIGN CENTER
Facility Address:	404 W 7TH ST STE 1020 LOS ANGELES CA 90014 LOS ANGELES, California 90014
Enforcement Action Type:	Civil Judicial Action
Facility County:	Los Angeles
EPA Region #:	9

Program ID:	FRS 110009549140
Facility Name:	JEWELRY DESIGN CENTER
Address:	404 W 7TH ST STE 1020
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Latitude:	34.045973
Longitude:	-118.254623

Program ID:	HWTS-DATAMART CAD983615139
Facility Name:	JEWELRY DESIGN CENTER
Address:	404 W 7TH ST STE 1020
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Latitude:	34.045973

JEWELRY DESIGN CENTER (Continued) **1011577758**

Longitude:	-118.254623
Program ID:	RCRAINFO CAD983615139
Facility Name:	JEWELRY DESIGN CENTER
Address:	404 W 7TH ST STE 1020
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	Not reported
Latitude:	34.045973
Longitude:	-118.254623

M516 **R.N. JEWELRY** **EMI** **S106837939**
ENE **404 W 7TH STREET # 402** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 38 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	59961
Air District Name:	SC
SIC Code:	3324
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M517 **JEWELRY DESIGN CENTER** **ENVIROSTOR** **S110493956**
ENE **404 W. 7TH STREET #221** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 39 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

ENVIROSTOR:

Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Chatsworth
Facility ID:	71003145
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported

JEWELRY DESIGN CENTER (Continued) **S110493956**

Special Program: Not reported
Status: Refer: Other Agency
Status Date: Not reported
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 0
Longitude: 0
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD983615139
Alias Type: EPA Identification Number
Alias Name: 71003145
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

M518 **STEVE'S FINE JEWELRY** **EMI** **S106840108**
ENE **404 W 7TH ST SUITE 514** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 40 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 59889
Air District Name: SC
SIC Code: 3324
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

M519 **A&S JEWELRY CO** **HAZNET** **S103948314**
ENE **404 W 7TH #1226** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 41 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000028583
Contact:	MKHITARIAN ARMEN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141619
Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000028583
Contact:	MKHITARIAN ARMEN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141619
Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Laboratory waste chemicals
Disposal Method:	Recycler
Tons:	.0500
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000028583
Contact:	MKHITARIAN ARMEN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141619
Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Laboratory waste chemicals
Disposal Method:	Treatment, Incineration
Tons:	.0825
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000028583
Contact:	MKHITARIAN ARMEN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141619

A&S JEWELRY CO (Continued) **S103948314**

Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Recycler
Tons:	.6880
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000028583
Contact:	MKHITARIAN ARMEN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141619
Gen County:	Los Angeles
TSD EPA ID:	CAD009452657
TSD County:	San Mateo
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

M520 **A&S JEWELERS,A.MKHITARIAN,S.SI** **EMI** **S106825143**
ENE **404 W 7TH STREET 1226** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 42 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	59860
Air District Name:	SC
SIC Code:	3299
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M521 **KIRK-RICH DIALS** **FINDS** **1007469339**
ENE **404 W. 7TH STREET, SUITE 1215** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 43 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

FINDS:

Registry ID: 110017440205

Environmental Interest/Information System
CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

M522 **CAL-MART PLATING CO** **RCRA-SQG** **1000139348**
ENE **404 W 7TH ST** **FINDS** **CAD064598311**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
0.005 mi.
24 ft. **Site 44 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	CAL-MART PLATING CO
Facility address:	404 W 7TH ST
	LOS ANGELES, CA 90014
EPA ID:	CAD064598311
Mailing address:	404 WEST SEVENTH STREET
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	LEONARD VOGEL
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

CAL-MART PLATING CO (Continued) **1000139348**

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	08/18/1980
Facility name:	CAL-MART PLATING CO
Classification:	Large Quantity Generator

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date:	06/15/1994
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State Contractor/Grantee

FINDS:

Registry ID: 110002654271

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

CAL-MART PLATING CO (Continued) **1000139348**

corrective action activities required under RCRA.

HAZNET:
Year: 2004
Gepaid: CAD064598311
Contact: KENNY VOGEL
Telephone: 2136236987
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST STE 1404
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: AZT050010685
TSD County: 99
Waste Category: Aqueous solution (2 < pH < 12.5) containing reactive anions ...
Disposal Method: Recycler
Tons: 0.05
Facility County: Not reported

M523 **SARKISSIAN DESIGNS** **RCRA-SQG** **1000271008**
ENE **404 W 7TH 11TH FLOOR** **FINDS** **CAD981674658**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 45 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: SARKISSIAN DESIGNS
Facility address: 404 W 7TH 11TH FLOOR
LOS ANGELES, CA 90014
EPA ID: CAD981674658
Mailing address: W 7TH 11TH FLOOR
LOS ANGELES, CA 90014
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: DIKRAN SARKISSIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

SARKISSIAN DESIGNS (Continued) **1000271008**

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002746351

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M524 **KIRK-RICH DIALS** **CERCLIS** **1007372478**
ENE **404 W. 7TH STREET, SUITE 1215** **CAN000906068**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 46 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

CERCLIS:

Site ID:	0906068
EPA ID:	CAN000906068
Facility County:	LOS ANGELES
Short Name:	KIRK-RICH DIALS
Congressional District:	Not reported
IFMS ID:	09LQ
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility

KIRK-RICH DIALS (Continued) **1007372478**

DMNSN Number:	Not reported
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	R
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)
Non NPL Status Date:	20040226
Site Fips Code:	06037
CC Concurrence Date:	Not reported
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS Site Contact Name(s):

Contact ID:	9270721.00000
Contact Name:	Robert Wise
Contact Tel:	(562) 499-6312
Contact Title:	On-Scene Coordinator (OSC)
Contact Email:	Not reported

Contact ID:	9270485.00000
Contact Name:	Daniel Suter
Contact Tel:	(415) 972-3050
Contact Title:	On-Scene Coordinator (OSC)
Contact Email:	Not reported

Contact ID:	9271184.00000
Contact Name:	Karen Jurist
Contact Tel:	(415) 972-3219
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	13003854.00000
Contact Name:	Leslie Ramirez
Contact Tel:	(415) 972-3978
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	13003858.00000
Contact Name:	Sharon Murray
Contact Tel:	(415) 972-4250
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported

Contact ID:	13004003.00000
Contact Name:	Carl Brickner
Contact Tel:	Not reported

KIRK-RICH DIALS (Continued) **1007372478**

Contact Title: Site Assessment Manager (SAM)
Contact Email: Not reported

Alias Comments: Not reported
Site Description: Site was referred to ERS by Los Angeles Co. Radiation Management. The site is a potential radium contamination site.

CERCLIS Assessment History:

Action Code: 001
Action: REMOVAL
Date Started: 03/28/2005
Date Completed: 04/18/2005
Priority Level: Stabilized
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Not reported
Urgency Indicator: Time Critical
Action Anomaly: Not reported

Action Code: 001
Action: POTENTIALLY RESPONSIBLE PARTY EMERGENCY REMOVAL
Date Started: 03/28/2005
Date Completed: 04/18/2005
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: Responsible Party
Planning Status: Primary
Urgency Indicator: Emergency
Action Anomaly: Not reported

M525
ENE
< 1/8
0.005 mi.
24 ft.

GOLD SPECTRUM CORP
404 W 7TH ST #1407
LOS ANGELES, CA 90014

HAZNET **S106090729**
EMI **N/A**

Site 47 of 56 in cluster M

Relative:
Higher

Actual:
262 ft.

HAZNET:
Year: 2002
Gepaid: CAL000033111
Contact: --
Telephone: --
Mailing Name: Not reported
Mailing Address: 404 W 7TH ST STE 1407
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Alameda
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.07
Facility County: Not reported

EMI:
Year: 1990
County Code: 19

GOLD SPECTRUM CORP (Continued) **S106090729**

Air Basin:	SC
Facility ID:	59754
Air District Name:	SC
SIC Code:	3324
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

M526 **RMS GOLD ASSAYING** **HAZNET** **S103984822**
ENE **404 W 7TH ST STE 1226** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 48 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000159074
Contact:	SAM TUBIS/OWNER
Telephone:	2134892343
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141612
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Unspecified aqueous solution
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.175
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAL000159074
Contact:	SAM TUBIS/OWNER
Telephone:	2134892343
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 1226
Mailing City,St,Zip:	LOS ANGELES, CA 900141612
Gen County:	Los Angeles
TSD EPA ID:	MAD128422870
TSD County:	Not reported
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.13
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000159074
Contact:	SAM TUBIS/OWNER
Telephone:	2134892343

RMS GOLD ASSAYING (Continued) **S103984822**

Mailing Name: Not reported
Mailing Address: 404 W 7TH ST STE 1226
Mailing City,St,Zip: LOS ANGELES, CA 900141612
Gen County: Los Angeles
TSD EPA ID: MAD128422870
TSD County: Not reported
Waste Category: Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method: Recycler
Tons: 0.13
Facility County: Not reported

Year: 1999
Gepaid: CAL000159074
Contact: SEMYEN TUBIS
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 404 W 7TH ST STE 1226
Mailing City,St,Zip: LOS ANGELES, CA 900141612
Gen County: Los Angeles
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2 with metals
Disposal Method: Recycler
Tons: 0.2293
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000159074
Contact: SEMYEN TUBIS
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 404 W 7TH ST STE 1226
Mailing City,St,Zip: LOS ANGELES, CA 900141612
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0417
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

M527 **RENE CESPEDES** **RCRA-SQG** **1000195689**
ENE **404 W 7TH #1415** **FINDS** **CAD981657687**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
24 ft. **Site 49 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:
Date form received by agency: 09/30/1986
Facility name: RENE CESPEDES
Facility address: 404 W 7TH #1415
LOS ANGELES, CA 90014
EPA ID: CAD981657687
Mailing address: W 7TH #1415

RENE CESPEDES (Continued) **1000195689**

	LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	404 W 7TH #1415
	LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 624-6605
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RENE CESPEDES
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

RENE CESPEDES (Continued) **1000195689**

Registry ID: 110002740080

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M528
ENE
< 1/8
0.005 mi.
24 ft.

FRONTIER JEWELRY
404 W 7TH ST, STE 901
LOS ANGELES, CA 90014

RCRA-SQG **1000322330**
FINDS **CAD122026552**

Site 50 of 56 in cluster M

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	FRONTIER JEWELRY
Facility address:	404 W 7TH ST, STE 901 LOS ANGELES, CA 90014
EPA ID:	CAD122026552
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ASHOT HAKOPIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

FRONTIER JEWELRY (Continued) **1000322330**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	11/19/1985
Facility name:	FRONTIER JEWELRY
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110009532826

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M529 **JEWELRY DESIGN CENTER** **RCRA-SQG** **1000597500**
ENE **404 W 7TH ST STE 1020** **FINDS** **CAD983615139**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
0.005 mi.
24 ft. **Site 51 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	12/27/1991
Facility name:	JEWELRY DESIGN CENTER
Facility address:	404 W 7TH ST STE 1020 LOS ANGELES, CA 90014
EPA ID:	CAD983615139
Contact:	RAFI SULAHIAN
Contact address:	404 W SEVENTH ST STE 1020 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 626-8800
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator

JEWELRY DESIGN CENTER (Continued) **1000597500**

Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: HAKAKIAN AND HANASAB
Owner/operator address: 404 W 7TH ST STE 1020
LOS ANGELES, CA 90014
Owner/operator country: Not reported
Owner/operator telephone: (213) 626-8800
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009549140

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of

JEWELRY DESIGN CENTER (Continued) **1000597500**

events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

PCS (Permit Compliance System) is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

HAZNET:

Year:	2005
Gepaid:	CAD983615139
Contact:	CHERYL ROGERS-MGR
Telephone:	2136268800
Mailing Name:	Not reported
Mailing Address:	404 W 7TH ST STE 209
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	UTD981552177
TSD County:	99
Waste Category:	Unspecified alkaline solution
Disposal Method:	Treatment, Incineration
Tons:	0
Facility County:	Not reported

Year:	1995
Gepaid:	CAD983615139
Contact:	HAKAKIAN AND HANASAB
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	404 W. 7TH ST. STE 221
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	MAD128422870
TSD County:	0
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	.8000
Facility County:	Los Angeles

BE530 **North** **< 1/8** **0.005 mi.** **24 ft.**	**CENTURY PARKING INCORPORATED** **727 W 7TH ST** **LOS ANGELES, CA 90013** **Site 1 of 15 in cluster BE**	**CA FID UST** **SWEEPS UST**	**S101585727** **N/A**

Relative: **Higher**

Actual: **271 ft.**

CA FID UST:

Facility ID:	19027959
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	727 W 7TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	3983
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

BE531 **North** **< 1/8** **0.005 mi.** **24 ft.**	**KATHY MAASOUMI DDS** **727 W 7TH ST STE 924** **LOS ANGELES, CA 90017** **Site 2 of 15 in cluster BE**	**HAZNET**	**S105724616** **N/A**

Relative: **Higher**

Actual: **271 ft.**

HAZNET:

Year:	2001
Gepaid:	CAL000212929
Contact:	DR MAASOUMI
Telephone:	2134860006
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 924
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	Not reported

KATHY MAASOUMI DDS (Continued) **S105724616**

TSD County:	Santa Clara
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	0
Facility County:	Not reported

BE532 **ERNS** **2005629370**
North **727 WEST 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.005 mi.
24 ft. **Site 3 of 15 in cluster BE**

Relative:
Higher

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual:
271 ft.

BE533 **ROOSEVELT BLDG** **HAZNET** **S103985386**
North **727 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.005 mi.
24 ft. **Site 4 of 15 in cluster BE**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	1997
Gepaid:	CAC000775208
Contact:	THERMAL ROOSEVELT REDEV INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7HT ST STE 333
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	.0625
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAC001111368
Contact:	TOM HOLCOMB MAINT CHF ENGNR
Telephone:	2136225085
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 722
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.0208
Facility County:	Los Angeles

BE534 **North** **< 1/8** **0.005 mi.** **24 ft.**	**SUMI OFFICE SERVICES** **727 W SEVENTH ST STE 358** **LOS ANGELES, CA 90017** **Site 5 of 15 in cluster BE**	**HAZNET** **EMI**	**S103670596** **N/A**

Relative: **Higher**

Actual: **271 ft.**

HAZNET:

Year:	1994
Gepaid:	CAL000073770
Contact:	MICHEL SUMI/ROLAND SUMI
Telephone:	2136231600
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 358
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD982524613
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1042
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000073770
Contact:	MICHEL SUMI/ROLAND SUMI
Telephone:	2136231600
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 358
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD982524613
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0834
Facility County:	Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BE535
North
< 1/8
0.005 mi.
24 ft.

1X ROOSEVELT BLDG
727 WEST 7TH ST
LOS ANGELES, CA 90017

Site 6 of 15 in cluster BE

HAZNET **S103670595**
N/A

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	1995
Gepaid:	CAD000329284
Contact:	CITIBANK NA SUBSTRUST/BANKERS
Telephone:	2125599048
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 722
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.1876
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAD000329284
Contact:	CITIBANK NA SUBSTRUST/BANKERS
Telephone:	2125599048
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 722
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	3.3712
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAD000329284
Contact:	CITIBANK NA SUBSTRUST/BANKERS
Telephone:	2125599048
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 722
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAL000027741
TSD County:	5
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.5056
Facility County:	Los Angeles

BE536 **THE ROOSEVELT LOFTS INC** **HAZNET** **S108756483**
North **727 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.005 mi.
24 ft. **Site 7 of 15 in cluster BE**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002598859
Contact:	CHARLES LOVEMAN
Telephone:	2134031400
Mailing Name:	Not reported
Mailing Address:	660 S FIGUEROA ST 24TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	16.85
Facility County:	Los Angeles

BE537 **MCI WORLD COM INC** **HAZNET** **S107143118**
North **727 W. 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.005 mi.
24 ft. **Site 8 of 15 in cluster BE**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002569847
Contact:	TODD HARRIS/ENVIRON REP
Telephone:	9727295671
Mailing Name:	Not reported
Mailing Address:	2400 N GLENVILLE DR.
Mailing City,St,Zip:	RICHARDSON, TX 75082
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	1.45
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAC002569847
Contact:	TODD HARRIS/ENVIRON REP
Telephone:	9727295671
Mailing Name:	Not reported
Mailing Address:	2400 N GLENVILLE DR.
Mailing City,St,Zip:	RICHARDSON, TX 75082
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Recycler
Tons:	0.22
Facility County:	Los Angeles

Year:	2003

MCI WORLD COM INC (Continued) **S107143118**

Gepaid:	CAC002569847
Contact:	TODD HARRIS/ENVIRON REP
Telephone:	9727295671
Mailing Name:	Not reported
Mailing Address:	2400 N GLENVILLE DR.
Mailing City,St,Zip:	RICHARDSON, TX 75082
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.45
Facility County:	Los Angeles

BE538 **CHMIRS** **S108405895**
North **727 W. 7TH ST. (COMMERCIAL BLDG)** **N/A**
< 1/8 **LOS ANGELES, CA 90065**
0.005 mi.
24 ft. **Site 9 of 15 in cluster BE**

Relative:
Higher

Actual:
271 ft.

CHMIRS:

OES Incident Number:	05-6364
OES notification:	11/3/200508:45:03 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported

(Continued) **S108405895**

Waterway Involved:	Not reported
Waterway:	LA River
Spill Site:	Not reported
Cleanup By:	Building Owners
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	City of Los Angeles Sanitation Dept
Incident Date:	11/3/200512:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Sewage
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	2,260
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Release due to blockage in the main line. Everything was contained in a basement but 247 gallons went into the LA River thru a County catch basin. Event started at 1620 and ended at 1730. RP is going to call back with update.

BE539 **KNOX ATTORNEY SERVICES INC** **HAZNET** **S105724970**
North **727 W 7TH ST STE 732** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.005 mi.
24 ft. **Site 10 of 15 in cluster BE**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000219144
Contact:	JOHN LOPEZ/SUPERVISOR
Telephone:	2136261650
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 732
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Marin

KNOX ATTORNEY SERVICES INC (Continued) **S105724970**

Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 1.76
Facility County: Not reported

Year: 2001
Gepaid: CAL000219144
Contact: JOHN LOPEZ/SUPERVISOR
Telephone: 2136261650
Mailing Name: Not reported
Mailing Address: 727 W 7TH ST STE 732
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Marin
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: 0.45
Facility County: Not reported

Year: 2001
Gepaid: CAL000219144
Contact: JOHN LOPEZ/SUPERVISOR
Telephone: 2136261650
Mailing Name: Not reported
Mailing Address: 727 W 7TH ST STE 732
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Marin
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 2.98
Facility County: Not reported

BE540 **ROMAN VASILE F MD** **HAZNET** **S103985283**
North **727 W 7TH ST #959** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.005 mi.
24 ft. **Site 11 of 15 in cluster BE**

Relative:
Higher

Actual:
271 ft.

HAZNET:
Year: 1997
Gepaid: CAL000076144
Contact: ROMAN VASILE MD
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 727 W 7TH ST STE 959
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0208
Facility County: Los Angeles

Year: 1996

ROMAN VASILE F MD (Continued) **S103985283**

Gepaid:	CAL000076144
Contact:	ROMAN VASILE MD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 959
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0260
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000076144
Contact:	ROMAN VASILE MD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 959
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0255
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000076144
Contact:	ROMAN VASILE MD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 959
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0708
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000076144
Contact:	ROMAN VASILE MD
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	727 W 7TH ST STE 959
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0625

ROMAN VASILE F MD (Continued) **S103985283**

Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

BE541
North
< 1/8
0.005 mi.
24 ft.

ROOSEVELT BLDG LTD
727 W 7TH ST
LOS ANGELES, CA 90017

FINDS **1006825735**
EMI **N/A**

Site 12 of 15 in cluster BE

Relative:
Higher

Actual:
271 ft.

FINDS:

Registry ID: 110013847739

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

EMI:

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

ROOSEVELT BLDG LTD (Continued) **1006825735**

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	41141
Air District Name:	SC
SIC Code:	7011

ROOSEVELT BLDG LTD (Continued) **1006825735**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S542
ENE **303 W. 6TH ST.**
< 1/8 **LOS ANGELES, CA**
0.005 mi.
25 ft. **Site 19 of 79 in cluster S**

CHMIRS **S105665046**
N/A

Relative: Higher

Actual: 262 ft.

CHMIRS:

OES Incident Number:	00-4862
OES notification:	10/20/200005:51:08 AM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported

(Continued) **S105665046**

Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2000
Agency:	LA City FD
Incident Date:	10/20/200012:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	Nitric acid
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	1
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	An illegal dumping of the container into a trash bin.

H543 **424 OWNER LLC** **HAZNET** **S108223563**
NE **424 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.005 mi.
25 ft. **Site 12 of 13 in cluster H**

Relative:
Higher

Actual:
275 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002630414
Contact:	DAVID GRAY
Telephone:	2138046800
Mailing Name:	Not reported
Mailing Address:	1548 9TH ST STE 200
Mailing City,St,Zip:	SANTA MONICA, CA 904012709
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.114
Facility County:	Los Angeles

424 OWNER LLC (Continued) **S108223563**

Year:	2006
Gepaid:	CAC002596764
Contact:	BILL VITTA
Telephone:	7145770209
Mailing Name:	Not reported
Mailing Address:	3303 E MIRALOMA AVE STE 184
Mailing City,St,Zip:	ANAHEIM, CA 928061943
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	1.4
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAC002596764
Contact:	BILL VITTA
Telephone:	7145770209
Mailing Name:	Not reported
Mailing Address:	3303 E MIRALOMA AVE STE 184
Mailing City,St,Zip:	ANAHEIM, CA 928061943
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	10.36
Facility County:	Not reported

BC544 **ANSCHUTZ ENTERTAINMENT GROUP** **HAZNET** **S107142802**
WSW **1100 S HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.005 mi.
25 ft. **Site 2 of 3 in cluster BC**

Relative:
Lower

Actual:
246 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002569083
Contact:	EDUARDO CERVANTES
Telephone:	2137427824
Mailing Name:	Not reported
Mailing Address:	1100 S FLOWER ST STE 3100
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Los Angeles
Waste Category:	Liquids with mercury >= 20 Mg./L
Disposal Method:	Not reported
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAC002569083
Contact:	EDUARDO CERVANTES
Telephone:	2137427824
Mailing Name:	Not reported
Mailing Address:	1100 S FLOWER ST STE 3100

ANSCHUTZ ENTERTAINMENT GROUP (Continued) **S107142802**

Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Transfer Station
Tons: 0
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002569083
Contact: EDUARDO CERVANTES
Telephone: 2137427824
Mailing Name: Not reported
Mailing Address: 1100 S FLOWER ST STE 3100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Los Angeles
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Recycler
Tons: 0.9
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002569083
Contact: EDUARDO CERVANTES
Telephone: 2137427824
Mailing Name: Not reported
Mailing Address: 1100 S FLOWER ST STE 3100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD982444481
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Transfer Station
Tons: 0.07
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002569083
Contact: EDUARDO CERVANTES
Telephone: 2137427824
Mailing Name: Not reported
Mailing Address: 1100 S FLOWER ST STE 3100
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Transfer Station
Tons: 0.07
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

BD545 **ENE** **< 1/8** **0.005 mi.** **26 ft.**	**VENATOR GROUP, INC** **719 S BROADWAY** **LOS ANGELES, CA 90014** **Site 2 of 18 in cluster BD**	**HAZNET**	**S104568980** **N/A**

Relative:
Higher

Actual:
258 ft.

HAZNET:

Year: 1999
Gepaid: CAC001490320
Contact: VENATOR GROUP INC
Telephone: 8888769443
Mailing Name: Not reported
Mailing Address: 233 BROADWAY
Mailing City,St,Zip: NEW YORK, NY 102790000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Tons: 0.025
Facility County: Los Angeles

Year: 1999
Gepaid: CAC001490320
Contact: VENATOR GROUP INC
Telephone: 8888769443
Mailing Name: Not reported
Mailing Address: 233 BROADWAY
Mailing City,St,Zip: NEW YORK, NY 102790000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Transfer Station
Tons: 0.0125
Facility County: Los Angeles

Year: 1999
Gepaid: CAC001490320
Contact: VENATOR GROUP INC
Telephone: 8888769443
Mailing Name: Not reported
Mailing Address: 233 BROADWAY
Mailing City,St,Zip: NEW YORK, NY 102790000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Transfer Station
Tons: 0.0011
Facility County: Los Angeles

Year: 1999
Gepaid: CAC001490320
Contact: VENATOR GROUP INC
Telephone: 8888769443
Mailing Name: Not reported
Mailing Address: 233 BROADWAY
Mailing City,St,Zip: NEW YORK, NY 102790000

VENATOR GROUP, INC (Continued) **S104568980**

Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Pesticides and other waste associated with pesticide production
Disposal Method: Transfer Station
Tons: 0.1042
Facility County: Los Angeles

Year: 1999
Gepaid: CAC001490320
Contact: VENATOR GROUP INC
Telephone: 8888769443
Mailing Name: Not reported
Mailing Address: 233 BROADWAY
Mailing City,St,Zip: NEW YORK, NY 102790000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Latex waste
Disposal Method: Transfer Station
Tons: 0.0834
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BD546 **F W WOOLWORTHS** **RCRA-SQG** **1000818964**
ENE **719 S BROADWAY** **FINDS** **CAD983649054**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
26 ft. **Site 3 of 18 in cluster BD**

Relative: Higher

Actual: 258 ft.

RCRA-SQG:
Date form received by agency: 10/14/1992
Facility name: F W WOOLWORTHS
Facility address: 719 S BROADWAY
LOS ANGELES, CA 90014
EPA ID: CAD983649054
Contact: DAVID CLYMER
Contact address: 719 S BROADWAY
LOS ANGELES, CA 91007
Contact country: US
Contact telephone: (310) 494-9474
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: F W WOOLWORTHS
Owner/operator address: 719 S BROADWAY
LOS ANGELES, CA 91007
Owner/operator country: Not reported

F W WOOLWORTHS (Continued) **1000818964**

Owner/operator telephone:	(213) 488-0457
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110008284178

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BD547 **BAIKA BROS** **EDR Historical Auto Stations** **1009079054**
ENE **719 N BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.005 mi.
26 ft. **Site 4 of 18 in cluster BD**

Relative:
Higher

Actual:
258 ft.

EDR Historical Auto Stations:

Name:	BAIKA BROS
Year:	1933
Type:	AUTOMOBILE REPAIRING

BD548 **RAINBOW PHOTO DBA: WOOLWORTH CO** **HAZNET** **S103670271**
ENE **719 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 91007**
0.005 mi.
26 ft. **Site 5 of 18 in cluster BD**

Relative: Higher

Actual: 258 ft.

HAZNET:

Year:	1993
Gepaid:	CAD983649054
Contact:	HERSEL SAIEDIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	PO BOX 2135
Mailing City,St,Zip:	HARRISBURG, PA 171052135
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	1.8973
Facility County:	Los Angeles

BD549 **BARNES PROPERTIES** **CA FID UST** **S101584549**
ENE **700 S BROADWAY AVE** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
26 ft. **Site 6 of 18 in cluster BD**

Relative: Higher

Actual: 258 ft.

CA FID UST:

Facility ID:	19012710
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2138911063
Mail To:	Not reported
Mailing Address:	710 S BROADWAY
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7826
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported

BARNES PROPERTIES (Continued) **S101584549**

Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

P550
NE **527 WEST 7TH ST**
< 1/8 **LOS ANGELES, CA 90031**
0.005 mi.
28 ft. **Site 15 of 15 in cluster P**

CHMIRS **S103663699**
HAZNET **N/A**

Relative:
Higher

Actual:
266 ft.

CHMIRS:

OES Incident Number:	97-5103
OES notification:	12/24/199712:03:30 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported

(Continued) **S103663699**

Other:	Not reported
Date/Time:	Not reported
Year:	1997
Agency:	City of Los Angeles Water
Incident Date:	12/22/199712:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Road
E Date:	Not reported
Substance:	Raw Sewage
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	5,280
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Grease build up.

HAZNET:

Year:	1998
Gepaid:	CAL000037931
Contact:	HAAKANA BILL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	527 W 7TH ST STE 404
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1250
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000037931
Contact:	HAAKANA BILL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	527 W 7TH ST STE 404
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste

(Continued) **S103663699**

Disposal Method:	Recycler
Tons:	.0625
Facility County:	Los Angeles
Year:	1996
Gepaid:	CAL000037931
Contact:	HAAKANA BILL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	527 W 7TH ST STE 404
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0625
Facility County:	Los Angeles
Year:	1995
Gepaid:	CAL000037931
Contact:	HAAKANA BILL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	527 W 7TH ST STE 404
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1000
Facility County:	Los Angeles
Year:	1994
Gepaid:	CAL000037931
Contact:	HAAKANA BILL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	527 W 7TH ST STE 404
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1042
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BD551 **ENE** **< 1/8** **0.005 mi.** **28 ft.**

7TH FLOOR, 707 SOUTH BROADWAY
LOS ANGELES, CA 90014

Site 7 of 18 in cluster BD

ERNS **93319129** **N/A**

Relative: Higher

Actual: 258 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

BD552 **ENE** **< 1/8** **0.005 mi.** **28 ft.**

HARMONY JEWELRY MFG
707 S BROADWAY RM 818
LOS ANGELES, CA 90014

Site 8 of 18 in cluster BD

EMI **S106832384** **N/A**

Relative: Higher

Actual: 258 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57959
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BD553 **ENE** **< 1/8** **0.005 mi.** **28 ft.**

UNITED BUILDING ASSOCIATES
707 SO BROADWAY RM 411
LOS ANGELES, CA 90014

Site 9 of 18 in cluster BD

CHMIRS **HAZNET** **S103669888** **N/A**

Relative: Higher

Actual: 258 ft.

CHMIRS:

OES Incident Number:	3680
OES notification:	Not reported
OES Date:	8/17/1994
OES Time:	01:08:37 PM
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported

UNITED BUILDING ASSOCIATES (Continued) **S103669888**

Special Studies 6: Not reported
More Than Two Substances Involved?: Not reported
Resp Agncy Personel # Of Decontaminated: Not reported
Responding Agency Personel # Of Injuries: Not reported
Responding Agency Personel # Of Fatalities: Not reported
Others Number Of Decontaminated: Not reported
Others Number Of Injuries: Not reported
Others Number Of Fatalities: Not reported
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: Not reported
Report Date: Not reported
Comments: Not reported
Facility Telephone: Not reported
Waterway Involved: NO
Waterway: Not reported
Spill Site: Not reported
Cleanup By: undetermined
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 1994
Agency: la fd
Incident Date: 1155
Admin Agency: Not reported
Amount: 80 gal
Contained: NO
Site Type: IND PLT
E Date: Not reported
Substance: nitric acid residue
Quantity Released: Not reported
BBLS: Not reported
Cups: Not reported
CUFT: Not reported
Gallons: Not reported
Grams: Not reported
Pounds: Not reported
Liters: Not reported
Ounces: Not reported
Pints: Not reported
Quarts: Not reported
Sheen: Not reported
Tons: Not reported
Unknown: Not reported
Evacuations: NO
Number of Injuries: UNKNOWN
Number of Fatalities: NO
Description: sprinkler had tripped, water got to chemicals in a gem store, 8 persons exposed

UNITED BUILDING ASSOCIATES (Continued) **S103669888**

HAZNET:

Year:	2000
Gepaid:	CAL000059257
Contact:	UNITED BLDG ASSOCIATES C/O R S
Telephone:	2136232187
Mailing Name:	Not reported
Mailing Address:	707 S BROADWAY STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900142807
Gen County:	3
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	6.2550
Facility County:	3

Year:	2000
Gepaid:	CAL000059257
Contact:	UNITED BLDG ASSOCIATES C/O R S
Telephone:	2136232187
Mailing Name:	Not reported
Mailing Address:	707 S BROADWAY STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900142807
Gen County:	3
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.8340
Facility County:	3

Year:	1995
Gepaid:	CAL000059257
Contact:	UNITED BLDG ASSOCIATES C/O R S
Telephone:	2136232187
Mailing Name:	Not reported
Mailing Address:	707 S BROADWAY STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900142807
Gen County:	3
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	12.5000
Facility County:	3

Year:	1994
Gepaid:	CAL000059257
Contact:	UNITED BLDG ASSOCIATES C/O R S
Telephone:	2136232187
Mailing Name:	Not reported
Mailing Address:	707 S BROADWAY STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900142807
Gen County:	3
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste

UNITED BUILDING ASSOCIATES (Continued) **S103669888**

Disposal Method: Disposal, Land Fill
Tons: 14.0936
Facility County: 3

Year: 1994
Gepaid: CAL000059257
Contact: UNITED BLDG ASSOCIATES C/O R S
Telephone: 2136232187
Mailing Name: Not reported
Mailing Address: 707 S BROADWAY STE 411
Mailing City,St,Zip: LOS ANGELES, CA 900142807
Gen County: 3
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Not reported
Tons: 2.0000
Facility County: 3

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

BD554 **CHMIRS** **S100216843**
ENE **707 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
28 ft. **Site 10 of 18 in cluster BD**

Relative:
Higher

Actual:
258 ft.

CHMIRS:
OES Incident Number: 8904826
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 09-FEB-89
Date Completed: 09-FEB-89
Property Use: 500
Agency Id Number: 19105
Agency Incident Number: 779
Time Notified: 2028
Time Completed: 2228
Surrounding Area: 099
Estimated Temperature: 60
Property Management: C
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: 0
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 0
Others Number Of Fatalities: 0
Vehicle Make/year: Not reported
Vehicle License Number: Not reported

(Continued) **S100216843**

Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	JOHN L. QUINTANAR FS4-C
Report Date:	09-FEB-89
Comments:	Not reported
Facility Telephone:	213 485-7480
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	03-MAY-90
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

BD555 **ALEX JEWELERY** **HAZNET** **S105722584**
ENE **707 SOUTH BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.005 mi.
28 ft. **Site 11 of 18 in cluster BD**

Relative:
Higher

Actual:
258 ft.

HAZNET:

Year:	2001
Gepaid:	CAL000048909
Contact:	INACT PER VQ 95 AD
Telephone:	2134899779
Mailing Name:	Not reported

ALEX JEWELERY (Continued) **S105722584**

Mailing Address: 707 SOUTH BROADWAY # 221
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Alkaline solution without metals pH >= 12.5
Disposal Method: Treatment, Tank
Tons: 0.62
Facility County: Not reported

BD556
ENE
< 1/8
0.005 mi.
28 ft.

UNITED BUILDING ASSOCIATES
707 S BROADWAY #411
LOS ANGELES, CA 90014

ENVIROSTOR **S110494422**
N/A

Site 12 of 18 in cluster BD

Relative:
Higher

Actual:
258 ft.

ENVIROSTOR:
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Chatsworth
Facility ID: 71003260
Site Code: Not reported
Assembly: Not reported
Senate: Not reported
Special Program: Not reported
Status: Refer: Other Agency
Status Date: Not reported
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not reported
Latitude: 0
Longitude: 0
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAL000059257
Alias Type: EPA Identification Number
Alias Name: 71003260
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported

UNITED BUILDING ASSOCIATES (Continued) **S110494422**

Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

BD557
ENE
< 1/8
0.005 mi.
28 ft.

707 S BROADWAY
L A, CA 90014

ERNS **94400801**
N/A

Site 13 of 18 in cluster BD

Relative:
Higher

Actual:
258 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

U558
NNE
< 1/8
0.005 mi.
28 ft.

UNION OIL CO OF CAL
617 W 7TH ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009078747**
N/A

Site 16 of 21 in cluster U

Relative:
Higher

Actual:
268 ft.

EDR Historical Auto Stations:

Name:	UNION OIL CO OF CAL
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

U559
NNE
< 1/8
0.005 mi.
28 ft.

HIRO REAL ESTATE
617 WEST 7TH ST
LOS ANGELES, CA 90017

HAZNET **S103667029**
N/A

Site 17 of 21 in cluster U

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002194321
Contact:	FRANK WARD
Telephone:	2127539122
Mailing Name:	Not reported
Mailing Address:	650 MADISON AVE
Mailing City,St,Zip:	NEW YORK, NY 100220000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.68
Facility County:	Not reported

Year:	2000
Gepaid:	CAC002194321
Contact:	HIRO REAL ESTATE
Telephone:	2127539122
Mailing Name:	Not reported
Mailing Address:	650 MADISON AVE

HIRO REAL ESTATE (Continued) **S103667029**

Mailing City,St,Zip:	NEW YORK, NY 100220000
Gen County:	Los Angeles
TSD EPA ID:	CAL000827758
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002194321
Contact:	HIRO REAL ESTATE
Telephone:	2127539122
Mailing Name:	Not reported
Mailing Address:	650 MADISON AVE
Mailing City,St,Zip:	NEW YORK, NY 100220000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1364.2403
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002194321
Contact:	HIRO REAL ESTATE
Telephone:	2127539122
Mailing Name:	Not reported
Mailing Address:	650 MADISON AVE
Mailing City,St,Zip:	NEW YORK, NY 100220000
Gen County:	Los Angeles
TSD EPA ID:	CAL000827758
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	.3175
Facility County:	Los Angeles

U560 **MORLIN MANAGEMENT CORP** **FTTS** **1004442986**
NNE **617 W 7TH ST STE 1010** **HIST FTTS** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **FINDS**
0.005 mi.
28 ft. **Site 18 of 21 in cluster U**

Relative:
Higher

Actual:
268 ft.

FTTS INSP:

Inspection Number:	19910521CA015 1
Region:	09
Inspection Date:	05/21/91
Inspector:	SAUER/GANDY
Violation occurred:	No
Investigation Type:	Section 6 PCB State Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

MORLIN MANAGEMENT CORP (Continued) **1004442986**

HIST FTTS INSP:

Inspection Number:	19910521CA015 1
Region:	09
Inspection Date:	Not reported
Inspector:	SAUER/GANDY
Violation occurred:	No
Investigation Type:	Section 6 PCB State Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

FINDS:

Registry ID: 110011653148

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

U561
NNE
< 1/8
0.005 mi.
28 ft.

WALGREENS #12460
617 W 7TH ST
LOS ANGELES, CA 90017

Site 19 of 21 in cluster U

HAZNET **S111084315**
N/A

Relative: Higher

Actual: 268 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000353730
Contact:	MARJI NELSON
Telephone:	8479143249
Mailing Name:	Not reported
Mailing Address:	200 WILMOT RD
Mailing City,St,Zip:	DEERFIELD, IL 60015
Gen County:	Not reported
TSD EPA ID:	OHD083377010
TSD County:	Not reported
Waste Category:	Pharmaceutical waste
Disposal Method:	Not reported
Tons:	0.0095
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000353730
Contact:	MARJI NELSON
Telephone:	8479143249
Mailing Name:	Not reported
Mailing Address:	200 WILMOT RD
Mailing City,St,Zip:	DEERFIELD, IL 60015
Gen County:	Not reported
TSD EPA ID:	OHD083377010
TSD County:	Not reported
Waste Category:	Unspecified solvent mixture

WALGREENS #12460 (Continued) **S111084315**

Disposal Method:	Not reported
Tons:	0.0055
Facility County:	Los Angeles
Year:	2010
Gepaid:	CAL000353730
Contact:	MARJI NELSON
Telephone:	8479143249
Mailing Name:	Not reported
Mailing Address:	200 WILMOT RD
Mailing City,St,Zip:	DEERFIELD, IL 60015
Gen County:	Not reported
TSD EPA ID:	OHD083377010
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Energy Recovery At This Site--Use As Fuel(Includes On-Site Fuel Blending)
Tons:	0.0115
Facility County:	Los Angeles

AV562 **FLOWER HOLDINGS LLC** **HAZNET** **S106089854**
WSW **1100 S FLOWER ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.005 mi.
28 ft. **Site 4 of 11 in cluster AV**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002558630
Contact:	Eduardo Cervantes/project eng
Telephone:	2137427870
Mailing Name:	Not reported
Mailing Address:	1100 S Flower St Ste 300
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	0.20
Facility County:	Not reported

AV563 **BIG TICKET PROD ASIAN MKT PL** **RCRA-SQG** **1001075653**
WSW **1100 S FLOWER** **FINDS** **CAR000007419**
< 1/8 **LOS ANGELES, CA 90015** **HAZNET**
0.005 mi.
28 ft. **Site 5 of 11 in cluster AV**

Relative:
Lower

Actual:
245 ft.

RCRA-SQG:

Date form received by agency:	12/11/1995
Facility name:	BIG TICKET PROD ASIAN MKT PL
Facility address:	1100 S FLOWER LOS ANGELES, CA 900151113
EPA ID:	CAR000007419
Mailing address:	W OLYMPIC BLVD STE 303 LOS ANGELES, CA 900641113

BIG TICKET PROD ASIAN MKT PL (Continued) **1001075653**

Contact: HUGH CONLON
Contact address: 11811 W OLYMPIC BLVD STE 303
LOS ANGELES, CA 900641113
Contact country: US
Contact telephone: (213) 749-4075
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: BIPACIFIC MKTNG EXHIBTG INC
Owner/operator address: 1100 S FLOWER ST STE 300
LOS ANGELES, CA 90015
Owner/operator country: Not reported
Owner/operator telephone: (213) 748-8488
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002909283

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BIG TICKET PROD ASIAN MKT PL (Continued) **1001075653**

HAZNET:

Year:	2000
Gepaid:	CAC002245321
Contact:	WAYNE GAUL
Telephone:	6263033535
Mailing Name:	Not reported
Mailing Address:	5455 DIAZ ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	.3336
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC001185264
Contact:	BIG TICKET PRODUCTIONS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	11811 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900640000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	.1500
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC001185264
Contact:	BIG TICKET PRODUCTIONS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	11811 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900640000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Transfer Station
Tons:	1.2500
Facility County:	Los Angeles

U564
NNE
< 1/8
0.005 mi.
28 ft.

RITZ CAMERA CENTERS #128
613 WEST SEVENTH STREET
LOS ANGELES, CA 90017

HAZNET **S103666895**
N/A

Site 20 of 21 in cluster U

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	1994
Gepaid:	CAL920244097
Contact:	RITZ CAMERA CENTERS INC
Telephone:	3014190000

RITZ CAMERA CENTERS #128 (Continued) **S103666895**

Mailing Name: Not reported
Mailing Address: 11738 SAN MARINO ST.
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 917300000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: .1035
Facility County: Los Angeles

Year: 1994
Gepaid: CAL920244097
Contact: RITZ CAMERA CENTERS INC
Telephone: 3014190000
Mailing Name: Not reported
Mailing Address: 11738 SAN MARINO ST.
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 917300000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .1675
Facility County: Los Angeles

Year: 1994
Gepaid: CAL920244097
Contact: RITZ CAMERA CENTERS INC
Telephone: 3014190000
Mailing Name: Not reported
Mailing Address: 11738 SAN MARINO ST.
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 917300000
Gen County: Los Angeles
TSD EPA ID: NJD986605186
TSD County: 99
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Not reported
Tons: .0300
Facility County: Los Angeles

Year: 1993
Gepaid: CAL920244097
Contact: RITZ CAMERA CENTERS INC
Telephone: 3014190000
Mailing Name: Not reported
Mailing Address: 11738 SAN MARINO ST.
Mailing City,St,Zip: RANCHO CUCAMONGA, CA 917300000
Gen County: Los Angeles
TSD EPA ID: NJD986605186
TSD County: 99
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Not reported
Tons: .0300
Facility County: Los Angeles

Year: 1993

RITZ CAMERA CENTERS #128 (Continued) **S103666895**

Gepaid:	CAL920244097
Contact:	RITZ CAMERA CENTERS INC
Telephone:	3014190000
Mailing Name:	Not reported
Mailing Address:	11738 SAN MARINO ST.
Mailing City,St,Zip:	RANCHO CUCAMONGA, CA 917300000
Gen County:	Los Angeles
TSD EPA ID:	NJD986605186
TSD County:	99
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0300
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

K565 **ENE** **< 1/8** **0.005 mi.** **29 ft.**

RITE AID #5429
500 S BROADWAY
LOS ANGELES, CA 90013

HAZNET **S109430835** **N/A**

Site 15 of 18 in cluster K

Relative: **Higher**

Actual: **270 ft.**

HAZNET:

Year:	2007
Gepaid:	CAL000308676
Contact:	NANCY MACLEOD/X 5569
Telephone:	7177612633
Mailing Name:	Not reported
Mailing Address:	PO BOX 3165
Mailing City,St,Zip:	HARRISBURG, PA 17105
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01
Facility County:	Los Angeles

BF566 **SSW** **< 1/8** **0.005 mi.** **29 ft.**

HOWIE A S
1102 S HILL ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009080178** **N/A**

Site 1 of 2 in cluster BF

Relative: **Lower**

Actual: **246 ft.**

EDR Historical Auto Stations:

Name:	HOWIE A S
Year:	1929
Type:	GASOLINE AND OIL SERVICE STATION
Name:	HOWIE A S
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

AB567 **LOS ANGELES ATHLETIC CLUB** **RCRA-SQG** **1012176296**
NE **431 W 7TH ST** **CAR000202069**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
32 ft. **Site 9 of 14 in cluster AB**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	07/30/2009
Facility name:	LOS ANGELES ATHLETIC CLUB
Facility address:	431 W 7TH ST LOS ANGELES, CA 90014
EPA ID:	CAR000202069
Contact:	STEVE K HATHAWAY
Contact address:	431 W 7TH ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	213-625-2211
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	STEVE HATHAWAY
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1990
Owner/Op end date:	Not reported
Owner/operator name:	LAACO LTD
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1992
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

LOS ANGELES ATHLETIC CLUB (Continued) **1012176296**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:
Waste code: D008
Waste name: LEAD

Violation Status: No violations found

AB568 **NE** **< 1/8** **0.006 mi.** **32 ft.**	**CHAS F/F G HATHAWAY** **431 W 7TH ST** **LOS ANGELES, CA 90014** **Site 10 of 14 in cluster AB**	**UST** **SWEEPS UST** **HAZNET**	**U003780521** **N/A**

Relative:
Higher

Actual:
262 ft.

UST:
Facility ID: 24085
Latitude: 34.04617
Longitude: -118.25479

SWEEPS UST:
Status: A
Comp Number: 7977
Number: 3
Board Of Equalization: Not reported
Ref Date: 03-09-93
Act Date: 03-09-93
Created Date: 02-29-88
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

HAZNET:
Year: 2008
Gepaid: CAC002628643
Contact: PEDRO SANCHEZ
Telephone: 2136305260
Mailing Name: Not reported
Mailing Address: 431 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900141601
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

AB569 **CHAS F/F G HATHAWAY** **CA FID UST** **S101584709**
NE **431 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
32 ft. **Site 11 of 14 in cluster AB**

Relative:
Higher

Actual:
262 ft.

CA FID UST:

Facility ID:	19014644
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	UNK
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

AB570 **LA ATHLETIC CLUB** **HAZNET** **S102803406**
NE **431 W 7TH ST** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
32 ft. **Site 12 of 14 in cluster AB**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001039504
Contact:	LA ATHLETIC CLUB
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	431 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD089446710
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC001039504
Contact:	LA ATHLETIC CLUB
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	431 W 7TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Unspecified solvent mixture
Disposal Method:	Transfer Station
Tons:	.2293

LA ATHLETIC CLUB (Continued) **S102803406**

Facility County: Los Angeles

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	11
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	26
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7941
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	35
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	33
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC

LA ATHLETIC CLUB (Continued) **S102803406**

Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	27
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	30
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	33
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	30
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	27
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	30
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

LA ATHLETIC CLUB (Continued) **S102803406**

Total Organic Hydrocarbon Gases Tons/Yr:	27
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	4
NOX - Oxides of Nitrogen Tons/Yr:	30
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	21
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
County Code:	19
Air Basin:	SC
Facility ID:	17623
Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

LA ATHLETIC CLUB (Continued) **S102803406**

Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 2004
County Code: 19
Air Basin: SC
Facility ID: 17623
Air District Name: SC
SIC Code: 7997
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0.216378
Reactive Organic Gases Tons/Yr: 0.15
Carbon Monoxide Emissions Tons/Yr: 0.471612
NOX - Oxides of Nitrogen Tons/Yr: 0.842683
SOX - Oxides of Sulphur Tons/Yr: 0.004725
Particulate Matter Tons/Yr: 0.045887
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0.04

Year: 2005
County Code: 19
Air Basin: SC
Facility ID: 17623
Air District Name: SC
SIC Code: 7997
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: .22851
Reactive Organic Gases Tons/Yr: .199584122
Carbon Monoxide Emissions Tons/Yr: .74266
NOX - Oxides of Nitrogen Tons/Yr: .57537
SOX - Oxides of Sulphur Tons/Yr: .004915
Particulate Matter Tons/Yr: .06081
Part. Matter 10 Micrometers & Smllr Tons/Yr: .0607842

Year: 2006
County Code: 19
Air Basin: SC
Facility ID: 17623
Air District Name: SC
SIC Code: 7997
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: .1042596059715999847
Reactive Organic Gases Tons/Yr: .046
Carbon Monoxide Emissions Tons/Yr: .654
NOX - Oxides of Nitrogen Tons/Yr: 1.04
SOX - Oxides of Sulphur Tons/Yr: .006
Particulate Matter Tons/Yr: .312
Part. Matter 10 Micrometers & Smllr Tons/Yr: .237

Year: 2007
County Code: 19
Air Basin: SC
Facility ID: 17623

LA ATHLETIC CLUB (Continued) **S102803406**

Air District Name:	SC
SIC Code:	7997
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1042596059715999847
Reactive Organic Gases Tons/Yr:	.046
Carbon Monoxide Emissions Tons/Yr:	.654
NOX - Oxides of Nitrogen Tons/Yr:	1.04
SOX - Oxides of Sulphur Tons/Yr:	.006
Particulate Matter Tons/Yr:	.312
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.237

AB571 **LOS ANGELES ATHLETIC CLUB** **FINDS** **1004441531**
NE **431 WEST 7TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
32 ft. **Site 13 of 14 in cluster AB**

Relative:
Higher

Actual:
262 ft.

FINDS:

Registry ID: 110010477180

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

AB572 **LOS ANGELES ATHLETIC CLUB** **FINDS** **1012235714**
NE **431 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
32 ft. **Site 14 of 14 in cluster AB**

Relative:
Higher

Actual:
262 ft.

FINDS:

Registry ID: 110039564717

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

AY573 **1026 SOUTH BROADWAY PL** **NPDES** **S111213969**
SSE **1026 S BROADWAY PL** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.006 mi.
32 ft. **Site 5 of 5 in cluster AY**

Relative:
Lower

Actual:
246 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	403581
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C358410
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/08/2010
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	01/13/2012
Discharge Name:	L&R Investment Co
Discharge Address:	515 S Flower St 3200
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90071

BG574 **THE COLBURM SCHOOL** **HAZNET** **S110371593**
NE **200 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.006 mi.
33 ft. **Site 1 of 7 in cluster BG**

Relative:
Higher

Actual:
407 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002646233
Contact:	SANDY SILVER
Telephone:	2136214790
Mailing Name:	Not reported
Mailing Address:	200 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123007
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Latex waste
Disposal Method:	Other Treatment
Tons:	1.8765
Facility County:	Los Angeles

C575
NE
< 1/8
0.006 mi.
33 ft.

LA CO ISD L A COURT HOUSE
111 N HILL ST
LOS ANGELIS, CA

LOS ANGELES CO. HMS **S100614878** **N/A**

Site 6 of 11 in cluster C

Relative: **Higher**

Actual: **327 ft.**

LOS ANGELES CO. HMS:

Region:	LA
Facility Id:	012451-012599
Facility Type:	Not reported
Facility Status:	OPEN
Area:	3F
Permit Number:	Not reported
Permit Status:	Not reported

576
ENE
< 1/8
0.006 mi.
34 ft.

AMERICAN DYE WORKS
542 S BROADWAY
LOS ANGELES, CA

EDR Historical Cleaners **1009188340** **N/A**

Relative: **Higher**

Actual: **270 ft.**

EDR Historical Cleaners:

Name:	AMERICAN DYE WORKS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

M577
ENE
< 1/8
0.006 mi.
34 ft.

BRANCHES
417 W 7TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009187717** **N/A**

Site 52 of 56 in cluster M

Relative: **Higher**

Actual: **262 ft.**

EDR Historical Cleaners:

Name:	BRANCHES
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	BRANCHES
Year:	1929
Type:	CLEANERS AND DYERS

M578
ENE
< 1/8
0.006 mi.
34 ft.

PAULEEN JEWELRY
411 W 7TH ST
LOS ANGELES, CA 90014

RCRA-SQG **FINDS** **1000279916** **CAD982053548**

Site 53 of 56 in cluster M

Relative: **Higher**

Actual: **262 ft.**

RCRA-SQG:

Date form received by agency:	10/19/1987
Facility name:	PAULEEN JEWELRY
Facility address:	411 W 7TH ST LOS ANGELES, CA 90014
EPA ID:	CAD982053548
Mailing address:	W 7TH ST LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	411 W 7TH ST

PAULEEN JEWELRY (Continued) **1000279916**

	LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(415) 555-1212
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	TONY ZENTANIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002790249

Environmental Interest/Information System

PAULEEN JEWELRY (Continued) **1000279916**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

M579
ENE **411 WEST 7TH STREET** **CHMIRS** **S105647375**
< 1/8 **LOS ANGELES, CA 90012** **N/A**
0.006 mi.
34 ft. **Site 54 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

CHMIRS:

OES Incident Number:	011637
OES notification:	Not reported
OES Date:	1/6/1996
OES Time:	08:40:42 PM
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	YES
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported

(Continued) **S105647375**

Type:	CHEMICAL
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1996
Agency:	la city fd
Incident Date:	1802/1-6-96
Admin Agency:	Not reported
Amount:	unknown
Contained:	NO
Site Type:	OTHER
E Date:	Not reported
Substance:	waste water with possible cyanide and heavy metal contamination
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	NO
Number of Injuries:	NO
Number of Fatalities:	NO
Description:	recovery system in building failed causing overflow in diked area.

M580 **LEE'S GOLD ASSAY COMPANY** **HAZNET** **S111084255**
ENE **411 W 7TH ST STE 613** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.006 mi.
34 ft. **Site 55 of 56 in cluster M**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000352880
Contact:	KIRK YONG LEE
Telephone:	2134881320
Mailing Name:	Not reported
Mailing Address:	411 W 7TH ST STE 613
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.02085
Facility County:	Los Angeles

581 **MORGAN F F** **EDR Historical Cleaners** **1009192326**
SSE **1013 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.006 mi.
34 ft.

Relative: Lower
Actual: 247 ft.

EDR Historical Cleaners:

Name:	MORGAN F F
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

BD582 **KEVORRANDSONS** **HAZNET** **S103973411**
ENE **707 S BROADWEY #401** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.007 mi.
39 ft. **Site 14 of 18 in cluster BD**

Relative: Higher
Actual: 258 ft.

HAZNET:

Year:	1997
Gepaid:	CAL000057696
Contact:	KEVORK YESSAIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	707 S BROADWEY #401
Mailing City,St,Zip:	LOS ANGELE, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	NVD982358483
TSD County:	99
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	7.9229
Facility County:	Los Angeles

W583 **DOWNTOWN ONE HOUR PHOTO** **RCRA-SQG** **1000322710**
WNW **951 S FIGUEROA** **FINDS** **CAD011538758**
< 1/8 **LOS ANGELES, CA 90015**
0.007 mi.
39 ft. **Site 4 of 5 in cluster W**

Relative: Lower
Actual: 252 ft.

RCRA-SQG:

Date form received by agency:	08/11/1986
Facility name:	DOWNTOWN ONE HOUR PHOTO
Facility address:	951 S FIGUEROA LOS ANGELES, CA 90019
EPA ID:	CAD011538758
Mailing address:	S FIGUEROA LOS ANGELES, CA 90019
Contact:	ENVIRONMENTAL MANAGER
Contact address:	951 S FIGUEROA LOS ANGELES, CA 90019
Contact country:	US
Contact telephone:	(213) 629-0173
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous

DOWNTOWN ONE HOUR PHOTO (Continued) **1000322710**

waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ALBERTA GREENBAUM
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002638290

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

R584 **NNW** **< 1/8** **0.008 mi.** **41 ft.**

GAINES H H
818 W 8TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009188050** **N/A**

Site 11 of 13 in cluster R

Relative: Higher

Actual: 255 ft.

EDR Historical Cleaners:

Name:	GAINES H H
Year:	1929
Type:	LAUNDRIES HAND

C585 **NE** **< 1/8** **0.008 mi.** **41 ft.**

COUNTY COURTHOUSE
111 N HILL ST
LOS ANGELES, CA 90063

HIST UST **U001562244** **N/A**

Site 7 of 11 in cluster C

Relative: Higher

Actual: 328 ft.

HIST UST:

Region:	STATE
Facility ID:	00000020715
Facility Type:	Other
Other Type:	COURTHOUSE
Total Tanks:	0001
Contact Name:	L.A. COUNTY MECHANICAL DEPARTM
Telephone:	2132672242
Owner Name:	LOS ANGELES COUNTY MECHANICAL
Owner Address:	1100 N. EASTERN
Owner City,St,Zip:	LOS ANGELES, CA 90063

Tank Num:	001
Container Num:	#1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

C586 **NE** **< 1/8** **0.008 mi.** **41 ft.**

COUNTY COURT/LA CO. F.M.D..
111 N HILL ST
LOS ANGELES, CA 90012

UST **U003879444** **N/A**

Site 8 of 11 in cluster C

Relative: Higher

Actual: 328 ft.

UST:

Facility ID:	24319
Latitude:	34.05443
Longitude:	-118.24651

C587 **NE** **< 1/8** **0.008 mi.** **41 ft.**	**COUNTY COURT/LACO F.M.D.** **111 N HILL ST** **LOS ANGELES, CA 90012** **Site 9 of 11 in cluster C**	**CA FID UST** **SWEEPS UST** **HAZNET**	**S101583951** **N/A**

Relative:
Higher

Actual:
328 ft.

CA FID UST:

Facility ID:	19007548
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132672242
Mail To:	Not reported
Mailing Address:	111 N HILL ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	5898
Number:	5
Board Of Equalization:	Not reported
Ref Date:	03-10-93
Act Date:	03-10-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	1999
Gepaid:	CAL000010001
Contact:	COUNTY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123117
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	40.4544
Facility County:	Los Angeles

COUNTY COURT/LACO F.M.D. (Continued) **S101583951**

Year:	1996
Gepaid:	CAL000010001
Contact:	COUNTY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123117
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1438
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000010001
Contact:	COUNTY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123117
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.2979
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000010001
Contact:	COUNTY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123117
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.1792
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000014649
Contact:	COUNTY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill

COUNTY COURT/LACO F.M.D. (Continued) **S101583951**

Tons:	.5899
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

C588
NE
< 1/8
0.008 mi.
41 ft.

CNTY OF LOS ANGELES/ISD **HAZNET** **S108202721**
111 N HILL ST **N/A**
LOS ANGELES, CA 90012

Site 10 of 11 in cluster C

Relative:
Higher

Actual:
328 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002575293
Contact:	BELINDA RAMIREZ/HAZ MAT COORD
Telephone:	3232673137
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90063
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.08
Facility County:	Not reported

C589
NE
< 1/8
0.008 mi.
41 ft.

LOS ANGELES COUNTY **HAZNET** **S105084527**
111 NORTH HILL ST **N/A**
LOS ANGELES, CA 90012

Site 11 of 11 in cluster C

Relative:
Higher

Actual:
328 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002204929
Contact:	LOS ANGELES COUNTY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1100 NORTHEASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900630000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	67.4240
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002204929
Contact:	LOS ANGELES COUNTY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1100 NORTHEASTERN AVE

LOS ANGELES COUNTY (Continued) **S105084527**

Mailing City,St,Zip:	LOS ANGELES, CA 900630000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	101.1360
Facility County:	Los Angeles

M590 **GOLD ANGLES** **RCRA-SQG** **1000182627**
NE **650 S HILL ST # 418 B** **FINDS** **CAD982346678**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
42 ft. **Site 56 of 56 in cluster M**

Relative:
Higher

Actual:
265 ft.

RCRA-SQG:

Date form received by agency:	01/29/1988
Facility name:	GOLD ANGLES
Facility address:	650 S HILL ST # 418 B LOS ANGELES, CA 90014
EPA ID:	CAD982346678
Contact:	ENVIRONMENTAL MANAGER
Contact address:	650 S HILL ST # 418 B LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 624-5980
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ANTO KALANDJIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

GOLD ANGLES (Continued) **1000182627**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002797661

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S591
ENE
< 1/8
0.008 mi.
43 ft.

CARL’S JR. CARL KARCHER ENT.,
620 S BROADWAY
LOS ANGELES, CA 90014

EMI **S106828061**
N/A

Site 20 of 79 in cluster S

Relative:
Higher

Actual:
261 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	67713
Air District Name:	SC
SIC Code:	5812
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

592 **RAY'S JEWELRY REPAIR** **HAZNET** **S107140797**
ENE **640 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft.

Relative: Higher

Actual: 261 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002564003
Contact:	RAYMOND ZAKARIAN
Telephone:	2132390336
Mailing Name:	Not reported
Mailing Address:	640 S BROADWAY BOX 47
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAL000161743
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	5.42
Facility County:	Los Angeles

S593 **VIKEN'S JEWELRY** **HAZNET** **S103666740**
ENE **610 S BROADWAY #1024** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 21 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000069383
Contact:	VIKEN TOROSSIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY STE 1024
Mailing City,St,Zip:	LOS ANGELES, CA 900141817
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.4586
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000069383
Contact:	VIKEN TOROSSIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY STE 1024
Mailing City,St,Zip:	LOS ANGELES, CA 900141817
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

S594 **G&R JEWELRY** **RCRA-SQG** **1000120953**
ENE **610 S BROADWAY #516** **FINDS** **CAD112817762**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 22 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	08/18/1986
Facility name:	G&R JEWELRY
Facility address:	610 S BROADWAY #516 LOS ANGELES, CA 90014
EPA ID:	CAD112817762
Mailing address:	610 S BRPADWAY #FIFTH HUNDRED LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY #516 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 627-1029
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	GARY KOJANBABIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

G&R JEWELRY (Continued) **1000120953**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002667436

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S595
ENE
< 1/8
0.008 mi.
43 ft.

MARKOSYAN JEWELRY **EMI** **S106835180**
610 S BROADWAY #413 **N/A**
LOS ANGELES, CA 90014

Site 23 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57010
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57010
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

MARKOSYAN JEWELRY (Continued) **S106835180**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S596
ENE
< 1/8
0.008 mi.
43 ft.

VIKEN'S JEWELRY, V TOROSSIAN D **EMI** **S106842168**
610 S BROADWAY, # 1024 **N/A**
LOS ANGELES, CA 90014

Site 24 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56404
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56404
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S597 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**ANTRO JEWELRY INC** **610 SOUTH BROADWAY #808** **LOS ANGELES, CA 90014** **Site 25 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000365955** **CAD981396757**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	04/21/1986
Facility name:	ANTRO JEWELRY INC
Facility address:	610 SOUTH BROADWAY #808 LOS ANGELES, CA 90014
EPA ID:	CAD981396757
Mailing address:	SOUTH BROADWAY #808 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 SOUTH BROADWAY #808 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-5417
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HAROUTIOUN MANOUKIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

ANTRO JEWELRY INC (Continued) **1000365955**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002693265

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S598 **ADAMIAN JEWELRY, V & S ADAMIAN** **EMI** **S106825357**
ENE **610 S BROADWAY #601** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 26 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56925
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S599 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**MODERN STYLING, KARIM HABER DB** **610 S BROADWAY, # 209** **LOS ANGELES, CA 90014** **Site 27 of 79 in cluster S**	**EMI**	**S106835816** **N/A**

Relative: **Higher**

Actual: **262 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57967
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S600 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**ADAMIAN JEWELRY** **610 S BROADWAY** **LOS ANGELES, CA 90014** **Site 28 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000299124** **CAD981674765**

Relative: **Higher**

Actual: **262 ft.**

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	ADAMIAN JEWELRY
Facility address:	610 S BROADWAY LOS ANGELES, CA 90014
EPA ID:	CAD981674765
Mailing address:	610 S BROADWAY #SIXTH HUNDRED LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	VARTAN ADAMIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212

ADAMIAN JEWELRY (Continued) **1000299124**

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/19/1986
Facility name: ADAMIAN JEWELRY
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 06/16/1994
Date achieved compliance: 06/16/1999
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 06/16/1994
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

ADAMIAN JEWELRY (Continued) **1000299124**

Area of violation: Generators - General
Date achieved compliance: 06/16/1999
Evaluation lead agency: State Contractor/Grantee

FINDS:

Registry ID: 110006177966

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S601 **RAZMIK'S DESIGN** **EMI** **S106838068**
ENE **610 S BROADWAY, # 1020** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 29 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56425
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56425
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S602 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

SAHAG & SONS, M & G KJUREGHIAN
610 S. BROADWAY, # 610
LOS ANGELES, CA 90014

Site 30 of 79 in cluster S

EMI **S106838721** **N/A**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56898
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S603 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

PIERELDA JEWELRY
610 S BROADWAY #320
LOS ANGELES, CA 90014

Site 31 of 79 in cluster S

EMI **S106837461** **N/A**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57564
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S604 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

GOLDEN ART JEWELRY
610 S. BROADWAY #308
LOS ANGELES, CA 90014

Site 32 of 79 in cluster S

RCRA-SQG **FINDS** **1000186929** **CAD981435746**

Relative: Higher

Actual: 262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	GOLDEN ART JEWELRY
Facility address:	610 S. BROADWAY #308

GOLDEN ART JEWELRY (Continued) **1000186929**

	LOS ANGELES, CA 90014
EPA ID:	CAD981435746
Mailing address:	S. BROADWAY #THIRD HUNDRED
	LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOUBAR JEHIZIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

GOLDEN ART JEWELRY (Continued) **1000186929**

Violation Status: No violations found

FINDS:

Registry ID: 110002704529

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S605 **GOLDEN ART JEWELERY** **EMI** **S106831842**
ENE **610 S BROADWAY #308** **N/A**
< 1/8 **LOS ANGELES, CA, CA 90014**
0.008 mi.
43 ft. **Site 33 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57055
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S606 **14 K.V. JEWELRY** **EMI** **S106825040**
ENE **610 S. BROADWAY #215** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 34 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57181
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

14 K.V. JEWELRY (Continued) **S106825040**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S607 **BASHOURA JEWELRY MFG, J BASHOU** **EMI** **S106826698**
ENE **610 S BROADWAY, SUITE 911** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 35 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56438
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S608 **MESROBIAN JEWELRY** **RCRA-SQG** **1000366577**
ENE **610 S. BROADWAY #710** **FINDS** **CAD126408731**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 36 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	MESROBIAN JEWELRY
Facility address:	610 S. BROADWAY #710 LOS ANGELES, CA 90014
EPA ID:	CAD126408731
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

MESROBIAN JEWELRY (Continued) **1000366577**

Owner/Operator Summary:

Owner/operator name:	KRIKOR MESROBIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/03/1986
Facility name:	MESROBIAN JEWELRY
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002668284

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S609 **M.J.M. MOURAD'S JEWELRY MFG, M** **EMI** **S106834936**
ENE **610 S BROADWAY #717** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 37 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56705
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56705
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S610 **ARAM & AGOB JEWELRY INC** **EMI** **S106826104**
ENE **610 S BROADWAY #306** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 38 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57003
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0

ARAM & AGOB JEWELRY INC (Continued) **S106826104**

NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

S611 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**ROSE JEWELRY** **610 S BROADWAY #925** **LOS ANGELES, CA 90014** **Site 39 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000197235** **CAD981690332**

Relative: **Higher**

Actual: **262 ft.**

RCRA-SQG:

Date form received by agency:	11/27/1986
Facility name:	ROSE JEWELRY
Facility address:	610 S BROADWAY #925 LOS ANGELES, CA 90014
EPA ID:	CAD981690332
Mailing address:	S BROADWAY #NINETH HUNDRED LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY #NINETH HUNDRED LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-4761
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	VAROUJ BARSAMIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

ROSE JEWELRY (Continued) **1000197235**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002754172

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S612 **MESROBIAN JEWELRY CO, K MESROB** **EMI** **S106835504**
ENE **610 S BROADWAY #710** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 40 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56566
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S613 **T. NAZARETIAN & SONS, NAZARETI** **EMI** **S106840465**
ENE **610 S BROADWAY #211** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 41 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	57108
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S614 **H AND T JEWELERY REMFG** **HAZNET** **S105723397**
ENE **610 S BROADWAY #1007** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 42 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2001
Gepaid:	CAL000162965
Contact:	MIAKELASH CHYAN
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY STE 1007
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	San Mateo
Waste Category:	Liquids with pH <= 2
Disposal Method:	Not reported
Tons:	0.22
Facility County:	Not reported

S615 **610 BROADWAY ASSOCIATES** **RCRA-SQG** **1000105401**
ENE **610 S BROADWAY STE 714** **FINDS** **CAD982504466**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
0.008 mi.
43 ft. **Site 43 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	03/10/1998
Facility name:	610 BROADWAY ASSOCIATES
Facility address:	610 S BROADWAY STE 714
	LOS ANGELES, CA 900141889
EPA ID:	CAD982504466

610 BROADWAY ASSOCIATES (Continued) **1000105401**

Mailing address:	610 SOUTH BROADWAY SUITE 714 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY STE 714 LOS ANGELES, CA 900141889
Contact country:	US
Contact telephone:	(213) 622-8484
Contact email:	Not reported
EPA Region:	09
Land type:	Other land type
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	610 BROADWAY ASSOCIAT/REDLICH GADI ENG
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/01/1996
Facility name:	610 BROADWAY ASSOCIATES
Classification:	Large Quantity Generator

Date form received by agency:	02/28/1996
Facility name:	610 BROADWAY ASSOCIATES
Site name:	WEST COAST JEWELRY CENTER
Classification:	Large Quantity Generator

Date form received by agency:	12/28/1989

610 BROADWAY ASSOCIATES (Continued) **1000105401**

Facility name: 610 BROADWAY ASSOCIATES
Classification: Small Quantity Generator

Date form received by agency: 12/28/1989
Facility name: 610 BROADWAY ASSOCIATES
Classification: Small Quantity Generator

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 03/14/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

FINDS:

Registry ID: 110000898912

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 1997
Gepaid: CAD982504466
Contact: 610 BROADWAY ASSOCIATES
Telephone: 2136228484
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 714
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Other
Tons: 16.8560
Facility County: Los Angeles

Year: 1997
Gepaid: CAD982504466
Contact: 610 BROADWAY ASSOCIATES
Telephone: 2136228484
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 714
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: AZD060624251
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Recycler

610 BROADWAY ASSOCIATES (Continued) **1000105401**

Tons: 24.0000
Facility County: Los Angeles

Year: 1996
Gepaid: CAD982504466
Contact: 610 BROADWAY ASSOCIATES
Telephone: 2136228484
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 714
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: AZD060624251
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: 76.0000
Facility County: Los Angeles

Year: 1996
Gepaid: CAD982504466
Contact: 610 BROADWAY ASSOCIATES
Telephone: 2136228484
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 714
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: 55.2000
Facility County: Los Angeles

Year: 1995
Gepaid: CAD982504466
Contact: 610 BROADWAY ASSOCIATES
Telephone: 2136228484
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 714
Mailing City,St,Zip: LOS ANGELES, CA 900141814
Gen County: Los Angeles
TSD EPA ID: AZD060624251
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: 109.0000
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

S616 **L & M JEWELRY** **EMI** **S106833965**
ENE **610 S BROADWAY # 111** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 44 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56442
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S617 **BERBERIAN JEWELRY MANUFACTURING INC** **HAZNET** **S105725327**
ENE **610 S BROADWAY #1107** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 45 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2005
Gepaid:	CAL000221940
Contact:	SAHAK BERBERIAN-GENERAL MGR
Telephone:	2136894841
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY #1107
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	NVD980895338
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Disposal, Land Fill
Tons:	Not reported
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000221940
Contact:	SAHAK BERBERIAN-GENERAL MGR
Telephone:	2136894841
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY #1107
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	NVD980895338
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Disposal, Land Fill
Tons:	Not reported
Facility County:	Not reported

BERBERIAN JEWELRY MANUFACTURING INC (Continued) **S105725327**

Year:	2001
Gepaid:	CAL000221940
Contact:	SAHAK BERBERIAN-GENERAL MGR
Telephone:	2136894841
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY #1107
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2 with metals
Disposal Method:	Recycler
Tons:	0.35
Facility County:	Not reported

S618 **NUBAR KEGULIAN FINE JEWELRY** **EMI** **S106836496**
ENE **610 S BROADWAY # 510** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 46 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56737
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56737
Air District Name:	SC
SIC Code:	3911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S619 **AGOB BEHLOORIAN** **RCRA-SQG** **1000161237**
ENE **610 SOUTH BROADWAY #306** **FINDS** **CAD981396815**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 47 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	04/21/1986
Facility name:	AGOB BEHLOORIAN
Facility address:	610 SOUTH BROADWAY #306 LOS ANGELES, CA 90014
EPA ID:	CAD981396815
Mailing address:	SOUTH BROADWAY #306 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 SOUTH BROADWAY #306 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 999-9999
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	AGOB BEHLOORIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

AGOB BEHLOORIAN (Continued) **1000161237**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002693283

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S620
ENE
< 1/8
0.008 mi.
43 ft.

M&A JEWELRY MFG
610 S BROADWAY #924
LOS ANGELES, CA 90014

EMI **S106834912**
N/A

Site 48 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

EMI:

Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 56633
Air District Name: SC
SIC Code: 3369
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 56633
Air District Name: SC
SIC Code: 3369
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0

M&A JEWELRY MFG (Continued) **S106834912**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S621
ENE
< 1/8
0.008 mi.
43 ft.

INTERSTATE JEWELRY
610 S BROADWAY #612
LOS ANGELES, CA 90014

RCRA-SQG **1000219065**
FINDS **CAD981613193**

Site 49 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	11/20/1986
Facility name:	INTERSTATE JEWELRY
Facility address:	610 S BROADWAY #612 LOS ANGELES, CA 90014
EPA ID:	CAD981613193
Mailing address:	S BROADWAY #612 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY #612 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 627-8919
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HAGOP YOUSOUFIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No

INTERSTATE JEWELRY (Continued) **1000219065**

Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002723688

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S622 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**LAROUJ JEWELRY MFG** **610 S. BROADWAY #322** **LOS ANGELS, CA, CA 90014** **Site 50 of 79 in cluster S**	**EMI**	**S106834331** **N/A**

Relative:
Higher

Actual:
262 ft.

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 57533
Air District Name: SC
SIC Code: 9999
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

S623 **PRESTIGE JEWELRY** **RCRA-SQG** **1000388908**
ENE **610 S BROADWAY #320** **FINDS** **CAD981690217**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 51 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	11/27/1986
Facility name:	PRESTIGE JEWELRY
Facility address:	610 S BROADWAY #320
	LOS ANGELES, CA 90014
EPA ID:	CAD981690217
Mailing address:	S BROADWAY #320
	LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY #320
	LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 629-5724
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SARKIS TANIDJIAN
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

PRESTIGE JEWELRY (Continued) **1000388908**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002754092

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S624 **CA LINKS INC** **HAZNET** **S106093353**
ENE **610 S BROADWAY #1020** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 52 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

HAZNET:

Year: 2002
Gepaid: CAL000251836
Contact: AUTHUR KATRDZHYAN
Telephone: 2136888815
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY #1020
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Liquids with pH <= 2 with metals
Disposal Method: Recycler
Tons: 0.06
Facility County: Not reported

Year: 2002
Gepaid: CAL000251836
Contact: AUTHUR KATRDZHYAN
Telephone: 2136888815
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY #1020
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method: Recycler

CA LINKS INC (Continued) **S106093353**

Tons: 0.10
Facility County: Not reported

S625 **ENE** **< 1/8** **0.008 mi.** **43 ft.**	**FORT KNOX DESIGNS** **610 S. BROADWAY - #226** **LOS ANGELES, CA 90014** **Site 53 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000392544** **CAD082701509**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:
Date form received by agency: 06/03/1986
Facility name: FORT KNOX DESIGNS
Facility address: 610 S. BROADWAY - #226
LOS ANGELES, CA 90014
EPA ID: CAD082701509
Mailing address: S. BROADWAY - #226
LOS ANGELES, CA 90014
Contact: ENVIRONMENTAL MANAGER
Contact address: 610 S. BROADWAY - #226
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 489-7260
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: BRYAN L SIEGEL
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No

FORT KNOX DESIGNS (Continued) **1000392544**

Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002660905

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S626 **TWO STAR JEWELRY** **EMI** **S106841489**
ENE **610 S BROADWAY, STE 608** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 54 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56572
Air District Name:	SC
SIC Code:	5094
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S627 **KEVO'S JEWELRY** **RCRA-SQG** **1000327394**
ENE **610 S. BROADWAY #1102** **FINDS** **CAD051026623**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 55 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	KEVO'S JEWELRY
Facility address:	610 S. BROADWAY #1102 LOS ANGELES, CA 90014
EPA ID:	CAD051026623
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KEVORK BASTEKIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

KEVO'S JEWELRY (Continued) **1000327394**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/03/1986
Facility name: KEVO'S JEWELRY
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002648298

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S628
ENE
< 1/8
0.008 mi.
43 ft.

ADN JEWELRY MFG
610 S BROADWAY ST #802
LOS ANGELES, CA 90014

Site 56 of 79 in cluster S

RCRA-SQG **1000120954**
FINDS **CAD981163538**

Relative:
Higher

Actual:
262 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: ADN JEWELRY MFG
Facility address: 610 S BROADWAY ST #802
LOS ANGELES, CA 90014
EPA ID: CAD981163538
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: DAVID AROYAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported

ADN JEWELRY MFG (Continued) **1000120954**

Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	11/13/1985
Facility name:	ADN JEWELRY MFG
Classification:	Large Quantity Generator
Violation Status:	No violations found

FINDS:

Registry ID: 110002679600

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S629 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

MY WAY JEWELRY CO INC
610 S BROADWAY #905
LOS ANGELES, CA 90014

Site 57 of 79 in cluster S

EMI **S106836079** **N/A**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56422
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56422
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S630 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

ASTRO DISTRIBUTORS INC.
610 S. BROADWAY #820
LOS ANGELES, CA 90014

Site 58 of 79 in cluster S

RCRA-SQG **FINDS** **1000365814** **CAD108170010**

Relative: Higher

Actual: 262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	ASTRO DISTRIBUTORS INC.
Facility address:	610 S. BROADWAY #820 LOS ANGELES, CA 90014
EPA ID:	CAD108170010
Mailing address:	S. BROADWAY #EIGHTH HUNDRE LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported

ASTRO DISTRIBUTORS INC. (Continued) **1000365814**

Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: KHATCHIK DJIGARDJIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002667230

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

ASTRO DISTRIBUTORS INC. (Continued) **1000365814**

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S631 **LUCKY HAND JEWELRY** **EMI** **S106834836**
ENE **610 SO. BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 59 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56524
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S632 **J.M.C. JEWELRY MFG** **EMI** **S106833323**
ENE **610 S BROADWAY #703** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 60 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56691
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S633 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

INTERSTATE JEWELRY MFG CO
610 S BROADWAY # 612
LOS ANGELES, CA 90014

EMI **S106833099** **N/A**

Site 61 of 79 in cluster S

Relative: **Higher**

Actual: **262 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56736
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S634 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

VENK JEWELERS
610 S. BROADWAY #315
LOS ANGELES, CA 90014

EMI **S106842106** **N/A**

Site 62 of 79 in cluster S

Relative: **Higher**

Actual: **262 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57176
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S635 **ENE** **< 1/8** **0.008 mi.** **43 ft.**

A&V MANUFACTURING CO INC
610 S BROADWAY #620
LOS ANGELES, CA 90014

RCRA-SQG **FINDS** **1000123485** **CAD982478265**

Site 63 of 79 in cluster S

Relative: **Higher**

Actual: **262 ft.**

RCRA-SQG:

Date form received by agency:	06/14/1988
Facility name:	A&V MANUFACTURING CO INC
Facility address:	610 S BROADWAY #620

A&V MANUFACTURING CO INC (Continued) **1000123485**

	LOS ANGELES, CA 90014
EPA ID:	CAD982478265
Mailing address:	S BROADWAY #620 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY #620 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-4080
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	JOE HUTNICKI
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

A&V MANUFACTURING CO INC (Continued) **1000123485**

Violation Status: No violations found

FINDS:

Registry ID: 110002823687

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S636 **610 BROADWAY ENTERPRISE** **RCRA-SQG** **1000105395**
ENE **610 BROADWAY** **FINDS** **CAD980895262**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 64 of 79 in cluster S**

Relative: Higher

Actual: 262 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	610 BROADWAY ENTERPRISE
Facility address:	610 BROADWAY LOS ANGELES, CA 90014
EPA ID:	CAD980895262
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

610 BROADWAY ENTERPRISE (Continued) **1000105395**

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 12/20/1984
Facility name: 610 BROADWAY ENTERPRISE
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110009533825

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S637 **NORA'S FINE JEWELRY** **EMI** **S106836342**
ENE **610 S BROADWAY #1011** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 65 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 56519
Air District Name: SC
SIC Code: 3369
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

NORA'S FINE JEWELRY (Continued) **S106836342**

Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56519
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S638
ENE
< 1/8
0.008 mi.
43 ft.

LAROUJ JEWELRY MFG
610 S BROADWAY, #322
LOS ANGELES, CA 90014

Site 66 of 79 in cluster S

EMI **S106834330**
N/A

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57533
Air District Name:	SC
SIC Code:	3299
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S639 **HAIG'S** **EMI** **S106832273**
ENE **610 S BROADWAY #801** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 67 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56520
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S640 **M & S JEWELRY MFG INC** **EMI** **S106834889**
ENE **610 S BROADWAY #708** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 68 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56701
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S641 **HAKOPIAN JEWELRY** **EMI** **S106832276**
ENE **610 SO BROADWAY #1124** **N/A**
< 1/8 **LSO ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 69 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC

HAKOPIAN JEWELRY (Continued) **S106832276**

Facility ID:	56527
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S642 **R & M FINE INC** **HAZNET** **S106094004**
ENE **610 S BROADWAY AVE STE 721** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 70 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000261691
Contact:	SILVIA MEZKOULONJIAN/PRES
Telephone:	3234881747
Mailing Name:	Not reported
Mailing Address:	610 S BROADWAY AVE STE 721
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	0.21
Facility County:	Not reported

S643 **HAGO'S WAY JEWELRY MFG, A DAGL** **EMI** **S106832269**
ENE **610 S BROADWAY # 908** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
43 ft. **Site 71 of 79 in cluster S**

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56441
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

HAGO'S WAY JEWELRY MFG, A DAGL (Continued) **S106832269**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S644
ENE
< 1/8
0.008 mi.
43 ft.

A & V MANUFACTURING CO INC
610 S BROADWAY, # 620
LOS ANGELES, CA 90014

EMI **S106825114**
N/A

Site 72 of 79 in cluster S

Relative:
Higher

Actual:
262 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56927
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

S645
ENE
< 1/8
0.008 mi.
44 ft.

LOS ANGELES THEATRE
612 SO. BROADWAY
LOS ANGELES, CA 90014

HAZNET **S103975418**
N/A

Site 73 of 79 in cluster S

Relative:
Higher

Actual:
261 ft.

HAZNET:

Year:	1996
Gepaid:	CAC000932912
Contact:	MICHAEL DELIJANI
Telephone:	3105501020
Mailing Name:	Not reported
Mailing Address:	9701 WILSHIRE BLVD. #1210
Mailing City,St,Zip:	BEVERLY HILLS, CA 902120000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Tons:	1.1467
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAC000932912
Contact:	MICHAEL DELIJANI
Telephone:	3105501020
Mailing Name:	Not reported
Mailing Address:	9701 WILSHIRE BLVD. #1210

LOS ANGELES THEATRE (Continued) **S103975418**

Mailing City,St,Zip: BEVERLY HILLS, CA 902120000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Not reported
Tons: .0000
Facility County: Los Angeles

Year: 1996
Gepaid: CAC000932912
Contact: MICHAEL DELIJANI
Telephone: 3105501020
Mailing Name: Not reported
Mailing Address: 9701 WILSHIRE BLVD. #1210
Mailing City,St,Zip: BEVERLY HILLS, CA 902120000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Disposal, Land Fill
Tons: 7.5852
Facility County: Los Angeles

Year: 1996
Gepaid: CAC000932912
Contact: MICHAEL DELIJANI
Telephone: 3105501020
Mailing Name: Not reported
Mailing Address: 9701 WILSHIRE BLVD. #1210
Mailing City,St,Zip: BEVERLY HILLS, CA 902120000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-up
Disposal Method: Not reported
Tons: .0000
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000932912
Contact: MICHAEL DELIJANI
Telephone: 3105501020
Mailing Name: Not reported
Mailing Address: 9701 WILSHIRE BLVD. #1210
Mailing City,St,Zip: BEVERLY HILLS, CA 902120000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 6.7424
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

BH646 **THE KOR GROUP** **HAZNET** **S108756412**
ESE **849 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
44 ft. **Site 1 of 5 in cluster BH**

Relative: Lower

Actual: 252 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002611225
Contact:	ANWAR KHAN
Telephone:	2132688800
Mailing Name:	Not reported
Mailing Address:	849 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.45
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002611225
Contact:	ANWAR KHAN
Telephone:	2132688800
Mailing Name:	Not reported
Mailing Address:	849 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	H14
Tons:	0.6
Facility County:	Los Angeles

BH647 **EASTERN COLUMBIA BLDG** **EMI** **S106830442**
ESE **849 SO BROADWAY STE 215** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
44 ft. **Site 2 of 5 in cluster BH**

Relative: Lower

Actual: 252 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	72586
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

EASTERN COLUMBIA BLDG (Continued) **S106830442**

Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	72586
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	72586
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BH648 **KOR GROUP** **HAZNET** **S108211367**
ESE **849 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.008 mi.
44 ft. **Site 3 of 5 in cluster BH**

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002582788
Contact:	JEFF SLOCUM
Telephone:	6265855990
Mailing Name:	Not reported
Mailing Address:	5750 WILSHIRE BLVD STE 500
Mailing City,St,Zip:	LOS ANGELES, CA 90036
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	21.07
Facility County:	Los Angeles

KOR GROUP (Continued) **S108211367**

Year:	2005
Gepaid:	CAC002582788
Contact:	JEFF SLOCUM
Telephone:	6265855990
Mailing Name:	Not reported
Mailing Address:	5750 WILSHIRE BLVD STE 500
Mailing City,St,Zip:	LOS ANGELES, CA 90036
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	261.26
Facility County:	Not reported

Year:	2004
Gepaid:	CAC002582788
Contact:	JEFF SLOCUM
Telephone:	6265855990
Mailing Name:	Not reported
Mailing Address:	5750 WILSHIRE BLVD STE 500
Mailing City,St,Zip:	LOS ANGELES, CA 90036
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	261.26
Facility County:	Not reported

R649 **KURTZ MAX** **EDR Historical Cleaners** **1009189447**
NNW **820 W 8TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.009 mi.
46 ft. **Site 12 of 13 in cluster R**

Relative:
Higher

Actual:
255 ft.

EDR Historical Cleaners:

Name:	KURTZ MAX
Year:	1933
Type:	LAUNDRIES HAND

Name:	KURTZ MAX
Year:	1937
Type:	LAUNDRIES HAND

Name:	KURTZ MAX
Year:	1942
Type:	LAUNDRIES HAND

S650	**R AND M JEWELRY**	**RCRA-SQG**	**1000309636**
ENE	**610 S BROADWAY 804**	**FINDS**	**CAD981443922**
< 1/8	**LOS ANGELES, CA 90014**		
0.009 mi.			
46 ft.	**Site 74 of 79 in cluster S**		

Relative: **Higher**

Actual: **261 ft.**

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	R AND M JEWELRY
Facility address:	610 S BROADWAY 804 LOS ANGELES, CA 90014
EPA ID:	CAD981443922
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RAFI MEZIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No

R AND M JEWELRY (Continued) **1000309636**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/18/1986
Facility name: R AND M JEWELRY
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002708455

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S651
ENE
< 1/8
0.009 mi.
46 ft.

GOLDEN HORN JEWELRY
610 SOUTH BROADWAY 1010
LOS ANGELES, CA 90014

Site 75 of 79 in cluster S

HAZNET **S103666739**
N/A

Relative:
Higher

Actual:
261 ft.

HAZNET:
Year: 1993
Gepaid: CAL000039006
Contact: PHILIP AKSOY ARTUR KUCUKARSLAN
Telephone: 2136295855
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY STE 1010
Mailing City,St,Zip: LOS ANGELES, CA 900141817
Gen County: Los Angeles
TSD EPA ID: CAT000612150
TSD County: Orange
Waste Category: Liquids with cyanides >= 1,000 Mg./L
Disposal Method: Not reported
Tons: .2293
Facility County: Los Angeles

S652 **ENE** **< 1/8** **0.009 mi.** **46 ft.**	**JMC JEWELRY** **610 S BROADWAY 703** **LOS ANGELES, CA 90014** **Site 76 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000120956** **CAD981435803**

Relative:
Higher

Actual:
261 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	JMC JEWELRY
Facility address:	610 S BROADWAY 703 LOS ANGELES, CA 90014
EPA ID:	CAD981435803
Mailing address:	610 S. BROADWAY #SEVENTH HUNDR LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	SAHE VARJABEDIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

JMC JEWELRY (Continued) **1000120956**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/03/1986
Facility name:	JMC JEWELRY
Classification:	Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002704565

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S653 **TASLAKHYAN JEWELRY INC** **RCRA-SQG** **1000276442**
ENE **610 S BROADWAY NO 413** **FINDS** **CAD981169287**
< 1/8 **LOS ANGELES, CA 90014**
0.009 mi.
46 ft. **Site 77 of 79 in cluster S**

Relative:
Higher

Actual:
261 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	TASLAKHYAN JEWELRY INC
Facility address:	610 S BROADWAY NO 413 LOS ANGELES, CA 90014
EPA ID:	CAD981169287
Mailing address:	S BROADWAY NO 413 LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

TASLAKHYAN JEWELRY INC (Continued) **1000276442**

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	TASLAMKYAN JEWELRY
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002680956

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S654 **ENE** **< 1/8** **0.009 mi.** **46 ft.**	**DAVID DESIGN JEWELER** **610 S BROADWAY 424** **LOS ANGELES, CA 90014** **Site 78 of 79 in cluster S**	**RCRA-SQG** **FINDS**	**1000247553** **CAD981432222**

Relative:
Higher

Actual:
261 ft.

RCRA-SQG:

Date form received by agency:	08/08/1986
Facility name:	DAVID DESIGN JEWELER
Facility address:	610 S BROADWAY 424 LOS ANGELES, CA 90014
EPA ID:	CAD981432222
Mailing address:	S BROADWAY 424 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	610 S BROADWAY 424 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-8722
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HRATCH KELECHIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

DAVID DESIGN JEWELER (Continued) **1000247553**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002703263

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

S655 **SANG PARK** **HAZNET** **S103986605**
ENE **610 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.009 mi.
46 ft. **Site 79 of 79 in cluster S**

Relative:
Higher

Actual:
261 ft.

HAZNET:
Year: 1999
Gepaid: CAL000178815
Contact: SANG PARK
Telephone: 2136227090
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900141824
Gen County: Los Angeles
TSD EPA ID: CAL000082530
TSD County: Santa Clara
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0
Facility County: Los Angeles

Year: 1999
Gepaid: CAL000178815
Contact: SANG PARK
Telephone: 2136227090
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900141824
Gen County: Los Angeles
TSD EPA ID: CAL000082530
TSD County: Santa Clara
Waste Category: Unspecified organic liquid mixture
Disposal Method: Not reported
Tons: 0.0041

SANG PARK (Continued) **S103986605**

Facility County: Los Angeles

Year: 1997
Gepaid: CAL000178815
Contact: SANG PARK
Telephone: 2136227090
Mailing Name: Not reported
Mailing Address: 610 S BROADWAY
Mailing City,St,Zip: LOS ANGELES, CA 900141824
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .4378
Facility County: Los Angeles

BD656
ENE
< 1/8
0.009 mi.
49 ft.

AMERICAN TILE BUILDING
719 S LOS ANGELES ST
LOS ANGELES, CA 90015

HAZNET **S106087699**
N/A

Site 15 of 18 in cluster BD

Relative:
Higher

Actual:
257 ft.

HAZNET:
Year: 2002
Gepaid: CAC002553064
Contact: STEVE HIRSCH
Telephone: 2136273754
Mailing Name: Not reported
Mailing Address: 860 S LOS ANGELES ST
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 0.03
Facility County: Not reported

Year: 2002
Gepaid: CAC002553064
Contact: STEVE HIRSCH
Telephone: 2136273754
Mailing Name: Not reported
Mailing Address: 860 S LOS ANGELES ST
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 8.42
Facility County: Not reported

K657 **NE** **< 1/8** **0.009 mi.** **49 ft.**

DANIEL SWARTZ
411 W 5TH ST APT 560
LOS ANGELES, CA 90013

HAZNET **S109927424** **N/A**

Site 16 of 18 in cluster K

Relative: Higher

Actual: 274 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002626032
Contact:	SCOTT TRAYLOR
Telephone:	2136179500
Mailing Name:	Not reported
Mailing Address:	411 W 5TH ST APT 560
Mailing City,St,Zip:	LOS ANGELES, CA 900132049
Gen County:	Los Angeles
TSD EPA ID:	CAD068504881
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.3
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002626032
Contact:	SCOTT TRAYLOR
Telephone:	2136179500
Mailing Name:	Not reported
Mailing Address:	411 W 5TH ST APT 560
Mailing City,St,Zip:	LOS ANGELES, CA 900132049
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.375
Facility County:	Los Angeles

K658 **NE** **< 1/8** **0.009 mi.** **49 ft.**

METRO RAIL SCRTD
411 W 5TH ST
LOS ANGELES, CA 90013

CA FID UST **SWEEPS UST** **S101583765** **N/A**

Site 17 of 18 in cluster K

Relative: Higher

Actual: 274 ft.

CA FID UST:

Facility ID:	19006017
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	411 W 5TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported

METRO RAIL SCRTD (Continued) **S101583765**

EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 7148
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

K659 **NE** **< 1/8** **0.009 mi.** **49 ft.**	**LA OPINION** **411 W FIFTH STREET 12TH FLOOR** **LOS ANGELES, CA 90013** **Site 18 of 18 in cluster K**	**HAZNET**	**S105724933** **N/A**

Relative: **Higher**

Actual: **274 ft.**

HAZNET:
Year: 2003
Gepaid: CAL000219009
Contact: M DARMODY, ENVT'L & SFTY MGR
Telephone: 2138962201
Mailing Name: BILL MUMAW/DIRECTOR OF OPERATI
Mailing Address: 411 W FIFTH STREET 12TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.2
Facility County: Los Angeles

Year: 2002
Gepaid: CAL000219009
Contact: BILL MUMAW
Telephone: 2138962242
Mailing Name: Not reported
Mailing Address: 411 W FIFTH STREET 12TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.25

LA OPINION (Continued) **S105724933**

Facility County: Not reported

Year: 2001
Gepaid: CAL000219009
Contact: BILL MUMAW
Telephone: 2138962242
Mailing Name: Not reported
Mailing Address: 411 W FIFTH STREET 12TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Fresno
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.62
Facility County: Not reported

AM660
East
< 1/8
0.010 mi.
53 ft.

ADAMS PRESS
830 S BROADWAY ST
LOS ANGELES, CA 90014

RCRA-SQG **1000303235**
FINDS **CAD982512352**
HAZNET

Site 4 of 5 in cluster AM

Relative:
Lower

Actual:
253 ft.

RCRA-SQG:
Date form received by agency: 05/23/1988
Facility name: ADAMS PRESS
Facility address: 830 S BROADWAY ST
LOS ANGELES, CA 90014
EPA ID: CAD982512352
Contact: ENVIRONMENTAL MANAGER
Contact address: 830 S BROADWAY ST
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 627-2151
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: County
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: STEVE MARIENHOFF
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999

ADAMS PRESS (Continued) **1000303235**

Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	County
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002837958

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	2000
Gepaid:	CAD982512352
Contact:	STEVE MARIENHOFF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	830 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	TND000772186
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Transfer Station

ADAMS PRESS (Continued) **1000303235**

Tons:	.0275
Facility County:	Los Angeles
Year:	1998
Gepaid:	CAD982512352
Contact:	STEVE MARIENHOFF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	830 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.3752
Facility County:	Los Angeles
Year:	1997
Gepaid:	CAD982512352
Contact:	STEVE MARIENHOFF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	830 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1626
Facility County:	Los Angeles
Year:	1996
Gepaid:	CAD982512352
Contact:	STEVE MARIENHOFF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	830 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.3752
Facility County:	Los Angeles
Year:	1995
Gepaid:	CAD982512352
Contact:	STEVE MARIENHOFF
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	830 S BROADWAY
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858

ADAMS PRESS (Continued) **1000303235**

TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.3461
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

BH661 **BLOCH INC** **HAZNET** **S105085999**
ESE **846 S BROADWAY 11TH FL** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.010 mi.
54 ft. **Site 4 of 5 in cluster BH**

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002426991
Contact:	DON FREEMAN
Telephone:	2136265321
Mailing Name:	Not reported
Mailing Address:	819 SANTEE ST MEZZANINE FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	3.96
Facility County:	Not reported

Year:	2002
Gepaid:	CAC002426991
Contact:	DON FREEMAN
Telephone:	2136265321
Mailing Name:	Not reported
Mailing Address:	819 SANTEE ST MEZZANINE FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.30
Facility County:	Not reported

Year:	2000
Gepaid:	CAC002271481
Contact:	BLOCH INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	846 S BROADWAY 11TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station

BLOCH INC (Continued) **S105085999**

Tons:	.0400
Facility County:	Los Angeles
Year:	2000
Gepaid:	CAC002271481
Contact:	BLOCH INC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	846 S BROADWAY 11TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	Los Angeles

BH662 **ESE** **< 1/8** **0.010 mi.** **55 ft.**

ANJAC FASHION BUILDINGS
850 S BROADWAY
LOS ANGELES, CA 90014

HAZNET **S103674248** **N/A**

Site 5 of 5 in cluster BH

Relative: Lower

Actual: 252 ft.

HAZNET:

Year:	1997
Gepaid:	CAC000736408
Contact:	ANJAC FASHION BUILDINGS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	819 SANTEE
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	10.4250
Facility County:	Los Angeles

AC663 **NE** **< 1/8** **0.011 mi.** **57 ft.**

S.A. CASTING, SIMON MEKHARIAN
412 WEST 6 ST, SUITE 922
LOS ANGELES, CA 90014

EMI **S106838664** **N/A**

Site 40 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56154
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

S.A. CASTING, SIMON MEKHARIAN (Continued) **S106838664**

Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

AC664 **GRIGOR SIRKEDZHYAN** **HAZNET** **S103966775**
NE **412 WEST 6TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 41 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:
Year: 1997
Gepaid: CAL000115963
Contact: GRIGOR SIRKEDZHYAN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST STE 1310
Mailing City,St,Zip: LOS ANGELES, CA 900141412
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: .0208
Facility County: Los Angeles

AC665 **RAMON MORENO JEWELRY** **HAZNET** **S103983586**
NE **412 WEST 6TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 42 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:
Year: 1995
Gepaid: CAL000116762
Contact: RAMON MORENO
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 412 WEST 6TH STREET
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD982446866
TSD County: Solano
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Tons: .9382
Facility County: Los Angeles

AC666 **NE** **< 1/8** **0.011 mi.** **57 ft.**

LENCO JEWELRY INC
412 W. 6TH STREET
LOS ANGELES, CA 90014

EMI **S106834458** **N/A**

Site 43 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56286
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56286
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC667 **NE** **< 1/8** **0.011 mi.** **57 ft.**

E AND A JEWELRY
412 W 6TH ST SUITE 319
LOS ANGELES, CA 90014

HAZNET **S103658218** **N/A**

Site 44 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1994
Gepaid:	CAL000025987
Contact:	ARTIN M CIROGLU
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 319
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD981685472
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Not reported

E AND A JEWELRY (Continued) **S103658218**

Tons: .0625
Facility County: Los Angeles

AC668 **GIVANICH JEWELRY MFG INC** **HAZNET** **S105723055**
NE **412 W 6TH ST SUITE 1021** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 45 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:
Year: 2001
Gepaid: CAL000125672
Contact: SAMVEL HARUTUNIAN PRESIDENT
Telephone: --
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST STE 1021
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Not reported
Tons: 0.22
Facility County: Not reported

AC669 **SARKES JEWELRY** **RCRA-SQG** **1000269742**
NE **412 W 6TH ST SUITE 325** **FINDS** **CAD982026460**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 46 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:
Date form received by agency: 08/21/1987
Facility name: SARKES JEWELRY
Facility address: 412 W 6TH ST SUITE 325
LOS ANGELES, CA 90014
EPA ID: CAD982026460
Contact: ENVIRONMENTAL MANAGER
Contact address: 412 W 6TH ST SUITE 325
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 620-2380
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: SARKES H KRIKOR
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported

SARKES JEWELRY (Continued) **1000269742**

Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009542566

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC670	**HOVSEP YACOUBIAN**	**CA FID UST**	**S101583902**
NE	**412 W 6TH ST**	**SWEEPS UST**	**N/A**
< 1/8	**LOS ANGELES, CA 90014**	**EMI**	
0.011 mi.			
57 ft.	**Site 47 of 73 in cluster AC**		

Relative:
Higher

Actual:
267 ft.

CA FID UST:

Facility ID:	19007189
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	412 W 6TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	5210
Number:	2
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	18613
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0

HOVSEP YACOUBIAN (Continued) **S101583902**

Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	18613
Air District Name:	SC
SIC Code:	6531
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC671 **GREGORY & SONS** **EMI** **S106832067**
NE **412 W 6TH ST #609** **N/A**
< 1/8 **LOS ANGELES, CA, CA 90014**
0.011 mi.
57 ft. **Site 48 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56253
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC672 **PARK CENTRAL BUILDING** **RCRA-SQG** **1000596822**
NE **412 W 6TH ST** **FINDS** **CAD983608027**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
0.011 mi. **ENVIROSTOR**
57 ft. **Site 49 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	PARK CENTRAL BUILDING
Facility address:	412 W 6TH ST LOS ANGELES, CA 90014
EPA ID:	CAD983608027

PARK CENTRAL BUILDING (Continued) **1000596822**

Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	WILLIAM BLOOMFIELD
Owner/operator address:	412 W 6TH ST
	LOS ANGELES, CA 90014
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 627-3998
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/01/1996
Facility name:	PARK CENTRAL BUILDING
Classification:	Small Quantity Generator

Date form received by agency:	03/30/1994
Facility name:	PARK CENTRAL BUILDING
Classification:	Large Quantity Generator

Date form received by agency:	10/18/1991
Facility name:	PARK CENTRAL BUILDING
Classification:	Large Quantity Generator

PARK CENTRAL BUILDING (Continued) **1000596822**

Facility Has Received Notices of Violations:

Regulation violated:	Not reported
Area of violation:	Formal Enforcement Agreement or Order
Date violation determined:	03/08/2000
Date achieved compliance:	10/01/2004
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	08/10/2004
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	Not reported
Area of violation:	Formal Enforcement Agreement or Order
Date violation determined:	03/08/2000
Date achieved compliance:	10/01/2004
Violation lead agency:	State
Enforcement action:	FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date:	10/01/2004
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	Not reported
Area of violation:	Generators - General
Date violation determined:	03/08/2000
Date achieved compliance:	10/01/2004
Violation lead agency:	State
Enforcement action:	WRITTEN INFORMAL
Enforcement action date:	06/19/2001
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

Regulation violated:	Not reported
Area of violation:	Generators - General
Date violation determined:	03/08/2000
Date achieved compliance:	10/01/2004
Violation lead agency:	State
Enforcement action:	INITIAL 3008(A) COMPLIANCE
Enforcement action date:	08/10/2004
Enf. disposition status:	Not reported
Enf. disp. status date:	Not reported
Enforcement lead agency:	State
Proposed penalty amount:	Not reported
Final penalty amount:	Not reported
Paid penalty amount:	Not reported

PARK CENTRAL BUILDING (Continued) **1000596822**

Regulation violated: Not reported
Area of violation: Formal Enforcement Agreement or Order
Date violation determined: 03/08/2000
Date achieved compliance: 10/01/2004
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/19/2001
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 03/08/2000
Date achieved compliance: 10/01/2004
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 10/01/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.10-12.A
Area of violation: Generators - General
Date violation determined: 03/09/1994
Date achieved compliance: 03/09/1999
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 10/01/2004
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/08/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 10/01/2004
Evaluation lead agency: State

Evaluation date: 03/08/2000
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

PARK CENTRAL BUILDING (Continued) **1000596822**

Area of violation:	Formal Enforcement Agreement or Order
Date achieved compliance:	10/01/2004
Evaluation lead agency:	State
Evaluation date:	03/08/2000
Evaluation:	SIGNIFICANT NON-COMPLIER
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	03/09/1994
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - General
Date achieved compliance:	03/09/1999
Evaluation lead agency:	State Contractor/Grantee

FINDS:

Registry ID: 110009548891

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	2008
Gepaid:	CAD983608027
Contact:	LUPE LYNN MARTINEZ
Telephone:	2136273996
Mailing Name:	Not reported
Mailing Address:	412 WEST 6TH ST #1314
Mailing City,St,Zip:	LOS ANGELES, CA 900141403
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.42
Facility County:	Los Angeles
Year:	2008
Gepaid:	CAD983608027
Contact:	LUPE LYNN MARTINEZ
Telephone:	2136273996
Mailing Name:	Not reported
Mailing Address:	412 WEST 6TH ST #1314

PARK CENTRAL BUILDING (Continued) **1000596822**

Mailing City,St,Zip: LOS ANGELES, CA 900141403
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.05
Facility County: Los Angeles

Year: 1995
Gepaid: CAD983608027
Contact: CASA LLC DBA PARK CENTRAL BLDG
Telephone: 2136273998
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST #1314
Mailing City,St,Zip: LOS ANGELES, CA 900141403
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Tons: .7500
Facility County: Los Angeles

Year: 1995
Gepaid: CAD983608027
Contact: CASA LLC DBA PARK CENTRAL BLDG
Telephone: 2136273998
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST #1314
Mailing City,St,Zip: LOS ANGELES, CA 900141403
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Not reported
Tons: .7500
Facility County: Los Angeles

Year: 1994
Gepaid: CAD983608027
Contact: CASA LLC DBA PARK CENTRAL BLDG
Telephone: 2136273998
Mailing Name: Not reported
Mailing Address: 412 W 6TH ST #1314
Mailing City,St,Zip: LOS ANGELES, CA 900141403
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 1.5000
Facility County: Los Angeles

PARK CENTRAL BUILDING (Continued) **1000596822**

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

ENVIROSTOR:

Site Type:	Tiered Permit
Site Type Detailed:	Tiered Permit
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Not reported
Division Branch:	Cleanup Chatsworth
Facility ID:	71003138
Site Code:	Not reported
Assembly:	Not reported
Senate:	Not reported
Special Program:	Not reported
Status:	Refer: Other Agency
Status Date:	Not reported
Restricted Use:	NO
Site Mgmt. Req.:	NONE SPECIFIED
Funding:	Not reported
Latitude:	0
Longitude:	0
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CAD983608027
Alias Type:	EPA Identification Number
Alias Name:	71003138
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	Not reported
Completed Sub Area Name:	Not reported
Completed Document Type:	Not reported
Completed Date:	Not reported
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

AC673 **CALIFORNIA LATIN JEWELERS** **RCRA-SQG** **1000252238**
NE **412 WEST SIXTH ST ROOM 316** **FINDS** **CAD981569122**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 50 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	08/26/1986
Facility name:	CALIFORNIA LATIN JEWELERS
Facility address:	412 WEST SIXTH ST ROOM 316 LOS ANGELES, CA 90014
EPA ID:	CAD981569122
Mailing address:	WEST SIXTH ST ROOM 316 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	412 WEST SIXTH ST ROOM 316 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(415) 555-1212
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RUBEN PEREZ
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

CALIFORNIA LATIN JEWELERS (Continued) **1000252238**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002717070

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC674 **TOYO PEARL CO INC** **RCRA-SQG** **1000326461**
NE **412 W 6TH ST SUITE 421** **FINDS** **CAD981389810**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 51 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	TOYO PEARL CO INC
Facility address:	412 W 6TH ST SUITE 421 LOS ANGELES, CA 90014
EPA ID:	CAD981389810
Mailing address:	412 W SIXTH ST, STE 421 LOS ANGELES, CA 90014
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PARK CENTRAL BLDG
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

TOYO PEARL CO INC (Continued) **1000326461**

Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/20/1986
Facility name: TOYO PEARL CO INC
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002691098

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC675 JMT JEWELRY LTD **HAZNET** **S104577567**
NE 412 WEST 6TH STREET **N/A**
< 1/8 LOS ANGELES, CA 90014
0.011 mi.
57 ft. Site 52 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1999
Gepaid:	CAL000091810
Contact:	HAGOP TERZIAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1222
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD980695332
TSD County:	99
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	0.25
Facility County:	Los Angeles

AC676 TOYO PEARL CO INC **HAZNET** **S103658217**
NE 412 W 6TH ST STE 1418 **N/A**
< 1/8 LOS ANGELES, CA 90014
0.011 mi.
57 ft. Site 53 of 73 in cluster AC

Relative: Higher

Actual: 267 ft.

HAZNET:

Year:	1997
Gepaid:	CAD981389810
Contact:	JIM ARAKAKI
Telephone:	2136234038
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1418
Mailing City,St,Zip:	LOS ANGELES, CA 900141417
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles
Year:	1995
Gepaid:	CAD981389810
Contact:	JIM ARAKAKI
Telephone:	2136234038
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1418
Mailing City,St,Zip:	LOS ANGELES, CA 900141417
Gen County:	Los Angeles
TSD EPA ID:	CAT000512150
TSD County:	0
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Not reported
Tons:	.2293
Facility County:	Los Angeles
Year:	1995

TOYO PEARL CO INC (Continued) **S103658217**

Gepaid:	CAD981389810
Contact:	JIM ARAKAKI
Telephone:	2136234038
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1418
Mailing City,St,Zip:	LOS ANGELES, CA 900141417
Gen County:	Los Angeles
TSD EPA ID:	CAT000512150
TSD County:	0
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAD981389810
Contact:	JIM ARAKAKI
Telephone:	2136234038
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1418
Mailing City,St,Zip:	LOS ANGELES, CA 900141417
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAD981389810
Contact:	JIM ARAKAKI
Telephone:	2136234038
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1418
Mailing City,St,Zip:	LOS ANGELES, CA 900141417
Gen County:	Los Angeles
TSD EPA ID:	CAT000512150
TSD County:	0
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.6879
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

AC677 **CHAIN & CHARM CO** **EMI** **S106828351**
NE **412 W 6TH ST. (SUITE 1104)** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 54 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56186

CHAIN & CHARM CO (Continued) **S106828351**

Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC678 **NE** **< 1/8** **0.011 mi.** **57 ft.**	**BALLERINA JEWELERS** **412 W 6TH ST #1320** **LOS ANGELES, CA 90014** **Site 55 of 73 in cluster AC**	**RCRA-SQG** **FINDS**	**1000281114** **CAD981385107**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:

Date form received by agency:	02/10/1986
Facility name:	BALLERINA JEWELERS
Facility address:	412 W 6TH ST #1320 LOS ANGELES, CA 90014
EPA ID:	CAD981385107
Mailing address:	W SIXTH ST #1320 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	412 W SIXTH ST #1320 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-4046
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	W A BLOOMFIELD
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212

BALLERINA JEWELERS (Continued) **1000281114**

Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002688921

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC679
NE
< 1/8
0.011 mi.
57 ft.

LENCO JEWELRY, INC
412 W 6TH ST
LOS ANGELES, CA 90014

Site 56 of 73 in cluster AC

RCRA-NonGen **1000176894**
FINDS **CAD981392228**

Relative:
Higher

Actual:
267 ft.

RCRA-NonGen:

Date form received by agency:	02/25/1986
Facility name:	LENCO JEWELRY, INC
Facility address:	412 W 6TH ST LOS ANGELES, CA 90014
EPA ID:	CAD981392228
Mailing address:	W 6TH ST LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	412 W 6TH ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 624-6711
Contact email:	Not reported
EPA Region:	09

LENCO JEWELRY, INC (Continued) **1000176894**

Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: AL LIEBERMAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009535351

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC680
NE
< 1/8
0.011 mi.
57 ft.

CAL-MART PLATING COMPANY
412 WEST 6TH ST STE 1404
LOS ANGELES, CA 90014

HAZNET **S108743710** **N/A**

Site 57 of 73 in cluster AC

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	2006
Gepaid:	CAL000284429
Contact:	KENNY VOGEL
Telephone:	2136236987
Mailing Name:	Not reported
Mailing Address:	412 WEST 6TH ST STE 1404
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	AZT050010685
TSD County:	99
Waste Category:	Aqueous solution (2 < pH < 12.5) containing reactive anions ...
Disposal Method:	Not reported
Tons:	0.08
Facility County:	Los Angeles

AC681
NE
< 1/8
0.011 mi.
57 ft.

UNIVERSAL JEWELERS, ALEJANDRO
412 W 6TH ST., NO. 803
LOS ANGELES, CA 90014

EMI **S106841763** **N/A**

Site 58 of 73 in cluster AC

Relative: **Higher**

Actual: **267 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56255
Air District Name:	SC
SIC Code:	9999
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56255
Air District Name:	SC
SIC Code:	3911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0

UNIVERSAL JEWELERS, ALEJANDRO (Continued) **S106841763**

Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

AC682 **K & A FINE JEWELRY** **EMI** **S106833635**
NE **412 W 6TH ST SUITE 601** **N/A**
< 1/8 **LOS ANGLES, CA 90014**
0.011 mi.
57 ft. **Site 59 of 73 in cluster AC**

Relative: **Higher**

Actual: **267 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56257
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC683 **DAVID H FELL & CO, INC** **RCRA-SQG** **1000247595**
NE **412 W 6TH ST #909** **FINDS** **CAD981379233**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 60 of 73 in cluster AC**

Relative: **Higher**

Actual: **267 ft.**

RCRA-SQG:

Date form received by agency:	02/04/1986
Facility name:	DAVID H FELL & CO, INC
Facility address:	412 W 6TH ST #909 LOS ANGELES, CA 90014
EPA ID:	CAD981379233
Mailing address:	W 6TH ST #909 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	412 W 6TH ST #909 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-1868
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

DAVID H FELL & CO, INC (Continued) **1000247595**

Owner/Operator Summary:

Owner/operator name:	WM BLUMFIELD
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002686987

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC684 **KOJIAN JEWELERS** **HAZNET** **S103973645**
NE **412 WEST 6TH ST #720E** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 61 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1994
Gepaid:	CAX000208264
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	631 SOUTH HILL
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	0
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAX000208264
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	631 SOUTH HILL
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD981685472
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	.0792
Facility County:	Los Angeles

AC685 **CHAIN & CHARM** **HAZNET** **S103658216**
NE **412 W 6TH ST RM 1104** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 62 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1994
Gepaid:	CAD982031858
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1104
Mailing City,St,Zip:	LOS ANGELES, CA 900141410
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

AC686 **R & G BLACK ONYX FINE JEW** **HAZNET** **S109430575**
NE **412 W 6TH ST STE 701** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 63 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000270042
Contact:	MARINE BEZIRDZHYAN
Telephone:	3236270950
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 701
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons:	Not reported
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000270042
Contact:	MARINE BEZIRDZHYAN
Telephone:	3236270950
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 701
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Not reported
Tons:	1.62
Facility County:	Los Angeles

AC687 **HYE-TECH GOLD CO** **HAZNET** **S100941893**
NE **412 W 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 64 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000138018
Contact:	MAURICIO GIL HERNANDEZ
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 502
Mailing City,St,Zip:	LOS ANGELES, CA 900141415
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.2750
Facility County:	Los Angeles

AC688 **CHMIRS** **S100196599**
NE **412 W. 6TH ST. ROOM 507** **N/A**
< 1/8 **LOS ANGELES, CA**
0.011 mi.
57 ft. **Site 65 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

CHMIRS:

OES Incident Number: 8907464
OES notification: Not reported
OES Date: Not reported
OES Time: Not reported
Incident Date: 14-AUG-89
Date Completed: **14-AUG-89**
Property Use: 700
Agency Id Number: 19105
Agency Incident Number: 517
Time Notified: 1540
Time Completed: 1930
Surrounding Area: 500
Estimated Temperature: Not reported
Property Management: Not reported
Special Studies 1: Not reported
Special Studies 2: Not reported
Special Studies 3: Not reported
Special Studies 4: Not reported
Special Studies 5: Not reported
Special Studies 6: Not reported
More Than Two Substances Involved?: N
Resp Agncy Personel # Of Decontaminated: 5
Responding Agency Personel # Of Injuries: 0
Responding Agency Personel # Of Fatalities: 0
Others Number Of Decontaminated: 0
Others Number Of Injuries: 5
Others Number Of Fatalities: 0
Vehicle Make/year: Not reported
Vehicle License Number: Not reported
Vehicle State: Not reported
Vehicle Id Number: Not reported
CA/DOT/PUC/ICC Number: Not reported
Company Name: Not reported
Reporting Officer Name/ID: ALFRED W WOBING AW1379 F.S.4B
Report Date: 14-AUG-89
Comments: Not reported
Facility Telephone: 213 485-7480
Waterway Involved: Not reported
Waterway: Not reported
Spill Site: Not reported
Cleanup By: Not reported
Containment: Not reported
What Happened: Not reported
Type: Not reported
Measure: Not reported
Other: Not reported
Date/Time: Not reported
Year: 88-92
Agency: Not reported
Incident Date: Not reported
Admin Agency: Not reported
Amount: Not reported

(Continued) **S100196599**

Contained:	Not reported
Site Type:	Not reported
E Date:	17-MAY-90
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

AC689 **PRINCESS JEWELERS, TROY T APRA** **EMI** **S106837704**
NE **412 W 6TH ST #418-419** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 66 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56274
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56274
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

PRINCESS JEWELERS, TROY T APRA (Continued) **S106837704**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC690
NE
< 1/8
0.011 mi.
57 ft.

SAM PALEY JEWELERS INC **EMI** **S106838753**
412 W 6TH SUITE 1121 **N/A**
LOS ANGELES, CA 90014

Site 67 of 73 in cluster AC

Relative:
Higher

Actual:
267 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56096
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56096
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

AC691 **NE** **< 1/8** **0.011 mi.** **57 ft.**

JEWEL 2000
412 W 6TH ST STE 1416
LOS ANGELES, CA 90014

HAZNET **S108210197** **N/A**

Site 68 of 73 in cluster AC

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	2005
Gepaid:	CAL000183660
Contact:	JACK GRISHIKYAN- MGR
Telephone:	2106295111
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 1416
Mailing City,St,Zip:	LOS ANGELES, CA 900141403
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Treatment, Tank
Tons:	10.84
Facility County:	Not reported

AC692 **NE** **< 1/8** **0.011 mi.** **57 ft.**

A & S JEWELRY
412 W 6TH ST #204
LOS ANGELES, CA 90014

RCRA-SQG **FINDS** **1000130704** **CAD982346686**

Site 69 of 73 in cluster AC

Relative: **Higher**

Actual: **267 ft.**

RCRA-SQG:

Date form received by agency:	01/29/1988
Facility name:	A & S JEWELRY
Facility address:	412 W 6TH ST #204 LOS ANGELES, CA 90014
EPA ID:	CAD982346686
Mailing address:	W 6TH ST #204 LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	412 W 6TH ST #204 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-2692
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	AZAT SULTANOGLU
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported

A & S JEWELRY (Continued) **1000130704**

Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002797670

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC693 **K&A FINE JEWELRY** **RCRA-SQG** **1000114160**
NE **412 W 6TH ST #601** **FINDS** **CAD981975907**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 70 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

RCRA-SQG:
Date form received by agency: 04/30/1987
Facility name: K&A FINE JEWELRY
Facility address: 412 W 6TH ST #601
LOS ANGELES, CA 90014
EPA ID: CAD981975907
Mailing address: W 6TH ST #601
LOS ANGELES, CA 90014

K&A FINE JEWELRY (Continued) **1000114160**

Contact: ENVIRONMENTAL MANAGER
Contact address: 412 W 6TH ST #601
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: (213) 629-0798
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: HAGOP KOJOGLANIAN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002761912

K&A FINE JEWELRY (Continued) **1000114160**

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

AC694 **CHMIRS** **S105660024**
NE **BEHIND 412 W. 6 TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.011 mi.
57 ft. **Site 71 of 73 in cluster AC**

Relative: Higher

Actual: 267 ft.

CHMIRS:

OES Incident Number:	99-3800
OES notification:	9/9/199909:33:39 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Co. Health
Containment:	Not reported

(Continued) **S105660024**

What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1999
Agency:	Los Angeles FD
Incident Date:	9/9/199912:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	unk
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	1
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Illegally dumped into dumpster / near jewelry mart. Released a cloud, reacted with other products in trash. LA PD HazMat cleaned it up.

AC695	**UNITED LA JEWELERS**	**HAZNET**	**S103993262**
NE	**412 W 6TH ST #608**		**N/A**
< 1/8	**LOS ANGELES, CA 90014**		
0.011 mi.			
57 ft.	**Site 72 of 73 in cluster AC**		

Relative: **Higher**

Actual: **267 ft.**

HAZNET:

Year:	1996
Gepaid:	CAL000162540
Contact:	JESUS PUGA & MARIA E. ASCENCIO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	412 W 6TH ST STE 608
Mailing City,St,Zip:	LOS ANGELES, CA 900141413
Gen County:	Los Angeles
TSD EPA ID:	CAD980887418
TSD County:	1
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.8131
Facility County:	Los Angeles

AC696 **ENRIQUE RUIZ JEWELRY REPAIR** **EMI** **S106830697**
NE **412 W 6TH STREET SUITE 416** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.011 mi.
57 ft. **Site 73 of 73 in cluster AC**

Relative:
Higher

Actual:
267 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56287
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	56287
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BA697 **BERNSTEIN P H** **EDR Historical Cleaners** **1009191063**
SE **904 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.011 mi.
57 ft. **Site 2 of 4 in cluster BA**

Relative:
Lower

Actual:
251 ft.

EDR Historical Cleaners:

Name:	BERNSTEIN P H
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

U698 **PARAMOUNT CORPORATION** **CA FID UST** **S101587991**
NNE **640 S GRAND AVE** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.011 mi.
60 ft. **Site 21 of 21 in cluster U**

Relative: Higher

Actual: 269 ft.

CA FID UST:

Facility ID:	19056223
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	640 S GRAND AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6427
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BA699 **GRANTS PARKING GARAGE** **HAZNET** **S102799676**
SE **220 W 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.012 mi.
64 ft. **Site 3 of 4 in cluster BA**

Relative: Lower

Actual: 251 ft.

HAZNET:

Year:	1994
Gepaid:	CAC000956592
Contact:	BOB TEMPLETON
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1931 EL SERENO DR
Mailing City,St,Zip:	ARCADIA, CA 910070000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352

GRANTS PARKING GARAGE (Continued) **S102799676**

TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: .8340
Facility County: Los Angeles

R700
NNW
< 1/8
0.013 mi.
68 ft.

FISHER I I
828 W 8TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009192560** **N/A**

Site 13 of 13 in cluster R

Relative: Lower

Actual: 254 ft.

EDR Historical Cleaners:
Name: FISHER I I
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

AX701
WNW
< 1/8
0.013 mi.
68 ft.

LOS ANGELES CAR WASH CORP
811 W OLYMPIC BLVD
LOS ANGELES, CA 90015

HAZNET **S103975301** **N/A**

Site 10 of 14 in cluster AX

Relative: Lower

Actual: 249 ft.

HAZNET:
Year: 1998
Gepaid: CAL923033942
Contact: LOS ANGELES CAR WASH CORP
Telephone: 2136291273
Mailing Name: Not reported
Mailing Address: 811 W OLYMPIC BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900151325
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Tank bottom waste
Disposal Method: Recycler
Tons: 2.7105
Facility County: Los Angeles

AX702
WNW
< 1/8
0.013 mi.
68 ft.

DOWNTOWN CAR WASH (CHEVRON)
811 W OLYMPIC BLVD
LOS ANGELES, CA 90015

UST **U001560609**
HIST UST **N/A**
HAZNET

Site 11 of 14 in cluster AX

Relative: Lower

Actual: 249 ft.

UST:
Facility ID: 23742
Latitude: 34.04506
Longitude: -118.26422

HIST UST:
Region: STATE
Facility ID: 00000005038
Facility Type: Gas Station

DOWNTOWN CAR WASH (CHEVRON) (Continued) **U001560609**

Other Type: Not reported
Total Tanks: 0005
Contact Name: GARY DIXON
Telephone: 2136291273
Owner Name: LOS ANGELES CAR WASH CORP
Owner Address: 811 W. OLYMPIC BLVD
Owner City,St,Zip: LOS ANGELES, CA 90015

Tank Num: 001
Container Num: 5
Year Installed: 1979
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 4
Year Installed: 1979
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: 3
Year Installed: 1979
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: #2
Year Installed: 1979
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: #1
Year Installed: 1979
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

HAZNET:
Year: 2010
Gepaid: CAL000300955
Contact: JOSE MAROQUIN, MANAGER

DOWNTOWN CAR WASH (CHEVRON) (Continued) **U001560609**

Telephone:	2136291273
Mailing Name:	Not reported
Mailing Address:	811 W OLYMPIC BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900151325
Gen County:	Not reported
TSD EPA ID:	CAD981696420
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	8.757
Facility County:	Los Angeles

AX703
WNW
< 1/8
0.013 mi.
68 ft.

DOWNTOWN CAR WASH
811 W OLYMPIC BLVD
LOS ANGELES, CA 90015

CA FID UST
SWEEPS UST

S101629309
N/A

Site 12 of 14 in cluster AX

Relative:
Lower

Actual:
249 ft.

CA FID UST:

Facility ID:	19050145
Regulated By:	UTNKA
Regulated ID:	00005038
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136291273
Mail To:	Not reported
Mailing Address:	811 W OLYMPIC BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	485
Number:	1
Board Of Equalization:	44-011224
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000485-000001
Actv Date:	04-20-88
Capacity:	12000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	5

Status:	A

DOWNTOWN CAR WASH (Continued) **S101629309**

Comp Number: 485
Number: 1
Board Of Equalization: 44-011224
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000485-000002
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 485
Number: 1
Board Of Equalization: 44-011224
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000485-000003
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 485
Number: 1
Board Of Equalization: 44-011224
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000485-000004
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 485
Number: 1
Board Of Equalization: 44-011224
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88

DOWNTOWN CAR WASH (Continued) **S101629309**

Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000485-000005
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

AX704 **CHEVRON STATION 9 0518** **RCRA-SQG** **1000857368**
WNW **811 W OLYMPIC BLVD** **FINDS** **CAD983668005**
< 1/8 **LOS ANGELES, CA 90015**
0.013 mi.
68 ft. **Site 13 of 14 in cluster AX**

Relative:
Lower

Actual:
249 ft.

RCRA-SQG:
Date form received by agency: 05/13/1993
Facility name: CHEVRON STATION 9 0518
Facility address: 811 W OLYMPIC BLVD
LOS ANGELES, CA 90015
EPA ID: CAD983668005
Mailing address: W OLYMPIC BLVD
LOS ANGELES, CA 90015
Contact: MONTE PETERSON
Contact address: 811 W OLYMPIC BLVD
LOS ANGELES, CA 90015
Contact country: US
Contact telephone: (213) 629-1273
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: CHEVRON USA PRODUCTS CO
Owner/operator address: PO BOX 2833
LA HABRA, CA 90632
Owner/operator country: Not reported
Owner/operator telephone: (310) 694-7452
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No

CHEVRON STATION 9 0518 (Continued) **1000857368**

Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002898954

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BG705 **PASSINO R A** **EDR Historical Auto Stations** **1009078570**
NE **208 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.014 mi.
76 ft. **Site 2 of 7 in cluster BG**

Relative: Higher

Actual: 407 ft.

EDR Historical Auto Stations:
Name: COWELL HERMAN
Year: 1929
Type: GASOLINE AND OIL SERVICE STATION

Name: COWELL C A
Year: 1933
Type: GASOLINE AND OIL SERVICE STATIONS

Name: PASSINO R A
Year: 1942
Type: GASOLINE AND OIL SERVICE STATIONS

BG706 **LUCAS ANNA MRS** **EDR Historical Cleaners** **1009189894**
NE **203 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.014 mi.
76 ft. **Site 3 of 7 in cluster BG**

Relative: Higher

Actual: 413 ft.

EDR Historical Cleaners:
Name: LUCAS ANNA MRS
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

BI707 **BONE DEEP - HERRALD EXAMINER** **FINDS** **1011917659**
South **1111 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.016 mi.
86 ft. **Site 1 of 6 in cluster BI**

Relative:
Lower

Actual:
244 ft.

FINDS:

Registry ID: 110037378478

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BI708 **LOS ANGELES HERALD EXAMINER** **HIST UST** **U001560616**
South **1111 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.016 mi.
86 ft. **Site 2 of 6 in cluster BI**

Relative:
Lower

Actual:
244 ft.

HIST UST:

Region:	STATE
Facility ID:	00000065237
Facility Type:	Other
Other Type:	NEWSPAPER
Total Tanks:	0002
Contact Name:	RAY WILLIS
Telephone:	2137448219
Owner Name:	THE HEARST CORPORATION
Owner Address:	959 EIGHTH AVENUE
Owner City,St,Zip:	NEW YORK, NY 10019

Tank Num:	001
Container Num:	41993 A
Year Installed:	1948
Tank Capacity:	00006000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	1/4 inches
Leak Detection:	Visual, Stock Inventor, Pressure Test

Tank Num:	002
Container Num:	41993 B
Year Installed:	1948
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	1/4 inches
Leak Detection:	Stock Inventor, Pressure Test

BI709 **South** **< 1/8** **0.016 mi.** **86 ft.**	**HEARST COMMUNICATION INC** **1111 S BROADWAY** **LOS ANGELES, CA 90015** **Site 3 of 6 in cluster BI**	**HAZNET**	**S108748292** **N/A**

Relative: **Lower**

Actual: **244 ft.**

HAZNET:

Year: 2007
Gepaid: CAC002619910
Contact: MARTIN CEPKAUSKAS
Telephone: 4157777354
Mailing Name: Not reported
Mailing Address: 5 3RD ST STE 200
Mailing City,St,Zip: SAN FRANCISCO, CA 941033203
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.15
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002619910
Contact: MARTIN CEPKAUSKAS
Telephone: 4157777354
Mailing Name: Not reported
Mailing Address: 5 3RD ST STE 200
Mailing City,St,Zip: SAN FRANCISCO, CA 941033203
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002619910
Contact: MARTIN CEPKAUSKAS
Telephone: 4157777354
Mailing Name: Not reported
Mailing Address: 5 3RD ST STE 200
Mailing City,St,Zip: SAN FRANCISCO, CA 941033203
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.03
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002605648
Contact: WILL IRVING/SUPERVSR
Telephone: 3238555499
Mailing Name: Not reported

HEARST COMMUNICATION INC (Continued) **S108748292**

Mailing Address:	#5 3RD ST STE 200
Mailing City,St,Zip:	SAN FRANCISCO, CA 94103
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	16.8
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002619910
Contact:	MARTIN CEPKAUSKAS
Telephone:	4157777354
Mailing Name:	Not reported
Mailing Address:	5 3RD ST STE 200
Mailing City,St,Zip:	SAN FRANCISCO, CA 941033203
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.17
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

BI710 **BONE DEEP - HERRALD EXAMINER** **RCRA-NonGen** **1011861571**
South **1111 S BROADWAY** **CAP000194159**
< 1/8 **LOS ANGELES, CA 90015**
0.016 mi.
86 ft. **Site 4 of 6 in cluster BI**

Relative:
Lower

Actual:
244 ft.

RCRA-NonGen:

Date form received by agency:	09/22/2008
Facility name:	BONE DEEP - HERRALD EXAMINER
Facility address:	1111 S BROADWAY LOS ANGELES, CA 90015
EPA ID:	CAP000194159
Mailing address:	10202 W WASHINGTON BLVD COHN 274 CULVER CITY, CA 90232
Contact:	CAROL L REYNOLDS
Contact address:	10202 W WASHINGTON BLVD COHN 274 CULVER CITY, CA 90232
Contact country:	US
Contact telephone:	310-244-8866
Contact email:	CAROL_REYNOLDS@SPE.SONY.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	STAGE 6 FILMS INC SCREEN GEMS
Owner/operator address:	Not reported

BONE DEEP - HERRALD EXAMINER (Continued) **1011861571**

	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	07/21/2008
Owner/Op end date:	Not reported
Owner/operator name:	THE HEARST CORP
Owner/operator address:	NO 5 THIRD ST STE 200 SAN FRANCISCO, CA 94103
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1913
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	07/28/2008
Facility name:	BONE DEEP - HERRALD EXAMINER
Classification:	Small Quantity Generator

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD
Violation Status:	No violations found

BI711
South
< 1/8
0.016 mi.
86 ft.

LOS ANGELES HERALD EXAMINER
1111 S BROADWAY
LOS ANGELES, CA 90015

CA FID UST **S101617170**
SWEEPS UST **N/A**

Site 5 of 6 in cluster BI

Relative:
Lower

Actual:
244 ft.

CA FID UST:

Facility ID:	19039847
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported

LOS ANGELES HERALD EXAMINER (Continued) **S101617170**

SIC Code: Not reported
Facility Phone: 2137448219
Mail To: Not reported
Mailing Address: 1111 S BROADWAY
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900150000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported
Comp Number: 3778
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: 0

BD712	**B O A ARCJOTECTURE**	**LOS ANGELES CO. HMS**	**S102055987**
ENE	**279 W 7TH ST**		**N/A**
< 1/8	**LOS ANGELES, CA**		
0.016 mi.			
87 ft.	**Site 16 of 18 in cluster BD**		

Relative: **Higher**

Actual: **258 ft.**

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 014527-015135
Facility Type: Not reported
Facility Status: OPEN
Area: 2F
Permit Number: Not reported
Permit Status: Not reported

AV713 **West** **< 1/8** **0.018 mi.** **93 ft.**

LA HARBOR COLLEGE
1111 FIGUEROA TER
LOS ANGELES, CA 90012

HAZNET **S109428166** **N/A**

Site 6 of 11 in cluster AV

Relative: **Lower**

Actual: **244 ft.**

HAZNET:

Year:	2007
Gepaid:	CAC002611092
Contact:	LINDA SPINK
Telephone:	2138912000
Mailing Name:	Not reported
Mailing Address:	1111 FIGUEROA TER
Mailing City,St,Zip:	LOS ANGELES, CA 900121210
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.15
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002611092
Contact:	LINDA SPINK
Telephone:	2138912000
Mailing Name:	Not reported
Mailing Address:	1111 FIGUEROA TER
Mailing City,St,Zip:	LOS ANGELES, CA 900121210
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	16
Facility County:	Los Angeles

AV714 **West** **< 1/8** **0.018 mi.** **93 ft.**

CITY OF LOS ANGELES - STAPLES ARENA
1111 FIGUEROA
LOS ANGELES, CA 90015

SLIC **S106387148** **N/A**

Site 7 of 11 in cluster AV

Relative: **Lower**

Actual: **244 ft.**

SLIC REG 4:

Region:	4
Facility Status:	Remediation
SLIC:	0856
Substance:	TPH/VOCs/Metals
Staff:	DY

AV715 **DEMOCRATIC NATIONAL CONVENTION - STAPLES CENTER** **CERCLIS** **1005440840**
West **1111 SOUTH FIGUEROA STREET** **FINDS** **CASFN0905578**
< 1/8 **LOS ANGELES, CA 90015**
0.018 mi.
93 ft. **Site 8 of 11 in cluster AV**

Relative:
Lower

Actual:
244 ft.

CERCLIS:

Site ID:	0905578
EPA ID:	CASFN0905578
Facility County:	LOS ANGELES
Short Name:	DEMOCRATIC CONVENTION
Congressional District:	33
IFMS ID:	09GC
SMSA Number:	Not reported
USGC Hydro Unit:	Not reported
Federal Facility:	Not a Federal Facility
DMNSN Number:	Not reported
Site Orphan Flag:	Not reported
RCRA ID:	Not reported
USGS Quadrangle:	Not reported
Site Init By Prog:	R
NFRAP Flag:	Not reported
Parent ID:	Not reported
RST Code:	Not reported
EPA Region:	09
Classification:	Not reported
Site Settings Code:	Not reported
NPL Status:	Not on the NPL
DMNSN Unit Code:	Not reported
RBRAC Code:	Not reported
RResp Fed Agency Code:	Not reported
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)
Non NPL Status Date:	20020110
Site Fips Code:	06037
CC Concurrence Date:	Not reported
CC Concurrence FY:	Not reported
Alias EPA ID:	Not reported
Site FUDS Flag:	Not reported

CERCLIS Site Contact Name(s):

Contact ID:	9271184.00000
Contact Name:	Karen Jurist
Contact Tel:	(415) 972-3219
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported
Contact ID:	13003854.00000
Contact Name:	Leslie Ramirez
Contact Tel:	(415) 972-3978
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported
Contact ID:	13003858.00000
Contact Name:	Sharon Murray
Contact Tel:	(415) 972-4250
Contact Title:	Site Assessment Manager (SAM)
Contact Email:	Not reported
Contact ID:	13004003.00000

DEMOCRATIC NATIONAL CONVENTION - STAPLES CENTER (Continued) **1005440840**

Contact Name: Carl Brickner
Contact Tel: Not reported
Contact Title: Site Assessment Manager (SAM)
Contact Email: Not reported

Alias Comments: Not reported
Site Description: To track counter-terrorism actions and funding for the Democratic national convention at the Staples Center in LA.

CERCLIS Assessment History:

Action Code: 001
Action: REMOVAL
Date Started: 08/09/2000
Date Completed: 08/18/2000
Priority Level: Cleaned up
Operable Unit: SITEWIDE
Primary Responsibility: EPA Fund-Financed
Planning Status: Not reported
Urgency Indicator: Time Critical
Action Anomaly: Not reported

For detailed financial records, contact EDR for a Site Report.:

Click this hyperlink while viewing on your computer to access
23 additional US CERCLIS Financial: record(s) in the EDR Site Report.

FINDS:

Registry ID: 110013805980

Environmental Interest/Information System
CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) is the Superfund database that is used to support management in all phases of the Superfund program. The system contains information on all aspects of hazardous waste sites, including an inventory of sites, planned and actual site activities, and financial information.

AV716 **STAPLES CENTER** **UST** **U003780575**
West **1111 S FIGUEROA ST** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.018 mi.
93 ft. **Site 9 of 11 in cluster AV**

Relative:
Lower

Actual:
244 ft.

UST:
Facility ID: 24138
Latitude: 34.04343
Longitude: -118.26544

HAZNET:
Year: 2010
Gepaid: CAL000220998
Contact: BILL POTTORFF/SR DIR-ENGR’G
Telephone: 2137427471
Mailing Name: Not reported
Mailing Address: 1111 S FIGUEROA ST #3100

STAPLES CENTER (Continued) **U003780575**

Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.275
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000220998
Contact: BILL POTTORFF/SR DIR-ENGR'G
Telephone: 2137427471
Mailing Name: Not reported
Mailing Address: 1111 S FIGUEROA ST #3100
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.19
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000220998
Contact: BILL POTTORFF/SR DIR-ENGR'G
Telephone: 2137427471
Mailing Name: Not reported
Mailing Address: 1111 S FIGUEROA ST #3100
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Not reported
TSD EPA ID: CAD008302903
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.02
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000220998
Contact: BILL POTTORFF/SR DIR-ENGR'G
Telephone: 2137427471
Mailing Name: Not reported
Mailing Address: 1111 S FIGUEROA ST #3100
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified solvent mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.055
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000220998

STAPLES CENTER (Continued) **U003780575**

Contact:	BILL POTTORFF/SR DIR-ENGR'G
Telephone:	2137427471
Mailing Name:	Not reported
Mailing Address:	1111 S FIGUEROA ST #3100
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Laboratory waste chemicals
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.005
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
25 additional CA_HAZNET: record(s) in the EDR Site Report.

AV717 **CITY OF LOS ANGELES - STAPLES ARENA** **SLIC** **S103975297**
West **1111 S FIGUEROA** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.018 mi.
93 ft. **Site 10 of 11 in cluster AV**

Relative:
Lower

Actual:
244 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	06/01/2005
Global Id:	SL163772345
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.0450144589412
Longitude:	-118.266491889954
Case Type:	Cleanup Program Site
Case Worker:	DY
Local Agency:	Not reported
RB Case Number:	0856
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

HAZNET:

Year:	2004
Gepaid:	CAL000241600
Contact:	SAM KROPP
Telephone:	2137427262
Mailing Name:	Not reported
Mailing Address:	1111 S FIGUEROA ST STE 3100
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	IND000646943
TSD County:	99
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.22

CITY OF LOS ANGELES - STAPLES ARENA (Continued) **S103975297**

Facility County:	Not reported
Year:	2001
Gepaid:	CAL000241600
Contact:	SAM KROPP
Telephone:	2137427262
Mailing Name:	Not reported
Mailing Address:	1111 S FIGUEROA ST STE 3100
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Paint sludge
Disposal Method:	Recycler
Tons:	0.45
Facility County:	Not reported
Year:	1998
Gepaid:	CAC001396152
Contact:	LOS ANGELES ARENA DEVEL CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	865 S FIGUEROA ST STE 2350
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.6255
Facility County:	Los Angeles

G718 **PAPPADOPOOLOS NICHOLAS** **EDR Historical Cleaners** **1009185079**
North **811 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.018 mi.
93 ft. **Site 22 of 25 in cluster G**

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:

Name:	PAPPADOPOOLOS NICHOLAS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

G719 **SIGNAL OIL CO OFFICE** **EDR Historical Auto Stations** **1009084995**
North **811 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.018 mi.
93 ft. **Site 23 of 25 in cluster G**

Relative:
Higher

Actual:
278 ft.

EDR Historical Auto Stations:

Name:	SIGNAL OIL CO OFFICE
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

G720 **BARKER PACIFIC GROUP** **HAZNET** **S103951915**
North **811 W 7TH ST STE 201** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.018 mi.
93 ft. **Site 24 of 25 in cluster G**

Relative:
Higher

Actual:
278 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000140705
Contact:	BARKER PACIFIC GROUP
Telephone:	4154957900
Mailing Name:	Not reported
Mailing Address:	100 FIRST PLAZA STE 2200
Mailing City,St,Zip:	SAN FRANCISCO, CA 941050000
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Recycler
Tons:	.2085
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000140705
Contact:	BARKER PACIFIC GROUP
Telephone:	4154957900
Mailing Name:	Not reported
Mailing Address:	100 FIRST PLAZA STE 2200
Mailing City,St,Zip:	SAN FRANCISCO, CA 941050000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Transfer Station
Tons:	.0417
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000140705
Contact:	BARKER PACIFIC GROUP
Telephone:	4154957900
Mailing Name:	Not reported
Mailing Address:	100 FIRST PLAZA STE 2200
Mailing City,St,Zip:	SAN FRANCISCO, CA 941050000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	.0834
Facility County:	Los Angeles

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

AP721 **SSW** **< 1/8** **0.019 mi.** **100 ft.**

WHITLEY J A
1114 S OLIVE ST
LOS ANGELES, CA

Site 4 of 16 in cluster AP

EDR Historical Auto Stations — **1009082014** **N/A**

Relative: **Lower**
Actual: **246 ft.**

EDR Historical Auto Stations:
Name: WHITLEY J A
Year: 1937
Type: AUTOMOBILE REPAIRING

AP722 **SSW** **< 1/8** **0.019 mi.** **100 ft.**

RISDEN C W
1115 S OLIVE ST
LOS ANGELES, CA

Site 5 of 16 in cluster AP

EDR Historical Auto Stations — **1009078121** **N/A**

Relative: **Lower**
Actual: **246 ft.**

EDR Historical Auto Stations:
Name: RISDEN C W
Year: 1924
Type: AUTOMOBILE REPAIRING

BG723 **NE** **< 1/8** **0.019 mi.** **100 ft.**

HALLNER H F
209 S GRAND AVE
LOS ANGELES, CA

Site 4 of 7 in cluster BG

EDR Historical Cleaners — **1009188777** **N/A**

Relative: **Higher**
Actual: **414 ft.**

EDR Historical Cleaners:
Name: HALLNER H F
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

Name: HALLNER H F
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: HALLNER H F
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

AX724 **WNW** **< 1/8** **0.022 mi.** **116 ft.**

SUE SAM
817 W OLYMPIC BLVD
LOS ANGELES, CA

Site 14 of 14 in cluster AX

EDR Historical Cleaners — **1009190401** **N/A**

Relative: **Lower**
Actual: **249 ft.**

EDR Historical Cleaners:
Name: SUE SAM
Year: 1937
Type: LAUNDRIES CHINESE

H725 **NE** **< 1/8** **0.023 mi.** **119 ft.**	**COURTS AND RECORDS FEDERAL C/U** **255 W 4TH ST** **LOS ANGELES, CA 90017** **Site 13 of 13 in cluster H**	**CA FID UST** **SWEEPS UST**	**S101587943** **N/A**

Relative: **Higher**

Actual: **276 ft.**

CA FID UST:

Facility ID:	19056168
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	0006248407
Mail To:	Not reported
Mailing Address:	255 W 4TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6068
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

BF726 **SSW** **< 1/8** **0.026 mi.** **138 ft.**	**ASSOCIATED PRESS** **1111 S HILL ST** **LOS ANGELES, CA 90015** **Site 2 of 2 in cluster BF**	**RCRA-SQG** **FINDS** **HAZNET**	**1000327991** **CAD982522054**

Relative: **Lower**

Actual: **245 ft.**

RCRA-SQG:

Date form received by agency:	11/27/1989
Facility name:	ASSOCIATED PRESS
Facility address:	1111 S HILL ST LOS ANGELES, CA 90015
EPA ID:	CAD982522054
Contact:	ENVIRONMENTAL MANAGER
Contact address:	1111 S HILL ST LOS ANGELES, CA 90015
Contact country:	US

ASSOCIATED PRESS (Continued) **1000327991**

Contact telephone:	(213) 746-1200
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ASSOCIATED PRESS
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002841051

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of

ASSOCIATED PRESS (Continued) **1000327991**

events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	2004
Gepaid:	CAL000037211
Contact:	ANDY LIPPMAN /CHIEF OF BUREAU
Telephone:	2136262500
Mailing Name:	Not reported
Mailing Address:	221 S FIGUEROA ST #300
Mailing City,St,Zip:	LOS ANGELES, CA 900122552
Gen County:	Los Angeles
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Laboratory waste chemicals
Disposal Method:	Disposal, Other
Tons:	0
Facility County:	Not reported

Year:	2001
Gepaid:	CAL000037211
Contact:	ANDY LIPPMAN /CHIEF OF BUREAU
Telephone:	2136262500
Mailing Name:	Not reported
Mailing Address:	221 S FIGUEROA ST #300
Mailing City,St,Zip:	LOS ANGELES, CA 900122552
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Fresno
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	0.37
Facility County:	Not reported

Year:	2000
Gepaid:	CAL000037211
Contact:	ASSOCIATED PRESS
Telephone:	2126211900
Mailing Name:	Not reported
Mailing Address:	221 S FIGUEROA ST STE 300
Mailing City,St,Zip:	LOS ANGELES, CA 900122552
Gen County:	Los Angeles
TSD EPA ID:	CAD093459485
TSD County:	Fresno
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.4378
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAL000037211
Contact:	ASSOCIATED PRESS
Telephone:	2126211900
Mailing Name:	Not reported

ASSOCIATED PRESS (Continued) **1000327991**

Mailing Address:	221 S FIGUEROA ST STE 300
Mailing City,St,Zip:	LOS ANGELES, CA 900122552
Gen County:	Los Angeles
TSD EPA ID:	CAD050806850
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	.0250
Facility County:	Los Angeles
Year:	2000
Gepaid:	CAL000037211
Contact:	ASSOCIATED PRESS
Telephone:	2126211900
Mailing Name:	Not reported
Mailing Address:	221 S FIGUEROA ST STE 300
Mailing City,St,Zip:	LOS ANGELES, CA 900122552
Gen County:	Los Angeles
TSD EPA ID:	CAD050806850
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
14 additional CA_HAZNET: record(s) in the EDR Site Report.

AP727 **HOFFMAN E H** **EDR Historical Auto Stations** **1009078186**
SSW **1122 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.028 mi.
149 ft. **Site 6 of 16 in cluster AP**

Relative: **Lower**

Actual: **246 ft.**

EDR Historical Auto Stations:

Name:	HOFFMAN E H
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

BI728 **KENDALL F J** **EDR Historical Cleaners** **1009186301**
South **111 W 11TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.029 mi.
154 ft. **Site 6 of 6 in cluster BI**

Relative: **Lower**

Actual: **243 ft.**

EDR Historical Cleaners:

Name:	KENDALL F J
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	STANLEY FARRER
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	FARRER M P
Year:	1937

KENDALL F J (Continued) **1009186301**

Type:	CLOTHES PRESSERS AND CLEANERS

BG729 **THE BROAD** **NPDES** **S111216537**
NE **221 SOUTH GRAND AVENUE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.030 mi.
158 ft. **Site 5 of 7 in cluster BG**

Relative:
Higher

Actual:
415 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	4
Regulatory Measure Id:	415119
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C361079
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/26/2011
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	The Broad Collection
Discharge Address:	10900 Wilshire Blvd
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90049

BE730 **GRANITE CONSTRUCTION COMPANY** **EMI** **S106831995**
NNE **655 SO HOPE ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.030 mi.
161 ft. **Site 13 of 15 in cluster BE**

Relative:
Higher

Actual:
272 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	71771
Air District Name:	SC
SIC Code:	1611
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BE731 **HAMMERSON PROPERTIES** **CA FID UST** **S101586190**
NNE **655 S HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.030 mi.
161 ft. **Site 14 of 15 in cluster BE**

Relative:
Higher

Actual:
272 ft.

CA FID UST:

Facility ID:	19040686
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	655 S HOPE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

BE732 **HAMMERSON PROPERTIES** **UST** **U003780862**
NNE **655 S HOPE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.030 mi.
161 ft. **Site 15 of 15 in cluster BE**

Relative:
Higher

Actual:
272 ft.

UST:

Facility ID:	24433
Latitude:	34.04829
Longitude:	-118.25741

SWEEPS UST:

Status:	A
Comp Number:	6549
Number:	1
Board Of Equalization:	Not reported
Ref Date:	09-22-93
Act Date:	09-22-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

AP733 **KELLEY BROS** **EDR Historical Auto Stations** **1009081040**
SSW **1127 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.033 mi.
173 ft. **Site 7 of 16 in cluster AP**

Relative: Lower

Actual: 246 ft.

EDR Historical Auto Stations:

Name:	KELLEY BROS
Year:	1942
Type:	AUTOMOBILE REPAIRING

AV734 **WING QUONG** **EDR Historical Cleaners** **1009190294**
WSW **1124 S FLOWER ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.033 mi.
174 ft. **Site 11 of 11 in cluster AV**

Relative: Lower

Actual: 245 ft.

EDR Historical Cleaners:

Name:	WING QUONG
Year:	1924
Type:	LAUNDRIES ORIENTAL

J735 **MACY’S CITICORP-209** **HAZNET** **S108750668**
NNW **920 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.033 mi.
176 ft. **Site 14 of 14 in cluster J**

Relative: Higher

Actual: 282 ft.

HAZNET:

Year:	2009
Gepaid:	CAL000312023
Contact:	Macy’s Facility Management
Telephone:	7326315578
Mailing Name:	Not reported
Mailing Address:	755 Route 18 & Rues Lane
Mailing City,St,Zip:	East Brunswick, NJ 08816
Gen County:	Los Angeles
TSD EPA ID:	ARD069748192
TSD County:	99
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.775
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAL000312023
Contact:	Macy’s Facility Management
Telephone:	7326315578
Mailing Name:	Not reported
Mailing Address:	755 Route 18 & Rues Lane
Mailing City,St,Zip:	East Brunswick, NJ 08816
Gen County:	Los Angeles
TSD EPA ID:	TXD055141378
TSD County:	99
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.05
Facility County:	Los Angeles

MACY'S CITICORP-209 (Continued) **S108750668**

Year:	2008
Gepaid:	CAL000312023
Contact:	ROBERTO HERNANDEZ
Telephone:	3232272120
Mailing Name:	Not reported
Mailing Address:	3880 N MISSION RD
Mailing City,St,Zip:	LOS ANGELES, CA 900313138
Gen County:	Los Angeles
TSD EPA ID:	TXD055141378
TSD County:	99
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.15
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000312023
Contact:	ROBERTO HERNANDEZ
Telephone:	3232272120
Mailing Name:	Not reported
Mailing Address:	3880 N MISSION RD
Mailing City,St,Zip:	LOS ANGELES, CA 900313138
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.5
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000312023
Contact:	ROBERTO HERNANDEZ
Telephone:	3232272120
Mailing Name:	Not reported
Mailing Address:	3880 N MISSION RD
Mailing City,St,Zip:	LOS ANGELES, CA 900313138
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.125
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

BG736 **NE** **< 1/8** **0.034 mi.** **178 ft.**	**GRAND PROMENADE** **225 SOUTH GRAND AVENUE** **LOS ANGELES, CA 90012** **Site 6 of 7 in cluster BG**	**NPDES** **ENF**	**S109692587** **N/A**

Relative:
Higher

Actual:
415 ft.

NPDES:

Npdes Number:	CAG994004
Facility Status:	Historical
Agency Id:	17486
Region:	4
Regulatory Measure Id:	193281
Order No:	R4-2003-0111
Regulatory Measure Type:	Enrollee
Place Id:	229130
WDID:	4B196000135
Program Type:	NPDES
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/20/1994
Expiration Date Of Regulatory Measure:	01/01/2010
Termination Date Of Regulatory Measure:	08/26/2009
Discharge Name:	G & K Management Co., Inc.
Discharge Address:	5150 Overland Avenue
Discharge City:	Culver City
Discharge State:	CA
Discharge Zip:	90230

ENF:

Region:	4
Facility Id:	229130
Agency Name:	G & K Management Co., Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0573479
Place Longitude:	-118.24747
SIC Code 1:	6513
SIC Desc 1:	Operators of Apartment Buildings
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.11
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported

GRAND PROMENADE (Continued) **S109692587**

Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000135
Reg Measure Id:	193281
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	09/17/2009
Effective Date:	06/20/1994
Expiration/Review Date:	01/01/2010
Termination Date:	08/26/2009
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	62 - Treatment system to meet priority pollutant limit Category 1
Direction/Voice:	Passive
Enforcement Id(EID):	357941
Region:	4
Order / Resolution Number:	SWB-2008-4-0044
Enforcement Action Type:	Expedited Payment Letter
Effective Date:	12/09/2008
Adoption/Issuance Date:	12/09/2008
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Active
Title:	Expedited Payment Letter for G & K Management Co., Inc.
Description:	Mandatory Minimum Penalty Amount Owed for Effluent Violations(19 Serious Violations + 4 Chronic Violations) $3,000 = $69,000 to the Cleanup & Abatement Account. Mandatory Minimum Penalty Amount Owed for Reporting Violations (23 Late Reporting Violations + 0 Deficient Reporting Violations) $3,000 = $69,000 to the Waste Discharge Permit Fund.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0

GRAND PROMENADE (Continued) **S109692587**

Total $ Paid/Completed Amount:	0
Region:	4
Facility Id:	229130
Agency Name:	G & K Management Co., Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0573479
Place Longitude:	-118.24747
SIC Code 1:	6513
SIC Desc 1:	Operators of Apartment Buildings
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.11
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000135
Reg Measure Id:	193281
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	09/17/2009
Effective Date:	06/20/1994
Expiration/Review Date:	01/01/2010
Termination Date:	08/26/2009
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported

GRAND PROMENADE (Continued) **S109692587**

WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	62 - Treatment system to meet priority pollutant limit Category 1
Direction/Voice:	Passive
Enforcement Id(EID):	253708
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	05/18/2004
Adoption/Issuance Date:	05/18/2004
Achieve Date:	Not reported
Termination Date:	06/18/2004
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV - G & K Management, Grand Promenade (05/18/04)
Description:	NOV sent 5/18/04 for overdue 2003 annual report.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4
Facility Id:	229130
Agency Name:	G & K Management Co., Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0573479
Place Longitude:	-118.24747
SIC Code 1:	6513
SIC Desc 1:	Operators of Apartment Buildings
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.11
Threat To Water Quality:	3
Complexity:	C

GRAND PROMENADE (Continued) **S109692587**

Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000135
Reg Measure Id:	193281
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	09/17/2009
Effective Date:	06/20/1994
Expiration/Review Date:	01/01/2010
Termination Date:	08/26/2009
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	62 - Treatment system to meet priority pollutant limit Category 1
Direction/Voice:	Passive
Enforcement Id(EID):	239979
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	11/20/2001
Adoption/Issuance Date:	11/20/2001
Achieve Date:	Not reported
Termination Date:	03/20/2002
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV - G & K Management, Grand Promenade (11/20/01)
Description:	Notice of Violation sent 11/20/01 for permit effluent violation & reporting deficiencies.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0

GRAND PROMENADE (Continued) **S109692587**

Total $ Paid/Completed Amount:	0
Region:	4
Facility Id:	229130
Agency Name:	G & K Management Co., Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0573479
Place Longitude:	-118.24747
SIC Code 1:	6513
SIC Desc 1:	Operators of Apartment Buildings
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.11
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000135
Reg Measure Id:	193281
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	09/17/2009
Effective Date:	06/20/1994
Expiration/Review Date:	01/01/2010
Termination Date:	08/26/2009
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported

GRAND PROMENADE (Continued) **S109692587**

WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	62 - Treatment system to meet priority pollutant limit Category 1
Direction/Voice:	Passive
Enforcement Id(EID):	241096
Region:	4
Order / Resolution Number:	R4-2002-0036
Enforcement Action Type:	Admin Civil Liability
Effective Date:	03/20/2002
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	04/10/2002
ACL Issuance Date:	03/20/2002
EPL Issuance Date:	Not reported
Status:	Historical
Title:	MMPC R4-2002-0036 - G & K Management Co., Inc., Grand Promenade (03/20/02)
Description:	Mandatory Minimum Penalty Complaint for $3,000, issued 3/20/02 for permit effluent violation. If discharger waives hearing, payment of $3,000 is due by 4/3/02, or committment to a SEP/PPP is due by 4/3/02.
Program:	NPDES
Latest Milestone Completion Date:	12/12/2002
# Of Programs1:	1
Total Assessment Amount:	3000
Initial Assessed Amount:	0
Liability $ Amount:	3000
Project $ Amount:	0
Liability $ Paid:	3000
Project $ Completed:	0
Total $ Paid/Completed Amount:	3000

BJ737 **HOME SAVINGS OF AMERICA TOWER** **CA FID UST** **S101583719**
North **660 S FIGUEROA ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.034 mi.
180 ft. **Site 1 of 10 in cluster BJ**

Relative:
Higher

Actual:
283 ft.

CA FID UST:

Facility ID:	19005690
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136228220
Mail To:	Not reported
Mailing Address:	660 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

HOME SAVINGS OF AMERICA TOWER (Continued) **S101583719**

SWEEPS UST:

Status:	A
Comp Number:	6621
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BJ738 **HOMES SAVINGS TOWER** **HAZNET** **S103968167**
North **660 SOUTH FIGUEROA #1950** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.034 mi.
180 ft. **Site 2 of 10 in cluster BJ**

Relative:
Higher

Actual:
283 ft.

HAZNET:

Year:	1995
Gepaid:	CAC000937872
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	660 SOUTH FIGUEROA #1950
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD088504881
TSD County:	Orange
Waste Category:	Alkaline solution (pH >= 12.5) with metals
Disposal Method:	Recycler
Tons:	.3050
Facility County:	Los Angeles

BJ739 **1X HOMES SAVINGS TOWER** **HAZNET** **S108741409**
North **660 S. FIGUEROA ST.,** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.034 mi.
180 ft. **Site 3 of 10 in cluster BJ**

Relative:
Higher

Actual:
283 ft.

HAZNET:

Year:	2006
Gepaid:	CAC000061277
Contact:	BOB LAMER
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	725 S. FIGUEROA ST., STE 2120
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	UTD981552177

1X HOMES SAVINGS TOWER (Continued) **S108741409**

TSD County: 99
Waste Category: Waste oil and mixed oil
Disposal Method: Treatment, Incineration
Tons: 0.05
Facility County: Los Angeles

G740
North
< 1/8
0.035 mi.
185 ft.

MORI HIEZO
647 S FLOWER ST
LOS ANGELES, CA

EDR Historical Cleaners **1009192327** **N/A**

Site 25 of 25 in cluster G

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:
Name: MORI HIEZO
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

AP741
SSW
< 1/8
0.035 mi.
186 ft.

HOFFMAN E H
1128 S OLIVE ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009080933** **N/A**

Site 8 of 16 in cluster AP

Relative:
Lower

Actual:
246 ft.

EDR Historical Auto Stations:
Name: HOFFMAN E H
Year: 1933
Type: AUTOMOBILE REPAIRING

Name: HOFFMAN JOHANNA MRS
Year: 1937
Type: AUTOMOBILE REPAIRING

Name: HOFFMAN E H
Year: 1942
Type: AUTOMOBILE REPAIRING

D742
NE
< 1/8
0.036 mi.
190 ft.

MUSIC CENTER PAVILION THEATRE
135 N GRAND AVE
LOS ANGELES, CA 90063

HIST UST **U001562348** **N/A**

Site 4 of 6 in cluster D

Relative:
Higher

Actual:
400 ft.

HIST UST:
Region: STATE
Facility ID: 00000020717
Facility Type: Other
Other Type: THEATRE
Total Tanks: 0001
Contact Name: L.A. COUNTY MECHANICAL DEPARTM
Telephone: 2132672242
Owner Name: LOS ANGELES COUNTY MECHANICAL
Owner Address: 1100 N. EASTERN AVE.
Owner City,St,Zip: LOS ANGELES, CA 90063

Tank Num: 001

MUSIC CENTER PAVILION THEATRE (Continued) **U001562348**

Container Num: #1
Year Installed: 1964
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

D743 **PATINA GROUP** **LOS ANGELES CO. HMS** **S105887851**
NE **135 N GRAND AVE** **N/A**
< 1/8 **LOS ANGELIS, CA**
0.036 mi.
190 ft. **Site 5 of 6 in cluster D**

Relative: Higher
Actual: 400 ft.

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 012459-038826
Facility Type: Not reported
Facility Status: OPEN
Area: 3F
Permit Number: Not reported
Permit Status: Not reported

D744 **AHMANSON THEATRE** **LOS ANGELES CO. HMS** **S102055684**
NE **135 N GRAND AVE** **N/A**
< 1/8 **LOS ANGELIS, CA**
0.036 mi.
190 ft. **Site 6 of 6 in cluster D**

Relative: Higher
Actual: 400 ft.

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 016365-021597
Facility Type: Not reported
Facility Status: OPEN
Area: 3F
Permit Number: Not reported
Permit Status: Not reported

BK745 **BRANCHES** **EDR Historical Cleaners** **1009190315**
ENE **228 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.036 mi.
191 ft. **Site 1 of 34 in cluster BK**

Relative: Higher
Actual: 268 ft.

EDR Historical Cleaners:
Name: BRANCHES
Year: 1929
Type: CLEANERS AND DYERS

AP746 **SSW** **< 1/8** **0.038 mi.** **198 ft.**

MORRIS J H
1130 S OLIVE ST
LOS ANGELES, CA

EDR Historical Auto Stations — **1009082494** **N/A**

Site 9 of 16 in cluster AP

Relative: **Lower**
Actual: **246 ft.**

EDR Historical Auto Stations:

Name:	MORRIS J H
Year:	1942
Type:	AUTOMOBILE REPAIRING

BK747 **ENE** **< 1/8** **0.040 mi.** **210 ft.**

VERSAILLES JEWELERS, LEVON ATM
220 W 5TH STREET #505
LOS ANGELES, CA 90013

EMI — **S106842135** **N/A**

Site 2 of 34 in cluster BK

Relative: **Higher**
Actual: **268 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57374
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BK748 **ENE** **< 1/8** **0.040 mi.** **210 ft.**

HERRERAS JEWELRY
220 W 5TH 713
LOS ANGELES, CA 90013

RCRA-SQG **FINDS** **HAZNET** — **1000356364** **CAD981691330**

Site 3 of 34 in cluster BK

Relative: **Higher**
Actual: **268 ft.**

RCRA-SQG:

Date form received by agency:	12/10/1986
Facility name:	HERRERAS JEWELRY
Facility address:	220 W 5TH 713 LOS ANGELES, CA 90013
EPA ID:	CAD981691330
Contact:	ENVIRONMENTAL MANAGER
Contact address:	220 W 5TH 713 LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 627-1499
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous

HERRERAS JEWELRY (Continued) **1000356364**

waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	URIEL HERRERA
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002754582

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

HERRERAS JEWELRY (Continued) **1000356364**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1995
Gepaid:	CAD981691330
Contact:	URIEL HERRERA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 713
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.7500
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAD981691330
Contact:	URIEL HERRERA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 713
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2375
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAD981691330
Contact:	URIEL HERRERA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 713
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2375
Facility County:	Los Angeles

BK749 **ENE** **< 1/8** **0.040 mi.** **210 ft.**	**IDEAL JEWELRY** **220 W 5TH ST** **LOS ANGELES, CA 90013** **Site 4 of 34 in cluster BK**	**RCRA-SQG** **FINDS**	**1000147917** **CAD982355505**

Relative:
Higher

Actual:
268 ft.

RCRA-SQG:

Date form received by agency:	10/27/1987
Facility name:	IDEAL JEWELRY
Facility address:	220 W 5TH ST LOS ANGELES, CA 90014
EPA ID:	CAD982355505
Mailing address:	W FIFTH ST LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	220 W FIFTH ST LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 622-4421
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	DIKRAN MINASSIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

IDEAL JEWELRY (Continued) **1000147917**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009544118

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK750 **RAMON MORENO JEWELRY** **HAZNET** **S107146043**
ENE **220 W 5TH STREET, STE 504** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 5 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000128058
Contact:	RAMON MORENO/OWNER
Telephone:	2136227341
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 504
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAL000098454
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.02
Facility County:	Los Angeles

BK751 **M K JEWELRY** **HAZNET** **S108212890**
ENE **220 WEST 5TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 6 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2007
Gepaid:	CAL000117078
Contact:	KORTOGHLIAN MELKEIST
Telephone:	2136883095

M K JEWELRY (Continued) **S108212890**

Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAT000613893
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.14
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAL000117078
Contact:	KORTOGHLIAN MELKEIST
Telephone:	2136883095
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAT000613893
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.13
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAL000117078
Contact:	KORTOGHLIAN MELKEIST
Telephone:	2136883095
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 411
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAT000613893
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.33
Facility County:	Not reported

BK752 **VERSAILLES JEWERLY** **RCRA-SQG** **1000376657**
ENE **220 W 5TH ST #505** **FINDS** **CAD981694896**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 7 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

RCRA-SQG:

Date form received by agency:	12/29/1986
Facility name:	VERSAILLES JEWERLY
Facility address:	220 W 5TH ST #505 LOS ANGELES, CA 90013
EPA ID:	CAD981694896
Mailing address:	W 5TH ST #505 LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	220 W 5TH ST #505

VERSAILLES JEWERLY (Continued) **1000376657**

	LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 622-5175
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	LEVON ATMAJIAN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002755607

Environmental Interest/Information System

VERSAILLES JEWERLY (Continued) **1000376657**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK753 **UNIVERSAL JEWELRY** **HAZNET** **S103642570**
ENE **220 WEST 5TH STREET #411** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 8 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

HAZNET:

Year:	1993
Gepaid:	CAL000106941
Contact:	HERNAN OCHOA BANOS
Telephone:	3104958252
Mailing Name:	Not reported
Mailing Address:	220 WEST 5TH STREET #411
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.0792
Facility County:	Los Angeles

BK754 **CHMIRS** **S100280147**
ENE **220 WEST 5TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 9 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

CHMIRS:

OES Incident Number:	9100453
OES notification:	Not reported
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	24-MAY-91
Date Completed:	**24-MAY-91**
Property Use:	500
Agency Id Number:	19105
Agency Incident Number:	359
Time Notified:	1219
Time Completed:	1315
Surrounding Area:	500
Estimated Temperature:	75
Property Management:	P
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported

(Continued) **S100280147**

Special Studies 6:	Not reported
More Than Two Substances Involved?:	N
Resp Agncy Personel # Of Decontaminated:	0
Responding Agency Personel # Of Injuries:	0
Responding Agency Personel # Of Fatalities:	0
Others Number Of Decontaminated:	0
Others Number Of Injuries:	0
Others Number Of Fatalities:	0
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	ALVIN K. BARNHART FS4-B
Report Date:	24-MAY-91
Comments:	Y
Facility Telephone:	213 485-6003
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	06-JUL-92
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

BK755 | **K. L. K. JEWELRY MFG** | **EMI** | **S106833659**
ENE | **220 W 5TH ST # 702** | **N/A**
< 1/8 | **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. | **Site 10 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57365
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BK756 | **PREMIER CASTING & FINISHING INC** | **HAZNET** | **S107147778**
ENE | **220 W 5TH ST STE 805** | **N/A**
< 1/8 | **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. | **Site 11 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000253148
Contact:	EDGAR JANKOCHIAN
Telephone:	2136295254
Mailing Name:	PRODUCTION MANAGER
Mailing Address:	707 S BROADWAY STE 601
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAL000098454
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.04
Facility County:	Los Angeles

BK757 | **MYRNA'S JEWELRY** | **RCRA-SQG** | **1000306928**
ENE | **220 W 5TH STREET - R-201** | **FINDS** | **CAD981414139**
< 1/8 | **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. | **Site 12 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

RCRA-SQG:

Date form received by agency:	05/22/1986
Facility name:	MYRNA'S JEWELRY
Facility address:	220 W 5TH STREET - R-201 LOS ANGELES, CA 90013

MYRNA'S JEWELRY (Continued) **1000306928**

EPA ID:	CAD981414139
Mailing address:	220 W FIFTH STREET R-201 LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	220 W 5TH STREET - R-201 LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 623-2935
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MYRNA VALLEJOS
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

MYRNA'S JEWELRY (Continued) **1000306928**

FINDS:

Registry ID: 110009535869

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK758 **EL DIAMANTE JEWELRY** **HAZNET** **S103962528**
ENE **220 WEST 5TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 13 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000130398
Contact:	JAVIER PALAFOX
Telephone:	8184481400
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 915
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAT000612150
TSD County:	Orange
Waste Category:	Liquids with cyanides >= 1,000 Mg./L
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

BK759 **SIERRA INTL INVESTMENT PROPERTIES** **RCRA-NonGen** **1000455463**
ENE **220 W 5TH ST STE 407** **FINDS** **CAD982494437**
< 1/8 **LOS ANGELES, CA 90013** **HAZNET**
0.040 mi.
210 ft. **Site 14 of 34 in cluster BK**

Relative: Higher

Actual: 268 ft.

RCRA-NonGen:

Date form received by agency:	08/12/1993
Facility name:	SIERRA INTL INVESTMENT PROPERTIES
Facility address:	220 W 5TH ST STE 407 LOS ANGELES, CA 90013
EPA ID:	CAD982494437
Mailing address:	215 W FIFTH ST LOS ANGELES, CA 90013
Contact:	RICHARD MANNO
Contact address:	220 W 5TH ST STE 407 LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 688-0140
Contact email:	Not reported
EPA Region:	09

SIERRA INTL INVESTMENT PROPERTIES (Continued) **1000455463**

Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: RICHARD MANNO
Owner/operator address: 215 W 5TH ST
LOS ANGELES, CA 90013
Owner/operator country: Not reported
Owner/operator telephone: (213) 688-0140
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110009546722

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

SIERRA INTL INVESTMENT PROPERTIES (Continued) **1000455463**

HAZNET:

Year:	1993
Gepaid:	CAD982494437
Contact:	RICHARD MANNO
Telephone:	4155551212
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST SUITE 407
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	4.2500
Facility County:	Los Angeles

BK760 **FIFTH STREET FUNDING INC** **HAZNET** **S103964316**
ENE **220 WEST 5TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 15 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000156660
Contact:	MARK ARKIN VICE PRESIDENT
Telephone:	2136893232
Mailing Name:	Not reported
Mailing Address:	215 W FIFTH STREET #910
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	IND000646943
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Not reported
Tons:	0.01
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000156660
Contact:	MARK ARKIN VICE PRESIDENT
Telephone:	2136893232
Mailing Name:	Not reported
Mailing Address:	215 W FIFTH STREET #910
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	IND000646943
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Not reported
Tons:	0.06
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000156660
Contact:	MARK ARKIN VICE PRESIDENT
Telephone:	2136893232

FIFTH STREET FUNDING INC (Continued) **S103964316**

Mailing Name:	Not reported
Mailing Address:	215 W FIFTH STREET #910
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	IND000646943
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Not reported
Tons:	0.05
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000156660
Contact:	FIFTH STREET FUNDING INC
Telephone:	2136893232
Mailing Name:	Not reported
Mailing Address:	220 W 5TH ST STE 804
Mailing City,St,Zip:	LOS ANGELES, CA 900132011
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	25.6500
Facility County:	Los Angeles

BK761
ENE **220 W. 5TH ST.**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 16 of 34 in cluster BK**

ERNS **91220210**
N/A

Relative:
Higher

Actual:
268 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

BK762 **SIERRA INTL INVESTMENT PROPERT**
ENE **220 W 5TH ST, SUITE 407**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 17 of 34 in cluster BK**

EMI **S106839367**
N/A

Relative:
Higher

Actual:
268 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	47763
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

SIERRA INTL INVESTMENT PROPERT (Continued) **S106839367**

Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

BK763 **SEZAR'S MODERN ART, S KESHISHI** **EMI** **S106839159**
ENE **220 W 5TH ST, SUITE # 710** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 18 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	57251
Air District Name:	SC
SIC Code:	3369
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BK764 **WALTER ZIMMER CO** **RCRA-SQG** **1000401467**
ENE **220 W FIFTH ST** **FINDS** **CAD981373038**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 19 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

RCRA-SQG:

Date form received by agency:	01/28/1986
Facility name:	WALTER ZIMMER CO
Facility address:	220 W FIFTH ST LOS ANGELES, CA 90013
EPA ID:	CAD981373038
Mailing address:	W FIFTH ST LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	220 W FIFTH ST LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 628-8961
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RAM PROPERTY MGMT

WALTER ZIMMER CO (Continued) **1000401467**

Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002684792

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK765 | **ENE** | **< 1/8** | **0.040 mi.** | **210 ft.**

220 W 5TH ST
LOS ANGELES, CA 90013

Site 20 of 34 in cluster BK

ERNS **93305302** **N/A**

Relative: Higher

Actual: 268 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

BK766 | **ENE** | **< 1/8** | **0.040 mi.** | **210 ft.**

GEUVJEHIZIAN GARABED JEWELRY
220 W 5TH ST #510
LOS ANGELES, CA 90013

Site 21 of 34 in cluster BK

RCRA-SQG **1000433393**
FINDS **CAD981379472**

Relative: Higher

Actual: 268 ft.

RCRA-SQG:

Date form received by agency: 02/04/1986
Facility name: GEUVJEHIZIAN GARABED JEWELRY
Facility address: 220 W 5TH ST #510
LOS ANGELES, CA 90013
EPA ID: CAD981379472
Mailing address: W 5TH ST #510
LOS ANGELES, CA 90013
Contact: ENVIRONMENTAL MANAGER
Contact address: 220 W 5TH ST #510
LOS ANGELES, CA 90013
Contact country: US
Contact telephone: (213) 622-7767
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: RAM PROP MGMT
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

GEUVJEHIZIAN GARABED JEWELRY (Continued) **1000433393**

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002687076

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK767
ENE
< 1/8
0.040 mi.
210 ft.

DAN'S JEWELERS
220 W 5TH ST #608
LOS ANGELES, CA 90013

RCRA-SQG **1000137946**
FINDS **CAD981394430**

Site 22 of 34 in cluster BK

Relative:
Higher

Actual:
268 ft.

RCRA-SQG:

Date form received by agency: 02/25/1986
Facility name: DAN'S JEWELERS
Facility address: 220 W 5TH ST #608
LOS ANGELES, CA 90013
EPA ID: CAD981394430
Mailing address: W 5TH ST #608
LOS ANGELES, CA 90013
Contact: ENVIRONMENTAL MANAGER
Contact address: 220 W 5TH ST #608
LOS ANGELES, CA 90013
Contact country: US
Contact telephone: (213) 680-0642
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

DAN'S JEWELERS (Continued) **1000137946**

Owner/Operator Summary:

Owner/operator name:	DANIEL VARGAS
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002692453

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BK768 **MIDEB MANAGEMENT** **HAZNET** **S103642568**
ENE **220 WEST 5TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. **Site 23 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	1995
Gepaid:	CAL000121087
Contact:	MIDEB NOMINEES
Telephone:	2136880140
Mailing Name:	Not reported
Mailing Address:	215 WEST 5TH STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	6.1924
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000121087
Contact:	MIDEB NOMINEES
Telephone:	2136880140
Mailing Name:	Not reported
Mailing Address:	215 WEST 5TH STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	7.8000
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000121087
Contact:	MIDEB NOMINEES
Telephone:	2136880140
Mailing Name:	Not reported
Mailing Address:	215 WEST 5TH STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	24.5000
Facility County:	Los Angeles

BL769 | **EL POLLO PRONTO** | **EMI** | **S106830555**
ENE | **219 W. 4TH STREET** | | **N/A**
< 1/8 | **LOS ANGELES, CA 90013**
0.040 mi.
210 ft. | **Site 1 of 15 in cluster BL**

Relative: Higher

Actual: 275 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	68706
Air District Name:	SC
SIC Code:	5812
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BM770 | | **ERNS** | **2004715760**
WSW | **1130 S. FLOWER ST.** | | **N/A**
< 1/8 | **LOS ANGELES, CA**
0.040 mi.
210 ft. | **Site 1 of 6 in cluster BM**

Relative: Lower

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual: 244 ft.

BA771 | **RUBEN FRANCO** | **HAZNET** | **S106088879**
SE | **163 W 9TH ST** | | **N/A**
< 1/8 | **LOS ANGELES, CA 90015**
0.040 mi.
210 ft. | **Site 4 of 4 in cluster BA**

Relative: Lower

Actual: 250 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002556070
Contact:	Ruben Franco
Telephone:	6615102001
Mailing Name:	Not reported
Mailing Address:	22505 Decoro Dr
Mailing City,St,Zip:	Saugus, CA 91350
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.03
Facility County:	Not reported

AP772 **SSW** **< 1/8** **0.040 mi.** **211 ft.**	**JOHNSON J W REAR** **1132 S OLIVE ST** **LOS ANGELES, CA** **Site 10 of 16 in cluster AP**	**EDR Historical Auto Stations**	**1009080717** **N/A**

Relative: **Lower**

Actual: **246 ft.**

EDR Historical Auto Stations:

Name:	JOHNSON J W REAR
Year:	1933
Type:	AUTOMOBILE REPAIRING

AP773 **SSW** **< 1/8** **0.040 mi.** **211 ft.**	**TRANSAMERICA CENTER/GARAGE** **1133 S OLIVE ST** **LOS ANGELES, CA 90015** **Site 11 of 16 in cluster AP**	**UST**	**U003880021** **N/A**

Relative: **Lower**

Actual: **246 ft.**

UST:

Facility ID:	24766
Latitude:	34.04035
Longitude:	-118.26139

AP774 **SSW** **< 1/8** **0.040 mi.** **211 ft.**	**SERVICE STATION 2686** **1133 S OLIVE ST** **LOS ANGELES, CA 90015** **Site 12 of 16 in cluster AP**	**HIST UST**	**U001560630** **N/A**

Relative: **Lower**

Actual: **246 ft.**

HIST UST:

Region:	STATE
Facility ID:	00000007907
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0002
Contact Name:	OCCIDENTAL LIFE INS.
Telephone:	0000000000
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010

Tank Num:	001
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

AP775 **LUARD L S** **EDR Historical Auto Stations** **1009077906**
SSW **1133 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.040 mi.
211 ft. **Site 13 of 16 in cluster AP**

Relative:
Lower

Actual:
246 ft.

EDR Historical Auto Stations:

Name:	LUARD L S
Year:	1933
Type:	AUTOMOBILE REPAIRING
Name:	LUARD L S
Year:	1937
Type:	AUTOMOBILE REPAIRING

AP776 **TRANSAMERICA OCCIDENTAL** **CA FID UST** **S101586091**
SSW **1133 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.040 mi.
211 ft. **Site 14 of 16 in cluster AP**

Relative:
Lower

Actual:
246 ft.

CA FID UST:

Facility ID:	19038113
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2137422671
Mail To:	Not reported
Mailing Address:	1133 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	6073
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BM777		**CHMIRS**	**S107448355**
WSW	**1130 SOUTH FLOWER ST**		**N/A**
< 1/8	**LOS ANGELES, CA 90031**		
0.040 mi.			
212 ft.	**Site 2 of 6 in cluster BM**		

Relative:
Lower

Actual:
244 ft.

CHMIRS:

OES Incident Number:	04-1363
OES notification:	3/11/200412:33:28 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2004
Agency:	City of Los Angeles Waste Water Collection Div
Incident Date:	3/8/200412:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported

(Continued) **S107448355**

Contained:	Yes
Site Type:	Residence
E Date:	Not reported
Substance:	Sewage
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	2,400
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Substance was released from an 8" main line that was blocked. Substance released in to a private residence. Investigation is on going other residences maybe effected.

BN778
NE
< 1/8
0.040 mi.
213 ft.

RELIABLE CLEANERS AND HAND LAUNDRY
423 W 4TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009188316**
N/A

Site 1 of 3 in cluster BN

Relative:
Higher

Actual:
304 ft.

EDR Historical Cleaners:

Name:	LEVENSON SAML
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	LEVENSON SAML
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	RELIABLE CLEANERS AND HAND LAUNDRY
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	WOLK C H
Year:	1937
Type:	LAUNDRIES HAND

BO779 **BANK OF AMERICA** **HAZNET** **S102825002**
West **1130 S FIGUEROA** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.041 mi.
216 ft. **Site 1 of 2 in cluster BO**

Relative:
Lower

Actual:
244 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000162972
Contact:	BANK OF AMERICA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1130 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Other
Tons:	.0300
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000162972
Contact:	BANK OF AMERICA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1130 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.5056
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000162972
Contact:	BANK OF AMERICA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1130 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.6856
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000162972
Contact:	BANK OF AMERICA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1130 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000

BANK OF AMERICA (Continued) **S102825002**

Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Tons: .6000
Facility County: Los Angeles

W780
NW
< 1/8
0.042 mi.
224 ft.

CARTER JACK
818 W 9TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009190807**
N/A

Site 5 of 5 in cluster W

Relative:
Lower

Actual:
253 ft.

EDR Historical Cleaners:
Name: HURLBERT E W
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: CARTER JACK
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

BK781
ENE
< 1/8
0.042 mi.
224 ft.

LOS ANGELES DENTAL CENTER
215 W 5TH ST STE 210
LOS ANGELES, CA 90013

HAZNET **S103975390**
N/A

Site 24 of 34 in cluster BK

Relative:
Higher

Actual:
268 ft.

HAZNET:
Year: 2003
Gepaid: CAL000122091
Contact: ROBERTO PARRA
Telephone: 2136257575
Mailing Name: Not reported
Mailing Address: 215 W 5TH ST STE 210
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Liquids with mercury >= 20 Mg./L
Disposal Method: Not reported
Tons: 0
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000122091
Contact: ROBERTO PARRA, D.D.S.
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 215 W 5TH ST STE 210
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture

LOS ANGELES DENTAL CENTER (Continued) **S103975390**

Disposal Method: Transfer Station
Tons: .0041
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000122091
Contact: ROBERTO PARRA, D.D.S.
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 215 W 5TH ST STE 210
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD050806850
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Transfer Station
Tons: .0210
Facility County: Los Angeles

BK782 **CHESTER WILLIAMS BLDG** **HAZNET** **S109930757**
ENE **215 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.042 mi.
224 ft. **Site 25 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:
Year: 2008
Gepaid: CAC002633617
Contact: GREG MARTIN
Telephone: 2136881100
Mailing Name: 5TH STREET FUNDING INC
Mailing Address: 215 W 5TH ST STE 910
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 7.6
Facility County: Los Angeles

BK783 **ALLISON KAUFMAN CO** **HAZNET** **S103642052**
ENE **215 W 5TH ST 11TH FLOOR** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.042 mi.
224 ft. **Site 26 of 34 in cluster BK**

Relative:
Higher

Actual:
268 ft.

HAZNET:
Year: 2010
Gepaid: CAD981648967
Contact: UNDELIVERABLE PER SURVEY
Telephone: --
Mailing Name: Not reported
Mailing Address: 215 E 5TH ST 11TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000

ALLISON KAUFMAN CO (Continued) **S103642052**

Gen County: Not reported
TSD EPA ID: NCD095119210
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Metals Recovery Including Retoring,Smelting,Chemicals,Ect
Tons: 0.15
Facility County: Los Angeles

Year: 2006
Gepaid: CAD981648967
Contact: UNDELIVERABLE PER SURVEY
Telephone: --
Mailing Name: Not reported
Mailing Address: 215 E 5TH ST 11TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: NCD095119210
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Transfer Station
Tons: 0.02
Facility County: Los Angeles

Year: 2004
Gepaid: CAD981648967
Contact: UNDELIVERABLE PER SURVEY
Telephone: --
Mailing Name: Not reported
Mailing Address: 215 E 5TH ST 11TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: MAD128422870
TSD County: Not reported
Waste Category: Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method: Not reported
Tons: 0.1
Facility County: Not reported

Year: 1999
Gepaid: CAD981648967
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 215 E 5TH ST 11TH FLOOR
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: AZD980695332
TSD County: 99
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0.0208
Facility County: Los Angeles

Year: 1993
Gepaid: CAD981648967
Contact: Not reported

ALLISON KAUFMAN CO (Continued) **S103642052**

Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	215 E 5TH ST 11TH FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD060398229
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2 with metals
Disposal Method:	Recycler
Tons:	.0041
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

BK784
ENE
< 1/8
0.042 mi.
224 ft.

CHESTER WILLIAMS BUILDING
215 W 5TH ST
LOS ANGELES, CA 90013

HAZNET **S109928344**
N/A

Site 27 of 34 in cluster BK

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002637695
Contact:	GREG MARTIN
Telephone:	2136881100
Mailing Name:	Not reported
Mailing Address:	215 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	7.2
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002637695
Contact:	GREG MARTIN
Telephone:	2136881100
Mailing Name:	Not reported
Mailing Address:	215 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.75
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002637695
Contact:	GREG MARTIN
Telephone:	2136881100

CHESTER WILLIAMS BUILDING (Continued) **S109928344**

Mailing Name:	Not reported
Mailing Address:	215 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.15
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAC002628126
Contact:	GREG MARTIN
Telephone:	2136881100
Mailing Name:	5TH STREET FUNDING INC
Mailing Address:	215 W 5TH ST STE 910
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	3.2
Facility County:	Los Angeles

AM785 **CITY OF HOPE DEVELOPMENT CTR** **HAZNET** **S103641015**
East **208 W 8TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90001**
0.043 mi.
228 ft. **Site 5 of 5 in cluster AM**

Relative:
Lower

Actual:
252 ft.

HAZNET:

Year:	1999
Gepaid:	CAL000079658
Contact:	CITY OF HOPE NATL MEDICAL CTR
Telephone:	8183598111
Mailing Name:	Not reported
Mailing Address:	1500 E DUARTE RD
Mailing City,St,Zip:	DUARTE, CA 910100000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Treatment, Tank
Tons:	0.1251
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000079658
Contact:	CITY OF HOPE NATL MEDICAL CTR
Telephone:	8183598111
Mailing Name:	Not reported
Mailing Address:	1500 E DUARTE RD
Mailing City,St,Zip:	DUARTE, CA 910100000
Gen County:	Los Angeles

CITY OF HOPE DEVELOPMENT CTR (Continued) **S103641015**

TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Recycler
Tons:	0.1668
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000079658
Contact:	CITY OF HOPE NATL MEDICAL CTR
Telephone:	8183598111
Mailing Name:	Not reported
Mailing Address:	1500 E DUARTE RD
Mailing City,St,Zip:	DUARTE, CA 910100000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Disposal, Other
Tons:	0.1251
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000079658
Contact:	CITY OF HOPE NATL MEDICAL CTR
Telephone:	8183598111
Mailing Name:	Not reported
Mailing Address:	1500 E DUARTE RD
Mailing City,St,Zip:	DUARTE, CA 910100000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Not reported
Tons:	0.0075
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000079658
Contact:	CITY OF HOPE NATL MEDICAL CTR
Telephone:	8183598111
Mailing Name:	Not reported
Mailing Address:	1500 E DUARTE RD
Mailing City,St,Zip:	DUARTE, CA 910100000
Gen County:	Los Angeles
TSD EPA ID:	UTD981552177
TSD County:	99
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Not reported
Tons:	.1000
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
24 additional CA_HAZNET: record(s) in the EDR Site Report.

BD786 **J W PRESSING PARLOR** **EDR Historical Cleaners** **1009187282**
ENE **216 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.044 mi.
231 ft. **Site 17 of 18 in cluster BD**

Relative:
Higher

Actual:
257 ft.

EDR Historical Cleaners:
Name: J W PRESSING PARLOR
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

BP787 **ERNS** **91215334**
NE **L.A. TIMES BLDG 120 S SPRING ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.044 mi.
232 ft. **Site 1 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

T788 **801 TOWER BUILDING** **HIST CORTESE** **S102423552**
NW **845 FIGUEROA AVE S** **LUST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.044 mi.
233 ft. **Site 13 of 13 in cluster T**

Relative:
Lower

Actual:
254 ft.

CORTESE:
Region: CORTESE
Facility County Code: 19
Reg By: LTNKA
Reg Id: 900170125

LUST:
Region: STATE
Global Id: T0603700592
Latitude: 34.047249
Longitude: -118.262391
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 03/04/1996
Lead Agency: LOS ANGELES RWQCB (REGION 4)
Case Worker: YR
Local Agency: LOS ANGELES, CITY OF
RB Case Number: 900170125
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:
Global Id: T0603700592
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles

801 TOWER BUILDING (Continued) **S102423552**

Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported
Global Id:	T0603700592
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700592
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900170125
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Groundwater
Abatement Method Used at the Site:	Excavate and Dispose
Global ID:	T0603700592
W Global ID:	W0607701254
Staff:	UNK
Local Agency:	19050
Cross Street:	Not reported
Enforcement Type:	Not reported
Date Leak Discovered:	Not reported
Date Leak First Reported:	10/19/1993
Date Leak Record Entered:	3/30/1995
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	3/4/1996
Date the Case was Closed:	3/4/1996
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	Not reported
Water System:	UNOCAL - JIM SCOTT
Well Name:	Not reported
Approx. Dist To Production Well (ft):	1935.0000758261973303136318966
Source of Cleanup Funding:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported

801 TOWER BUILDING (Continued) **S102423552**

Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Yes
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: UNION BANK
RP Address: P.O. BOX 926, LA PUENTE, CA 91747-0926
Program: LUST
Lat/Long: 34.0469421 / -1
Local Agency Staff: PEJ
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: 3901254-001GEN
Summary: Not reported

BQ789 **NEEDLEMAN LOUIS** **EDR Historical Cleaners** **1009189481**
NE **125 N BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.044 mi.
234 ft. **Site 1 of 6 in cluster BQ**

Relative:
Higher

Actual:
311 ft.

EDR Historical Cleaners:
Name: NEEDLEMAN LOUIS
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

BL790 **TWIN SPRINGS LTD PARTNSHP,B.PH** **EMI** **S106841483**
ENE **433 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.044 mi.
234 ft. **Site 2 of 15 in cluster BL**

Relative:
Higher

Actual:
272 ft.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 73023
Air District Name: SC
SIC Code: 6552
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0

TWIN SPRINGS LTD PARTNSHP,B.PH (Continued) **S106841483**

Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

BL791
ENE
< 1/8
0.044 mi.
234 ft.

TWIN SPRINGS LLC
433 SPRING STREET, SOUTH
LOS ANGELES, CA CA

LUST **S107619937**
N/A

Site 3 of 15 in cluster BL

Relative:
Higher

Actual:
272 ft.

LUST:

Region:	STATE
Global Id:	T0603734500
Latitude:	34.048349
Longitude:	-118.249236
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/09/2011
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	JW
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900130070
LOC Case Number:	32058
File Location:	Regional Board
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603734500
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

Global Id:	T0603734500
Contact Type:	Regional Board Caseworker
Contact Name:	JIMMIE WOO
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 WEST 4TH STREET, SUITE 200
City:	LOS ANGELES
Email:	jwoo@waterboards.ca.gov
Phone Number:	2135766600

LUST:

Global Id:	T0603734500
Action Type:	ENFORCEMENT
Date:	03/29/2006
Action:	Staff Letter

Global Id:	T0603734500
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

TWIN SPRINGS LLC (Continued) **S107619937**

Global Id:	T0603734500
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery
Global Id:	T0603734500
Action Type:	RESPONSE
Date:	05/26/2006
Action:	Other Report / Document
Global Id:	T0603734500
Action Type:	ENFORCEMENT
Date:	09/16/2008
Action:	Notice to Comply
Global Id:	T0603734500
Action Type:	ENFORCEMENT
Date:	09/09/2011
Action:	Closure/No Further Action Letter

BL792
ENE
< 1/8
0.044 mi.
234 ft.

KJELL H QVALE/RAGNAR C QVALE
419 S SPRING ST
LOS ANGELES, CA 90013

CA FID UST **S101584653**
SWEEPS UST **N/A**

Site 4 of 15 in cluster BL

Relative:
Higher

Actual:
272 ft.

CA FID UST:

Facility ID:	19013908
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	419 S SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	4294
Number:	3
Board Of Equalization:	Not reported
Ref Date:	09-21-93
Act Date:	04-26-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported

KJELL H QVALE/RAGNAR C QVALE (Continued) **S101584653**

Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BL793
ENE
< 1/8
0.044 mi.
234 ft.

LOS ANGELES BUREAU OF SANITATION
433 S SPRING ST LOS ANGELES CA 90013
LOS ANGELES, CA 90013

ICIS **1011514537**
N/A

Site 5 of 15 in cluster BL

Relative:
Higher

Actual:
272 ft.

ICIS:

Enforcement Action ID:	09-2000-0292
FRS ID:	110020051619
Program ID:	FRS 110020051619
Action Name:	CITY OF LOS ANGELES
Facility Name:	LOS ANGELES BUREAU OF SANITATION
Facility Address:	433 S SPRING ST LOS ANGELES CA 90013 LOS ANGELES, California 90013
Enforcement Action Type:	Civil Judicial Action
Facility County:	Los Angeles
EPA Region #:	9

Program ID:	FRS 110020051619
Facility Name:	LOS ANGELES BUREAU OF SANITATION
Address:	433 S SPRING ST
Tribal Indicator:	N
Fed Facility:	Not reported
NAIC Code:	Not reported
SIC Code:	4952
Latitude:	34.048345
Longitude:	-118.248767

BL794
ENE
< 1/8
0.044 mi.
234 ft.

LOS ANGELES BUREAU OF SANITATION
433 S SPRING ST
LOS ANGELES, CA 90013

FINDS **1007649280**
N/A

Site 6 of 15 in cluster BL

Relative:
Higher

Actual:
272 ft.

FINDS:

Registry ID: 110020051619

Environmental Interest/Information System

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA’s programs. The vision for ICIS is to replace EPA’s independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit

LOS ANGELES BUREAU OF SANITATION (Continued) **1007649280**

Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

BL795 **TWIN SPRINGS, LLC** **HAZNET** **S106837878**
ENE **433 S SPRING ST** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.044 mi.
234 ft. **Site 7 of 15 in cluster BL**

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002639446
Contact:	DUSTIN CATINDIG
Telephone:	8187773713
Mailing Name:	Not reported
Mailing Address:	100 UNIVERSAL CITY PLZ
Mailing City,St,Zip:	UNIVERSAL CITY, CA 916081002
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.1
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002639446
Contact:	DUSTIN CATINDIG
Telephone:	8187773713
Mailing Name:	Not reported
Mailing Address:	100 UNIVERSAL CITY PLZ
Mailing City,St,Zip:	UNIVERSAL CITY, CA 916081002
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Latex waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.15
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAC002639446
Contact:	DUSTIN CATINDIG
Telephone:	8187773713
Mailing Name:	Not reported
Mailing Address:	100 UNIVERSAL CITY PLZ
Mailing City,St,Zip:	UNIVERSAL CITY, CA 916081002
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.075

TWIN SPRINGS, LLC (Continued) **S106837878**

Facility County: Los Angeles

Year: 2006
Gepaid: CAC002599323
Contact: ALFRED PADILLA
Telephone: 2136251100
Mailing Name: Not reported
Mailing Address: 433 S SPRING ST 8TH FL
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 0.84
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002568146
Contact: VERONICA BECERRA
Telephone: 2136251100
Mailing Name: Not reported
Mailing Address: 433 S SPRING ST
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 3.37
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 7851
Air District Name: SC
SIC Code: 8712
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 10
Reactive Organic Gases Tons/Yr: 6
Carbon Monoxide Emissions Tons/Yr: 66
NOX - Oxides of Nitrogen Tons/Yr: 4
SOX - Oxides of Sulphur Tons/Yr: 1
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

BL796 **CHMIRS** **S105675147**
ENE **433 S. SPRING ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.044 mi.
234 ft. **Site 8 of 15 in cluster BL**

Relative:
Higher

Actual:
272 ft.

CHMIRS:

OES Incident Number:	01-2499
OES notification:	4/29/200105:49:06 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Unknown
Waterway:	Storm Drain
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	Los Angeles City FD
Incident Date:	4/29/200112:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported

(Continued) **S105675147**

Contained:	Yes
Site Type:	Residence
E Date:	Not reported
Substance:	Green substance w/ Ph level of 10
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	10
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0.000000
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fire Dept. inspector discovered the leak from an air conditioner unit. RP states approx. 50 gallons ran down the side of the building, with 10 gallons entering into the storm drain.

AP797 **CLEGHORN ROBT** **EDR Historical Auto Stations** **1009080789**
SSW **1137 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.045 mi.
235 ft. **Site 15 of 16 in cluster AP**

Relative: **Lower**

Actual: **246 ft.**

EDR Historical Auto Stations:

Name:	CLEGHORN ROBT
Year:	1937
Type:	AUTOMOBILE REPAIRING

AP798 **LUARD L S** **EDR Historical Auto Stations** **1009082057**
SSW **1138 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.047 mi.
248 ft. **Site 16 of 16 in cluster AP**

Relative: **Lower**

Actual: **245 ft.**

EDR Historical Auto Stations:

Name:	LUARD L S
Year:	1942
Type:	AUTOMOBILE REPAIRING

BD799 **BARRY SHY & ASSOCIATES** **HAZNET** **S106085521**
ENE **215 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90001**
0.048 mi.
253 ft. **Site 18 of 18 in cluster BD**

Relative:
Higher

Actual:
257 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002428519
Contact:	KELLY AKINRELE/PROTEC ENGINEER
Telephone:	8187046331
Mailing Name:	Not reported
Mailing Address:	4371 WINEKKA AVE
Mailing City,St,Zip:	WOODLAND HILLS, CA 913640000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	71.63
Facility County:	Not reported

BL800 **FINNERMAN BENJ** **EDR Historical Cleaners** **1009187864**
ENE **213 W 4TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.048 mi.
254 ft. **Site 9 of 15 in cluster BL**

Relative:
Higher

Actual:
275 ft.

EDR Historical Cleaners:

Name:	FINNERMAN BENJ
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

BR801 **TOYO REAL ESTATE** **HAZNET** **S103992403**
NNE **626 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.049 mi.
257 ft. **Site 1 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	1994
Gepaid:	CAC001021536
Contact:	CORPORATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	626 WISHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.1250
Facility County:	Los Angeles

BR802 **PARKER PACIFIC GRP** **HAZNET** **S108752763**
NNE **626 WILSHIRE BLVD STE 550** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.049 mi.
257 ft. **Site 2 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002602808
Contact:	INDY BRICENO
Telephone:	2136241811
Mailing Name:	Not reported
Mailing Address:	626 WILSHIRE BLVD STE 550
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.04
Facility County:	Los Angeles

BS803 **MUSIC CENTER OPERATING CO** **UST** **U003780768**
NE **135 N GRAND AVE** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **HAZNET**
0.051 mi.
268 ft. **Site 1 of 12 in cluster BS**

Relative:
Higher

Actual:
396 ft.

UST:

Facility ID:	24324
Latitude:	34.05626
Longitude:	-118.24845

SWEEPS UST:

Status:	Not reported
Comp Number:	1460
Number:	Not reported
Board Of Equalization:	44-011798
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001460-000001
Actv Date:	Not reported
Capacity:	550
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	DIESEL
Number Of Tanks:	1

Status:	A
Comp Number:	1460
Number:	4
Board Of Equalization:	44-011798
Ref Date:	03-09-93
Act Date:	03-16-94
Created Date:	02-29-88
Tank Status:	A

MUSIC CENTER OPERATING CO (Continued) **U003780768**

Owner Tank Id:	0000001460
Swrcb Tank Id:	19-050-001460-000002
Actv Date:	10-22-92
Capacity:	500
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

HAZNET:

Year:	2007
Gepaid:	CAC002612290
Contact:	MELISSA FICOCIELLO
Telephone:	2139727604
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.15
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002612290
Contact:	MELISSA FICOCIELLO
Telephone:	2139727604
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002612290
Contact:	MELISSA FICOCIELLO
Telephone:	2139727604
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.03
Facility County:	Los Angeles

MUSIC CENTER OPERATING CO (Continued) **U003780768**

Year:	2007
Gepaid:	CAC002612290
Contact:	MELISSA FICOCIELLO
Telephone:	2139727604
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Laboratory waste chemicals
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002612290
Contact:	MELISSA FICOCIELLO
Telephone:	2139727604
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BS804 **MUSIC CTR PERFORMING ARTS CTR OF LA CNTY** **HAZNET** **S103990974**
NE **135 NORTH GRAND AVENUE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.051 mi.
268 ft. **Site 2 of 12 in cluster BS**

Relative:
Higher

Actual:
396 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000144558
Contact:	EDWARD HENNINGS/SAFETY MANAGER
Telephone:	2139727515
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Not reported
TSD EPA ID:	AZD982434185
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Other Treatment
Tons:	0.15
Facility County:	Los Angeles

Year:	2010

MUSIC CTR PERFORMING ARTS CTR OF LA CNTY (Continued) **S103990974**

Gepaid: CAL000144558
Contact: EDWARD HENNINGS/SAFETY MANAGER
Telephone: 2139727515
Mailing Name: Not reported
Mailing Address: 135 N GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900123013
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000144558
Contact: EDWARD HENNINGS/SAFETY MANAGER
Telephone: 2139727515
Mailing Name: Not reported
Mailing Address: 135 N GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900123013
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 15.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000144558
Contact: EDWARD HENNINGS/SAFETY MANAGER
Telephone: 2139727515
Mailing Name: Not reported
Mailing Address: 135 N GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900123013
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 15.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000144558
Contact: EDWARD HENNINGS/SAFETY MANAGER
Telephone: 2139727515
Mailing Name: Not reported
Mailing Address: 135 N GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900123013
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported

MUSIC CTR PERFORMING ARTS CTR OF LA CNTY (Continued) **S103990974**

Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
51 additional CA_HAZNET: record(s) in the EDR Site Report.

BS805 **COUNTY OF LOS ANGELES ISD** **CA FID UST** **S101617587**
NE **135 N GRAND** **LOS ANGELES CO. HMS** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **HAZNET**
0.051 mi.
268 ft. **Site 3 of 12 in cluster BS**

Relative:
Higher

Actual:
396 ft.

CA FID UST:
Facility ID: 19006163
Regulated By: UTNKA
Regulated ID: 00020717
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2132672242
Mail To: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900630000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 012459-012609
Facility Type: Not reported
Facility Status: OPEN
Area: 3F
Permit Number: Not reported
Permit Status: Not reported

HAZNET:
Year: 2010
Gepaid: CAL000350053
Contact: DAVID BONAPARTE
Telephone: 2136874484
Mailing Name: Not reported
Mailing Address: 135 N GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900123013
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)

COUNTY OF LOS ANGELES ISD (Continued) **S101617587**

Tons: 0.231
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002553352
Contact: BELINDA RAMIREZ
Telephone: 3232673137
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 90063
Gen County: Los Angeles
TSD EPA ID: AZR000005454
TSD County: Los Angeles
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Recycler
Tons: 0.44
Facility County: Los Angeles

Year: 2002
Gepaid: CAC002553352
Contact: BELINDA RAMIREZ
Telephone: 3232673137
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 90063
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Recycler
Tons: 1.15
Facility County: Not reported

Year: 1994
Gepaid: CAC001023056
Contact: LOS ANGELES COUNTY
Telephone: 2132672823
Mailing Name: Not reported
Mailing Address: 1100 N. EASTERN AVE.
Mailing City,St,Zip: LOS ANGELES, CA 900630000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 2.5284
Facility County: Los Angeles

BS806 **MUSIC CENTER OPERATING COMPANY** **HAZNET** **S103978716**
NE **135 N GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.051 mi.
268 ft. **Site 4 of 12 in cluster BS**

Relative:
Higher

Actual:
396 ft.

HAZNET:

Year:	1999
Gepaid:	CAC000742336
Contact:	MUSIC CENTER OPERATING COMP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC000742336
Contact:	MUSIC CENTER OPERATING COMP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.2642
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAC000742336
Contact:	MUSIC CENTER OPERATING COMP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.2085
Facility County:	Los Angeles

BS807 **NE** **< 1/8** **0.051 mi.** **268 ft.**

MUSIC CENTER, HUNGRY TIGER INC — **EMI** — **S106836071** **N/A**
135 N GRAND AVENUE
LOS ANGELES, CA 90012

Site 5 of 12 in cluster BS

Relative: Higher
Actual: 396 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	67021
Air District Name:	SC
SIC Code:	5812
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BC808 **WSW** **< 1/8** **0.052 mi.** **273 ft.**

CLAXTON R E — **EDR Historical Auto Stations** — **1009077241** **N/A**
1140 S HOPE ST
LOS ANGELES, CA

Site 3 of 3 in cluster BC

Relative: Lower
Actual: 244 ft.

EDR Historical Auto Stations:

Name:	CLEGHORN R W
Year:	1924
Type:	AUTOMOBILE REPAIRING
Name:	CLAXTON R E
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS
Name:	SAFETY SYSTEM SERVICE CO
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	SAFETY SYSTEM SERVICE CO
Year:	1942
Type:	AUTOMOBILE REPAIRING

BL809 **ENE** **< 1/8** **0.053 mi.** **281 ft.**

BARNETT MORRIS — **EDR Historical Cleaners** — **1009190171** **N/A**
211 W 4TH ST
LOS ANGELES, CA

Site 10 of 15 in cluster BL

Relative: Higher
Actual: 275 ft.

EDR Historical Cleaners:

Name:	BARNETT MORRIS
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

BJ810 | **ENGINE CO 28 LIMITED** | **CA FID UST** | **S101588153**
North | **644 S FIGUEROA ST** | **SWEEPS UST** | **N/A**
< 1/8 | **LOS ANGELES, CA 90017**
0.053 mi.
282 ft. | **Site 4 of 10 in cluster BJ**

Relative: Higher

Actual: 289 ft.

CA FID UST:

Facility ID:	19056389
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	644 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6925
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BT811 | **KITAEN DAVID** | **EDR Historical Cleaners** | **1009185619**
NNW | **908 W 8TH ST** | | **N/A**
< 1/8 | **LOS ANGELES, CA**
0.054 mi.
284 ft. | **Site 1 of 5 in cluster BT**

Relative: Higher

Actual: 255 ft.

EDR Historical Cleaners:

Name:	KITAEN DAVID
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	SPOT CASH CLOTHES CLEANERS
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

BU812 **MUSEUM TOWERS** **HAZNET** **S108214518**
NE **225 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.054 mi.
285 ft. **Site 1 of 10 in cluster BU**

Relative: Higher

Actual: 374 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002615284
Contact:	ALEX JALDAMEZ/SUPERINT
Telephone:	2132299777
Mailing Name:	Not reported
Mailing Address:	225 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.01
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002615284
Contact:	ALEX JALDAMEZ/SUPERINT
Telephone:	2132299777
Mailing Name:	Not reported
Mailing Address:	225 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.19
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002602314
Contact:	ALEX JALDAMEZ
Telephone:	2132299777
Mailing Name:	Not reported
Mailing Address:	225 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.04
Facility County:	Los Angeles

Year:	2004
Gepaid:	CAC002589161
Contact:	ARRON WINSTANLEY
Telephone:	2138045788
Mailing Name:	Not reported
Mailing Address:	225 S OLIVE ST

MUSEUM TOWERS (Continued) **S108214518**

Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAD982042475
TSD County: Solano
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.84
Facility County: Not reported

BU813 **GRAND TOWERS** **HAZNET** **S108208124**
NE **225 S OLIVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.054 mi.
285 ft. **Site 2 of 10 in cluster BU**

Relative:
Higher

Actual:
374 ft.

HAZNET:

Year: 2010
Gepaid: CAC002651563
Contact: SUZANNE PARDON
Telephone: 3239979160
Mailing Name: Not reported
Mailing Address: 123 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900122469
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 0.075
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002651563
Contact: SUZANNE PARDON
Telephone: 3239979160
Mailing Name: Not reported
Mailing Address: 123 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 900122469
Gen County: Not reported
TSD EPA ID: CAD097030993
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 0.075
Facility County: Los Angeles

Year: 2004
Gepaid: CAC002577894
Contact: SUSAN PARDON/SUPERVSR
Telephone: 2136878440
Mailing Name: Not reported
Mailing Address: 123 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles

GRAND TOWERS (Continued) **S108208124**

Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Not reported
Tons: 0.02
Facility County: Not reported

BT814
NNW
< 1/8
0.055 mi.
290 ft.

HEUSCHKEL THEO
910 W 8TH ST
LOS ANGELES, CA

Site 2 of 5 in cluster BT

EDR Historical Auto Stations **1009078667** **N/A**

Relative: **Higher**

Actual: **255 ft.**

EDR Historical Auto Stations:
Name: HEUSCHKEL THEO
Year: 1929
Type: GASOLINE AND OIL SERVICE STATION

BM815
WSW
< 1/8
0.056 mi.
295 ft.

THOMPSON C J
1145 S FLOWER ST
LOS ANGELES, CA

Site 3 of 6 in cluster BM

EDR Historical Auto Stations **1009083907** **N/A**

Relative: **Lower**

Actual: **244 ft.**

EDR Historical Auto Stations:
Name: THOMPSON C J
Year: 1942
Type: GASOLINE AND OIL SERVICE STATIONS

816
WSW
< 1/8
0.056 mi.
298 ft.

STANDARD AUTO SERVICE CO
1144 S HOPE ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009080005** **N/A**

Relative: **Lower**

Actual: **244 ft.**

EDR Historical Auto Stations:
Name: KINNEY W J
Year: 1924
Type: AUTOMOBILE REPAIRING

Name: STANDARD AUTO SERVICE CO
Year: 1929
Type: AUTOMOBILE REPAIRING AND SERVICE STATIONS

BV817
South
< 1/8
0.057 mi.
299 ft.

11TH & MAIN PARTNERS LLC
1100-1132 S MAIN ST
LOS ANGELES, CA 90015

Site 1 of 4 in cluster BV

HAZNET **S108741357** **N/A**

Relative: **Lower**

Actual: **242 ft.**

HAZNET:
Year: 2006
Gepaid: CAC002608498
Contact: DARRIN NICKERSON/PARTNER
Telephone: 2133629300

11TH & MAIN PARTNERS LLC (Continued) **S108741357**

Mailing Name:	Not reported
Mailing Address:	515 S FIGUEROA ST STE 1600
Mailing City,St,Zip:	LOS ANGELES, CA 900713337
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	H-1
Tons:	8.42
Facility County:	Los Angeles

BV818
South
< 1/8
0.057 mi.
299 ft.

LAX C INC
1100 S MAIN ST
LOS ANGELES, CA 90015

Site 2 of 4 in cluster BV

HAZNET **S108211955**
N/A

Relative:
Lower

Actual:
242 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002579530
Contact:	NID SANGSRI
Telephone:	3233439000
Mailing Name:	Not reported
Mailing Address:	1100 S MAIN ST
Mailing City,St,Zip:	LOS ANGELES, CA 900152541
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Oil/water separation sludge
Disposal Method:	Not reported
Tons:	2.33
Facility County:	Not reported

BJ819
North
< 1/8
0.057 mi.
299 ft.

1X HINOMARU INTERNATIONAL CORP
835 WILSHIRE
LOS ANGELES, CA 90016

Site 5 of 10 in cluster BJ

HAZNET **S100850989**
N/A

Relative:
Higher

Actual:
283 ft.

HAZNET:

Year:	2006
Gepaid:	CAC000862128
Contact:	KOICHI MOTEJI
Telephone:	2136220067
Mailing Name:	Not reported
Mailing Address:	835 WILSHIRE
Mailing City,St,Zip:	LOS ANGELES, CA 900160000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	0.42
Facility County:	Los Angeles

Year:	1994

1X HINOMARU INTERNATIONAL CORP (Continued) **S100850989**

Gepaid:	CAC000862128
Contact:	HINOMARU INTERNATIONAL CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	835 WILSHIRE
Mailing City,St,Zip:	LOS ANGELES, CA 900160000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.8428
Facility County:	Los Angeles

BJ820
North
< 1/8
0.057 mi.
301 ft.

LA WILSHIRE CORP
811 WILSHIRE
LOS ANGELES, CA 90014

Site 6 of 10 in cluster BJ

HAZNET **S103974057**
N/A

Relative:
Higher

Actual:
281 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001421368
Contact:	LA WILSHIRE CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	811 WILSHIRE
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Recycler
Tons:	.6046
Facility County:	Los Angeles

BS821
NE
< 1/8
0.058 mi.
305 ft.

MALL PHASE I
140 N GRAND AVE
LOS ANGELES, CA 90063

Site 6 of 12 in cluster BS

HIST UST **U001562333**
HAZNET **N/A**

Relative:
Higher

Actual:
392 ft.

HIST UST:

Region:	STATE
Facility ID:	00000020719
Facility Type:	Other
Other Type:	COUNTY
Total Tanks:	0005
Contact Name:	L.A. COUNTY MECHANICAL DEPARTM
Telephone:	2132672242
Owner Name:	LOS ANGELES COUNTY MECHANICAL
Owner Address:	1100 N. EASTERN AVE.
Owner City,St,Zip:	LOS ANGELES, CA 90063
Tank Num:	001
Container Num:	#1

MALL PHASE I (Continued) **U001562333**

Year Installed: Not reported
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: WASTE OIL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: #2
Year Installed: Not reported
Tank Capacity: 00007000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: #3
Year Installed: Not reported
Tank Capacity: 00003000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: #4
Year Installed: 1981
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: #5
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

HAZNET:
Year: 2010
Gepaid: CAC002655401
Contact: DOUGLAS LOCKLAIR
Telephone: 3232672490
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900633200
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)

MALL PHASE I (Continued) **U001562333**

Tons: 0.8428
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002655401
Contact: DOUGLAS LOCKLAIR
Telephone: 3232672490
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900633200
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Tank bottom waste
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 2.085
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002655401
Contact: DOUGLAS LOCKLAIR
Telephone: 3232672490
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900633200
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 3.6
Facility County: Los Angeles

BS822 **L.A. COUNTY FACILITY (PARKING)** **UST** **U003780560**
NE **140 N GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.058 mi.
305 ft. **Site 7 of 12 in cluster BS**

Relative:
Higher

Actual:
392 ft.

UST:
Facility ID: 24123
Latitude: 34.05631
Longitude: -118.24837

BS823 **JOHNSON CONTROLS/HALL OF ADMIN GARAGE** **HAZNET** **S108210534**
NE **140 N GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.058 mi.
305 ft. **Site 8 of 12 in cluster BS**

Relative:
Higher

Actual:
392 ft.

HAZNET:
Year: 2005
Gepaid: CAL000276700
Contact: YEVETTE LOUIE

JOHNSON CONTROLS/HALL OF ADMIN GARAGE (Continued) **S108210534**

Telephone: 3232672092
Mailing Name: Not reported
Mailing Address: PO BOX 477
Mailing City,St,Zip: MONTEREY PARK, CA 91754
Gen County: Los Angeles
TSD EPA ID: CAT000613935
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0.06
Facility County: Not reported

Year: 2004
Gepaid: CAL000276700
Contact: YEVETTE LOUIE
Telephone: 3232672092
Mailing Name: Not reported
Mailing Address: PO BOX 477
Mailing City,St,Zip: MONTEREY PARK, CA 91754
Gen County: Los Angeles
TSD EPA ID: CAT000613935
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0.06
Facility County: Not reported

BS824 **PARKING COMPANY OF AMERICA MANAGEMENT LL** **LOS ANGELES CO. HMS** **S102055699**
NE **140 N GRAND AVE** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.058 mi.
305 ft. **Site 9 of 12 in cluster BS**

Relative:
Higher

Actual:
392 ft.

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 012684-012855
Facility Type: Not reported
Facility Status: OPEN
Area: 3F
Permit Number: Not reported
Permit Status: Not reported

HAZNET:
Year: 2002
Gepaid: CAL000188342
Contact: CECILIA SILVA
Telephone: 5628622118
Mailing Name: Not reported
Mailing Address: 11101 LAKEWOOD BLVD
Mailing City,St,Zip: DOWNEY, CA 902410000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Treatment, Tank
Tons: 0.22
Facility County: Not reported

BS825 **MPR FLEET SERVICES INC** **HAZNET** **S103978554**
NE **140 NORTH GRAND AVENUE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.058 mi.
305 ft. **Site 10 of 12 in cluster BS**

Relative:
Higher

Actual:
392 ft.

HAZNET:

Year:	2002
Gepaid:	CAL922865485
Contact:	RON VAN ARSDALL
Telephone:	2132672371
Mailing Name:	Not reported
Mailing Address:	532 MONTEREY PASS RD
Mailing City,St,Zip:	MONTEREY PARK, CA 917542417
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	2.91
Facility County:	Not reported

Year:	2000
Gepaid:	CAL922865485
Contact:	FRED BALDERRAMA
Telephone:	8182846472
Mailing Name:	Not reported
Mailing Address:	PO BOX 1867
Mailing City,St,Zip:	MONTEREY PARK, CA 917548867
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	.2085
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL922865485
Contact:	FRED BALDERRAMA
Telephone:	8182846472
Mailing Name:	Not reported
Mailing Address:	PO BOX 1867
Mailing City,St,Zip:	MONTEREY PARK, CA 917548867
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	0.6671
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL922865485
Contact:	FRED BALDERRAMA
Telephone:	8182846472
Mailing Name:	Not reported
Mailing Address:	PO BOX 1867
Mailing City,St,Zip:	MONTEREY PARK, CA 917548867

MPR FLEET SERVICES INC (Continued) **S103978554**

Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL922865485
Contact:	FRED BALDERRAMA
Telephone:	8182846472
Mailing Name:	Not reported
Mailing Address:	PO BOX 1867
Mailing City,St,Zip:	MONTEREY PARK, CA 917548867
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	.2085
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

BS826 **NE** **< 1/8** **0.058 mi.** **305 ft.**	**AUTO PARK #18/LACO F.M.D.** **140 N GRAND AVE** **L.A., CA 90012** **Site 11 of 12 in cluster BS**	**CA FID UST** **SWEEPS UST**	**S101584743** **N/A**

Relative:
Higher

Actual:
392 ft.

CA FID UST:

Facility ID:	19015132
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132672242
Mail To:	Not reported
Mailing Address:	140 N GRAND AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	L.A. 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	5896
Number:	5
Board Of Equalization:	Not reported
Ref Date:	03-09-93

AUTO PARK #18/LACO F.M.D. (Continued) **S101584743**

Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BW827 **LEE TONG** **EDR Historical Cleaners** **1009193473**
SW **1146 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.058 mi.
306 ft. **Site 1 of 3 in cluster BW**

Relative: **Lower**

Actual: **245 ft.**

EDR Historical Cleaners:

Name:	LEE TONG
Year:	1942
Type:	LAUNDRIES ORIENTAL

BM828 **MC KENNA E J** **EDR Historical Auto Stations** **1009081733**
WSW **1147 S FLOWER ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.058 mi.
308 ft. **Site 4 of 6 in cluster BM**

Relative: **Lower**

Actual: **244 ft.**

EDR Historical Auto Stations:

Name:	MC KENNA E J
Year:	1937
Type:	AUTOMOBILE REPAIRING

BR829 **YEMEN M H** **EDR Historical Cleaners** **1009189879**
NNE **605 S HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.058 mi.
308 ft. **Site 3 of 20 in cluster BR**

Relative: **Higher**

Actual: **274 ft.**

EDR Historical Cleaners:

Name:	YEMEN M H
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	YEMEN M H
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	YEMEN M H
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

BX830 **SCHERER S A** **EDR Historical Auto Stations** **1009078758**
SSW **1148 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.059 mi.
310 ft. **Site 1 of 10 in cluster BX**

Relative:
Lower

Actual:
245 ft.

EDR Historical Auto Stations:

Name:	SCHERER S A
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

BU831 **THE ANGELUS PLAZA** **HAZNET** **S108756311**
NE **220 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.059 mi.
310 ft. **Site 3 of 10 in cluster BU**

Relative:
Higher

Actual:
375 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002610731
Contact:	ROMMEL JIMENEA/ENG
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	0.2
Facility County:	Los Angeles

BG832 **MUSEUM OF CONTEMPORARY ARTS** **HAZNET** **S103978710**
NE **250 SOUTH GRAND AVENUE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.059 mi.
310 ft. **Site 7 of 7 in cluster BG**

Relative:
Higher

Actual:
405 ft.

HAZNET:

Year:	1995
Gepaid:	CAC000725080
Contact:	NON PROFIT ORGANIZATION
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	250 SOUTH GRAND AVENUE
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Contaminated soil from site clean-up
Disposal Method:	Disposal, Land Fill
Tons:	1.6054
Facility County:	Los Angeles

BR833 | **DOWN TOWN PROP LLC** | **HAZNET** | **S103961223**
NNE | **611 WILSHIRE_BLVD** | | **N/A**
< 1/8 | **LOS ANGELES, CA 90017**
0.059 mi.
311 ft. | **Site 4 of 20 in cluster BR**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	1998
Gepaid:	CAC001368056
Contact:	DOWN TOWN PROP LLC
Telephone:	2136235800
Mailing Name:	Not reported
Mailing Address:	818 W 7TH ST_STE 980
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.6321
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAC001368056
Contact:	DOWN TOWN PROP LLC
Telephone:	2136235800
Mailing Name:	Not reported
Mailing Address:	818 W 7TH ST_STE 980
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	37.9260
Facility County:	Los Angeles

BY834 | **LOS ANGELES TIMES - LOS ANGELES** | **RCRA-SQG** | **1000102051**
NE | **202 W. 1ST ST.** | **HAZNET** | **CAD980896229**
< 1/8 | **LOS ANGELES, CA 90012**
0.059 mi.
313 ft. | **Site 1 of 7 in cluster BY**

Relative: Higher

Actual: 299 ft.

RCRA-SQG:

Date form received by agency:	03/26/2002
Facility name:	LOS ANGELES TIMES - LOS ANGELES
Facility address:	202 W. 1ST ST. LOS ANGELES, CA 90012
EPA ID:	CAD980896229
Contact:	MARY ELLEN VOJTEK
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(213) 237-5014
Contact email:	Not reported
EPA Region:	09
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of

LOS ANGELES TIMES - LOS ANGELES (Continued) **1000102051**

hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency: 03/26/2002
Facility name: LOS ANGELES TIMES - LOS ANGELES
Classification: Large Quantity Generator

Date form received by agency: 10/12/2000
Facility name: LOS ANGELES TIMES - LOS ANGELES
Site name: L A TIMES TIMES MIRROR SQUARE FACILITY
Classification: Large Quantity Generator

Date form received by agency: 08/15/2000
Facility name: LOS ANGELES TIMES - LOS ANGELES
Site name: LOS ANGELES TIMES COMMUNICATIONS L L C
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Facility name: LOS ANGELES TIMES - LOS ANGELES
Site name: LOS ANGELES TIMES
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: LOS ANGELES TIMES - LOS ANGELES
Site name: LOS ANGELES TIMES COMMUNICATIONS L L C
Classification: Small Quantity Generator

Date form received by agency: 04/03/1991
Facility name: LOS ANGELES TIMES - LOS ANGELES
Site name: LOS ANGELES TIMES
Classification: Large Quantity Generator

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 11/15/2006
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

LOS ANGELES TIMES - LOS ANGELES (Continued) **1000102051**

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

HAZNET:

Year: 2009
Gepaid: CAD980896229
Contact: EMERSON LEGO/ENVT'L ENGINEER
Telephone: 2132373040
Mailing Name: Not reported
Mailing Address: 202 WEST 1ST ST 6TH FLR SAFETY
Mailing City,St,Zip: LOS ANGELES, CA 900123816
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0025
Facility County: Los Angeles

Year: 2009
Gepaid: CAD980896229
Contact: EMERSON LEGO/ENVT'L ENGINEER
Telephone: 2132373040
Mailing Name: Not reported
Mailing Address: 202 WEST 1ST ST 6TH FLR SAFETY
Mailing City,St,Zip: LOS ANGELES, CA 900123816
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.0325
Facility County: Los Angeles

Year: 2009
Gepaid: CAD980896229
Contact: EMERSON LEGO/ENVT'L ENGINEER
Telephone: 2132373040
Mailing Name: Not reported
Mailing Address: 202 WEST 1ST ST 6TH FLR SAFETY
Mailing City,St,Zip: LOS ANGELES, CA 900123816
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Latex waste
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.27101
Facility County: Los Angeles

Year: 2008
Gepaid: CAD980896229
Contact: EMERSON LEGO/ENVT'L ENGINEER
Telephone: 2132373040
Mailing Name: 1ST FL

LOS ANGELES TIMES - LOS ANGELES (Continued) **1000102051**

Mailing Address:	202 WEST 1ST ST 6TH FLR SAFETY
Mailing City,St,Zip:	LOS ANGELES, CA 900123816
Gen County:	Los Angeles
TSD EPA ID:	AZ0000337360
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	0.2755
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAD980896229
Contact:	EMERSON LEGO/ENVT'L ENGINEER
Telephone:	2132373040
Mailing Name:	1ST FL
Mailing Address:	202 WEST 1ST ST 6TH FLR SAFETY
Mailing City,St,Zip:	LOS ANGELES, CA 900123816
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.561
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
242 additional CA_HAZNET: record(s) in the EDR Site Report.

BY835 **LOS ANGELES TIMES - TIMES MIRROR** **HAZNET** **S103642567**
NE **220 W 1ST ST** **N/A**
< 1/8 **LOS ANGELES, CA 90053**
0.059 mi.
313 ft. **Site 2 of 7 in cluster BY**

Relative:
Higher

Actual:
299 ft.

HAZNET:

Year:	2000
Gepaid:	CAD008382400
Contact:	LOS ANGELES TIMES
Telephone:	2132375014
Mailing Name:	Not reported
Mailing Address:	145 S SPRING ST ADM SERVICES
Mailing City,St,Zip:	LOS ANGELES, CA 900534105
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	409.6008
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAD008382400
Contact:	LOS ANGELES TIMES
Telephone:	2132375014
Mailing Name:	Not reported
Mailing Address:	145 S SPRING ST ADM SERVICES
Mailing City,St,Zip:	LOS ANGELES, CA 900534105

LOS ANGELES TIMES - TIMES MIRROR (Continued) **S103642567**

Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	290.766
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD008382400
Contact:	LOS ANGELES TIMES
Telephone:	2132375014
Mailing Name:	Not reported
Mailing Address:	145 S SPRING ST ADM SERVICES
Mailing City,St,Zip:	LOS ANGELES, CA 900534105
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	982.7048
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD008382400
Contact:	LOS ANGELES TIMES
Telephone:	2132375014
Mailing Name:	Not reported
Mailing Address:	145 S SPRING ST ADM SERVICES
Mailing City,St,Zip:	LOS ANGELES, CA 900534105
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other organic solids
Disposal Method:	Treatment, Tank
Tons:	25.2840
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAD008382400
Contact:	LOS ANGELES TIMES
Telephone:	2132375014
Mailing Name:	Not reported
Mailing Address:	145 S SPRING ST ADM SERVICES
Mailing City,St,Zip:	LOS ANGELES, CA 900534105
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	337.1200
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

BK836 **COLUMN CAPITAL LLC** **HAZNET** **S109425198**
ENE **501 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.059 mi.
314 ft. **Site 28 of 34 in cluster BK**

Relative:
Higher

Actual:
266 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002613129
Contact:	JOE SERBIN/REP
Telephone:	6264472448
Mailing Name:	Not reported
Mailing Address:	2660 EASTCHASE LN FL 4
Mailing City,St,Zip:	MONTGOMERY, AL 361177025
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002613129
Contact:	JOE SERBIN/REP
Telephone:	6264472448
Mailing Name:	Not reported
Mailing Address:	2660 EASTCHASE LN FL 4
Mailing City,St,Zip:	MONTGOMERY, AL 361177025
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.7
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002613129
Contact:	JOE SERBIN/REP
Telephone:	6264472448
Mailing Name:	Not reported
Mailing Address:	2660 EASTCHASE LN FL 4
Mailing City,St,Zip:	MONTGOMERY, AL 361177025
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	15.6
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAC002613129
Contact:	JOE SERBIN/REP
Telephone:	6264472448

COLUMN CAPITAL LLC (Continued) **S109425198**

Mailing Name:	Not reported
Mailing Address:	2660 EASTCHASE LN FL 4
Mailing City,St,Zip:	MONTGOMERY, AL 361177025
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	14
Facility County:	Los Angeles

BZ837
North
< 1/8
0.060 mi.
316 ft.

1X SUMITOMO LIFE REALTY (N Y)
800 WILSHIRE BLVD
LOS ANGELES, CA 90010

HAZNET **S100580669**
N/A

Site 1 of 9 in cluster BZ

Relative:
Higher

Actual:
280 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002626116
Contact:	JUNE BUTLER
Telephone:	2136275626
Mailing Name:	Not reported
Mailing Address:	800 WILSHIRE BLVD STE 1425
Mailing City,St,Zip:	LOS ANGELES, CA 900172623
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.2
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000213753
Contact:	TONY ICHINOSE
Telephone:	9166460760
Mailing Name:	STEPHAN DYER
Mailing Address:	800 WILSHIRE BLVD STE 330
Mailing City,St,Zip:	LOS ANGELES, CA 900172611
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAD000325571
Contact:	ED BONNETT PROJECT MANAGER
Telephone:	2133828211
Mailing Name:	Not reported
Mailing Address:	800 WILSHIRE BLVD STE 520
Mailing City,St,Zip:	LOS ANGELES, CA 900172611
Gen County:	Los Angeles

1X SUMITOMO LIFE REALTY (N Y) (Continued) **S100580669**

TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.67
Facility County: Los Angeles

Year: 2002
Gepaid: CAD000325571
Contact: ED BONNETT PROJECT MANAGER
Telephone: 2133828211
Mailing Name: Not reported
Mailing Address: 800 WILSHIRE BLVD STE 520
Mailing City,St,Zip: LOS ANGELES, CA 900172611
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 94.38
Facility County: Not reported

Year: 2001
Gepaid: CAL000213753
Contact: R WALTERS/SR CONSTRUCTION MGR
Telephone: 9166460760
Mailing Name: Not reported
Mailing Address: 800 WILSHIRE BLVD SUITE 330
Mailing City,St,Zip: LOS ANGELES, CA 900172611
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 1.93
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
9 additional CA_HAZNET: record(s) in the EDR Site Report.

BZ838 **S W C 800 WILSHIRE LLC** **HAZNET** **S108219093**
North **800 WILSHIRE BLVD STE 1425** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.060 mi.
316 ft. **Site 2 of 9 in cluster BZ**

Relative:
Higher

Actual:
280 ft.

HAZNET:
Year: 2007
Gepaid: CAC002615296
Contact: JUNE BUTLER
Telephone: 2134866500
Mailing Name: Not reported
Mailing Address: 800 WILSHIRE BLVD STE 1425
Mailing City,St,Zip: LOS ANGELES, CA 900172623
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste

S W C 800 WILSHIRE LLC (Continued) **S108219093**

Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.6
Facility County:	Los Angeles
Year:	2004
Gepaid:	CAC002582478
Contact:	BEATRICE HSI/PROPERTY MGR
Telephone:	2136275626
Mailing Name:	Not reported
Mailing Address:	800 WILSHIRE BLVD STE 1425
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	16.85
Facility County:	Not reported

BZ839
North
< 1/8
0.060 mi.
317 ft.

EQUITABLE PROPERTIES
615 S FLOWER ST
LOS ANGELES, CA 90017

CA FID UST **S101584497**
SWEEPS UST **N/A**

Site 3 of 9 in cluster BZ

Relative:
Higher

Actual:
280 ft.

CA FID UST:

Facility ID:	19012051
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	615 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6570
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported

EQUITABLE PROPERTIES (Continued) **S101584497**

Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

BZ840 **1X INTER GEN ASSOC. LTD PARTNERSHIP** **HAZNET** **S102791686**
North **615 S. FLOWER STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.060 mi.
317 ft. **Site 4 of 9 in cluster BZ**

Relative:
Higher

Actual:
280 ft.

HAZNET:

Year: 1995
Gepaid: CAC000277273
Contact: INTER GEN ASSOC. - LTD PART.
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 811 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900172606
Gen County: Los Angeles
TSD EPA ID: CAD000633164
TSD County: Imperial
Waste Category: Other inorganic solid waste
Disposal Method: Treatment, Tank
Tons: 202.2720
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000277273
Contact: INTER GEN ASSOC. - LTD PART.
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 811 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900172606
Gen County: Los Angeles
TSD EPA ID: CAT080011059
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Recycler
Tons: .1251
Facility County: Los Angeles

Year: 1995
Gepaid: CAC000277273
Contact: INTER GEN ASSOC. - LTD PART.
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 811 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900172606
Gen County: Los Angeles
TSD EPA ID: UTD991301748
TSD County: 99
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Transfer Station
Tons: 2.1819
Facility County: Los Angeles

BW841 **WHITLEY JAS** **EDR Historical Auto Stations** **1009081492**
SW **1148 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.060 mi.
318 ft. **Site 2 of 3 in cluster BW**

Relative:
Lower

Actual:
245 ft.

EDR Historical Auto Stations:
Name: WHITLEY JAS
Year: 1933
Type: AUTOMOBILE REPAIRING

BZ842 **LOS ANGELES COMMUNITY COLLEGE DISTRICT EDUCATIONAL SERVICES** **HAZNET** **S108212518**
North **770 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.060 mi.
318 ft. **Site 5 of 9 in cluster BZ**

Relative:
Higher

Actual:
278 ft.

HAZNET:
Year: 2010
Gepaid: CAL000291273
Contact: DAVID MARTIN
Telephone: 2138912422
Mailing Name: Not reported
Mailing Address: 770 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: CAD008252405
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.016
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000291273
Contact: DAVID MARTIN
Telephone: 2138912422
Mailing Name: Not reported
Mailing Address: 770 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0415
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000291273
Contact: DAVID MARTIN
Telephone: 2138912422
Mailing Name: Not reported
Mailing Address: 770 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: CAD009007626
TSD County: Not reported
Waste Category: Asbestos containing waste

LOS ANGELES COMMUNITY COLLEGE DISTRICT EDUCATIONAL SERVICES (Continued) **S108212518**

Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 3.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000291273
Contact: DAVID MARTIN
Telephone: 2138912422
Mailing Name: Not reported
Mailing Address: 770 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: CAD008252405
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.007
Facility County: Los Angeles

Year: 2006
Gepaid: CAL000291273
Contact: DAVID MARTIN
Telephone: 2138912422
Mailing Name: Not reported
Mailing Address: 770 WILSHIRE BLVD
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: AZ0000337360
TSD County: 99
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Not reported
Tons: 0.07
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BZ843 **300 PROSPECT PROPERTIES, INC** **HAZNET** **S107139916**
North **770 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.060 mi.
318 ft. **Site 6 of 9 in cluster BZ**

Relative:
Higher

Actual:
278 ft.

HAZNET:
Year: 2003
Gepaid: CAC002561658
Contact: RIVER KORN
Telephone: 2132706295
Mailing Name: CHARLES DUNN REAL ESTATE SERVICES
Mailing Address: 800 W SIXTH ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Transfer Station

300 PROSPECT PROPERTIES, INC (Continued) **S107139916**

Tons: 0.1
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002561658
Contact: RIVER KORN
Telephone: 2132706295
Mailing Name: CHARLES DUNN REAL ESTATE SERVICES
Mailing Address: 800 W SIXTH ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Recycler
Tons: 0.75
Facility County: Los Angeles

CA844 **WONG LANNY** **EDR Historical Cleaners** **1009189696**
NNW **941 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.061 mi.
321 ft. **Site 1 of 2 in cluster CA**

Relative: Higher

Actual: 293 ft.

EDR Historical Cleaners:
Name: YOUNG SHING
Year: 1933
Type: LAUNDRIES CHINESE

Name: WONG LANNY
Year: 1937
Type: LAUNDRIES CHINESE

Name: WONG LANNY
Year: 1942
Type: LAUNDRIES ORIENTAL

BX845 **TRANSAMERICA CENTER** **HAZNET** **S108223104**
SSW **1150 S OLIVE ST STE T-1100** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 2 of 10 in cluster BX**

Relative: Lower

Actual: 245 ft.

HAZNET:
Year: 2004
Gepaid: CAL000282656
Contact: TIM PRICE
Telephone: 2137416586
Mailing Name: Not reported
Mailing Address: 1149 SOUTH HILL ST STE-300
Mailing City,St,Zip: LOS ANGELES, CA 90015
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Transfer Station

TRANSAMERICA CENTER (Continued) **S108223104**

Tons: 0.02
Facility County: Not reported

BX846 **SBC TOWER** **HAZNET** **S108754726**
SSW **1150 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 3 of 10 in cluster BX**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000295652
Contact:	TIMOTHY RICE
Telephone:	2137417437
Mailing Name:	Not reported
Mailing Address:	1149 S HILL ST STE H-300
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	CAD009007626
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	2
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000295652
Contact:	TIMOTHY RICE
Telephone:	2137417437
Mailing Name:	Not reported
Mailing Address:	1149 S HILL ST STE H-300
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	CAD009007626
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAL000295652
Contact:	TIMOTHY RICE
Telephone:	2137417437
Mailing Name:	Not reported
Mailing Address:	1149 S HILL ST STE H-300
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Tank bottom waste
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.1251
Facility County:	Los Angeles

SBC TOWER (Continued) **S108754726**

Year: 2009
Gepaid: CAL000295652
Contact: TIMOTHY RICE
Telephone: 2137417437
Mailing Name: Not reported
Mailing Address: 1149 S HILL ST STE H-300
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 23.6
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000295652
Contact: TIMOTHY RICE
Telephone: 2137417437
Mailing Name: Not reported
Mailing Address: 1149 S HILL ST STE H-300
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.705
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
8 additional CA_HAZNET: record(s) in the EDR Site Report.

BX847 **MANGING ANGENT** **HAZNET** **S108213084**
SSW **1150 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 4 of 10 in cluster BX**

Relative:
Lower

Actual:
245 ft.

HAZNET:
Year: 2004
Gepaid: CAC002573240
Contact: GEORGE LESKO
Telephone: 2137416586
Mailing Name: Not reported
Mailing Address: 1150 S OLIVE ST SUITE 1100
Mailing City,St,Zip: LOS ANGELES, CA 900152211
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 8.42
Facility County: Not reported

BX848 **LBA REALTY** **HAZNET** **S108211973**
SSW **1150 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 5 of 10 in cluster BX**

Relative: **Lower**

Actual: **245 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002589732
Contact:	TIM RICE
Telephone:	2137417437
Mailing Name:	Not reported
Mailing Address:	1149 S HILL ST STE H300
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.93
Facility County:	Not reported

BX849 **CANYON JOHNSON URBAN FUND (FUND) NEW PACIFIC EALITY LLC** **HAZNET** **S108200750**
SSW **1150 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 6 of 10 in cluster BX**

Relative: **Lower**

Actual: **245 ft.**

HAZNET:

Year:	2004
Gepaid:	CAC002579654
Contact:	TIM RICE/CHIEF ENG
Telephone:	2137416586
Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	26.96
Facility County:	Not reported

BX850 **TRANSAMERICA CENTER** **HAZNET** **S103624166**
SSW **1150 SOUTH OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.061 mi.
322 ft. **Site 7 of 10 in cluster BX**

Relative: **Lower**

Actual: **245 ft.**

HAZNET:

Year:	2003
Gepaid:	CAD981394711
Contact:	ERIK SUMMERS
Telephone:	2137422708
Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip:	LOS ANGELES, CA 900152211

TRANSAMERICA CENTER (Continued) **S103624166**

Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 25.28
Facility County: Los Angeles

Year: 2002
Gepaid: CAD981394711
Contact: HARRY LAWRIE
Telephone: 2137416586
Mailing Name: Not reported
Mailing Address: 1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip: LOS ANGELES, CA 900152211
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 216.97
Facility County: Not reported

Year: 2001
Gepaid: CAD981394711
Contact: HARRY LAWRIE
Telephone: 2137416586
Mailing Name: Not reported
Mailing Address: 1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip: LOS ANGELES, CA 900152211
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Recycler
Tons: 0.08
Facility County: Not reported

Year: 2001
Gepaid: CAD981394711
Contact: HARRY LAWRIE
Telephone: 2137416586
Mailing Name: Not reported
Mailing Address: 1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip: LOS ANGELES, CA 900152211
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.31
Facility County: Not reported

Year: 2001
Gepaid: CAD981394711
Contact: HARRY LAWRIE
Telephone: 2137416586

TRANSAMERICA CENTER (Continued) **S103624166**

Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip:	LOS ANGELES, CA 900152211
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Latex waste
Disposal Method:	Recycler
Tons:	0.06
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
93 additional CA_HAZNET: record(s) in the EDR Site Report.

BX851 **TRANSAMERICA OCCIDENTAL** **CA FID UST** **S101585150**
SSW **1150 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90015** **EMI**
0.061 mi.
322 ft. **Site 8 of 10 in cluster BX**

Relative:
Lower

Actual:
245 ft.

CA FID UST:

Facility ID:	19020393
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2137422671
Mail To:	Not reported
Mailing Address:	1150 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	5211
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-05-93
Act Date:	04-05-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

TRANSAMERICA OCCIDENTAL (Continued) **S101585150**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	74186
Air District Name:	SC
SIC Code:	6311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	74186
Air District Name:	SC
SIC Code:	6311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BJ852 **North** **< 1/8** **0.061 mi.** **323 ft.**	**811 WILSHIRE LLC** **811 WILSHIRE BLVD** **LOS ANGELES, CA 90017** **Site 7 of 10 in cluster BJ**	**FINDS**	**1011397942** **N/A**

Relative: **Higher**

Actual: **281 ft.**

FINDS:

Registry ID: 110035442081

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BJ853 **811 WILSHIRE LLC** **HAZNET** **S108741520**
North **811 WILSHIRE BLVD** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
323 ft. **Site 8 of 10 in cluster BJ**

Relative: Higher

Actual: 281 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002638179
Contact:	GABRIEL MURILLO
Telephone:	2139992284
Mailing Name:	Not reported
Mailing Address:	915 WILSHIRE BLVD RM 810
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	6.8
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000191007
Contact:	NORMAN LEE EXT 2001
Telephone:	2134610021
Mailing Name:	Not reported
Mailing Address:	811 WILSHIRE BLVD STE 1700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.35
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000191007
Contact:	NORMAN LEE EXT 2001
Telephone:	2134610021
Mailing Name:	Not reported
Mailing Address:	811 WILSHIRE BLVD STE 1700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.075
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000191007
Contact:	NORMAN LEE EXT 2001
Telephone:	2134610021
Mailing Name:	Not reported

811 WILSHIRE LLC (Continued) **S108741520**

Mailing Address:	811 WILSHIRE BLVD STE 1700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.08
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000191007
Contact:	NORMAN LEE EXT 2001
Telephone:	2134610021
Mailing Name:	Not reported
Mailing Address:	811 WILSHIRE BLVD STE 1700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008488025
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.4587
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	139318
Air District Name:	SC
SIC Code:	4961
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0107129489614208715
Reactive Organic Gases Tons/Yr:	.007
Carbon Monoxide Emissions Tons/Yr:	.042
NOX - Oxides of Nitrogen Tons/Yr:	.099
SOX - Oxides of Sulphur Tons/Yr:	.001
Particulate Matter Tons/Yr:	.008
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.008

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	139318
Air District Name:	SC
SIC Code:	4961
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

811 WILSHIRE LLC (Continued) **S108741520**

Total Organic Hydrocarbon Gases Tons/Yr:	.0107129489614208715
Reactive Organic Gases Tons/Yr:	.007
Carbon Monoxide Emissions Tons/Yr:	.042
NOX - Oxides of Nitrogen Tons/Yr:	.099
SOX - Oxides of Sulphur Tons/Yr:	.001
Particulate Matter Tons/Yr:	.008
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.008

BJ854 **811 WILSHIRE LLC** **RCRA-SQG** **1010783753**
North **811 WILSHIRE BLVD** **CAR000191007**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
323 ft. **Site 9 of 10 in cluster BJ**

Relative:
Higher

Actual:
281 ft.

RCRA-SQG:

Date form received by agency:	03/21/2008
Facility name:	811 WILSHIRE LLC
Facility address:	811 WILSHIRE BLVD LOS ANGELES, CA 90017
EPA ID:	CAR000191007
Contact:	NORMAN LEE
Contact address:	811 WILSHIRE BLVD STE 1700 LOS ANGELES, CA 90017
Contact country:	US
Contact telephone:	213-461-0021
Telephone ext.:	2001
Contact email:	NORMANLEE@JAMISONSERVICES.COM
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	811 WILSHIRE LLC
Owner/operator address:	811 WILSHIRE BLVD STE 1700 LOS ANGELES, CA 90017
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	10/30/2003
Owner/Op end date:	Not reported
Owner/operator name:	JAMISON SERVICES
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/30/2003
Owner/Op end date:	Not reported

811 WILSHIRE LLC (Continued) **1010783753**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Waste code:	D002
Waste name:	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Waste code:	D006
Waste name:	CADMIUM
Violation Status:	No violations found

BJ855 **INTERGEN ASSOCIATES/TREPTOW** **EMI** **S106833071**
North **811 WILSHIRE, #100** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
323 ft. **Site 10 of 10 in cluster BJ**

Relative:
Higher

Actual:
281 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	79521
Air District Name:	SC
SIC Code:	0
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0

INTERGEN ASSOCIATES/TREPTOW (Continued) **S106833071**

Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BR856 **CALIFORNIA ACADEMY EARLY COLLEGE HIGH SCHOOL** **FINDS** **1011918403**
NNE **700 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
324 ft. **Site 5 of 20 in cluster BR**

Relative:
Higher

Actual:
274 ft.

FINDS:

Registry ID: 110037381311

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BR857 **CALIFORNIA ACADEMY EARLY COLLEGE HIGH SCHOOL** **RCRA-LQG** **1010783830**
NNE **700 WILSHIRE BLVD** **CAR000191940**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
324 ft. **Site 6 of 20 in cluster BR**

Relative:
Higher

Actual:
274 ft.

RCRA-LQG:

Date form received by agency:	04/28/2008
Facility name:	CALIFORNIA ACADEMY EARLY COLLEGE HIGH SCHOOL
Facility address:	700 WILSHIRE BLVD LOS ANGELES, CA 90017
EPA ID:	CAR000191940
Mailing address:	333 S BEAUDRY AVE LOS ANGELES, CA 90017
Contact:	SOE AUNG
Contact address:	333 S BEAUDRY AVE LOS ANGELES, CA 90017
Contact country:	US
Contact telephone:	213-241-3904
Contact email:	SOE.AUNG@LAUSD.NET
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less

CALIFORNIA ACADEMY EARLY COLLEGE HIGH SCHOOL (Continued) **1010783830**

of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CALIFORNIA ACADEMY EARLY COLLEGE
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	District
Owner/Operator Type:	Operator
Owner/Op start date:	04/22/2008
Owner/Op end date:	Not reported

Owner/operator name:	LOS ANGELES UNIFIED SCHOOL DISTRICT
Owner/operator address:	333 S BEAUDRY AVE LOS ANGELES, CA 90017
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	District
Owner/Operator Type:	Owner
Owner/Op start date:	04/22/2008
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD

Violation Status:	No violations found

BR858 **DOWNTOWN PORPERTIES III LLC** **HAZNET** **S103961243**
NNE **700 WILSHIRE BL** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
324 ft. **Site 7 of 20 in cluster BR**

Relative: **Higher**

Actual: **274 ft.**

HAZNET:

Year:	1998
Gepaid:	CAC001271128
Contact:	DOWNTOWN PROPERTIES III LLC
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	818 W 7TH ST STE 980
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	54.7820
Facility County:	Los Angeles

BR859 **CA ACADEMY FOR LIBERAL STUDIES EARLY COLLEGE HIGH** **FINDS** **1011473424**
NNE **700 WILSHIRE BLVD FOURTH FL.** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.061 mi.
324 ft. **Site 8 of 20 in cluster BR**

Relative: **Higher**

Actual: **274 ft.**

FINDS:

Registry ID: 110036097960

Environmental Interest/Information System
NCES (National Center for Education Statistics) is the primary federal entity for collecting and analyzing data related to education in the United States and other nations and the institute of education sciences.

BR860 **NEVER BEEN KISSED** **HAZNET** **S106084803**
NNE **612 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90021**
0.062 mi.
326 ft. **Site 9 of 20 in cluster BR**

Relative: **Higher**

Actual: **271 ft.**

HAZNET:

Year:	2004
Gepaid:	CAC001313376
Contact:	JASON STALK - OWNER
Telephone:	2134659580
Mailing Name:	Not reported
Mailing Address:	612 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900210000
Gen County:	Los Angeles
TSD EPA ID:	CAD982042475
TSD County:	Solano
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill

NEVER BEEN KISSED (Continued) **S106084803**

Tons:	1.68
Facility County:	Not reported
Year:	2003
Gepaid:	CAC001313376
Contact:	JASON STALK - OWNER
Telephone:	2134659580
Mailing Name:	Not reported
Mailing Address:	612 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900210000
Gen County:	Los Angeles
TSD EPA ID:	CAD981382732
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0
Facility County:	Los Angeles
Year:	2003
Gepaid:	CAC001313376
Contact:	JASON STALK - OWNER
Telephone:	2134659580
Mailing Name:	Not reported
Mailing Address:	612 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900210000
Gen County:	Los Angeles
TSD EPA ID:	CAD982042475
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	4.63
Facility County:	Los Angeles
Year:	2002
Gepaid:	CAC001313376
Contact:	JASON STALK - OWNER
Telephone:	2134659580
Mailing Name:	Not reported
Mailing Address:	612 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900210000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Alameda
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	6.09
Facility County:	Not reported

BR861 **LEGACY 600 WILSHIRE ASSOCIATES LLC** **HAZNET** **S109933960**
NNE **600 WILSHIRE BLVD STE 1620** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.062 mi.
328 ft. **Site 10 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000288635
Contact:	ED FITZPATRICK
Telephone:	2136891133
Mailing Name:	Not reported
Mailing Address:	600 WILSHIRE BLVD STE 1620
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

BR862 **WILSHIRE GRAND BUILDING** **EMI** **S106842676**
NNE **600 WILSHIRE BLVD.** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.062 mi.
328 ft. **Site 11 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	67279
Air District Name:	SC
SIC Code:	9111
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	67279
Air District Name:	SC
SIC Code:	9111
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

WILSHIRE GRAND BUILDING (Continued) **S106842676**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

BR863 **600 WILSHIRE PROPERTY LLC** **HAZNET** **S109936149**
NNE **600 WILSHIRE BLVD STE 950** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.062 mi.
328 ft. **Site 12 of 20 in cluster BR**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000336225
Contact:	EDWARD FITZPATRICK
Telephone:	2134889838
Mailing Name:	Not reported
Mailing Address:	600 WILSHIRE BLVD STE 950
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.1
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000336225
Contact:	EDWARD FITZPATRICK
Telephone:	2134889838
Mailing Name:	Not reported
Mailing Address:	600 WILSHIRE BLVD STE 950
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.075
Facility County:	Los Angeles

BR864 **AEW CAPITOL MANAGMENT LLP** **HAZNET** **S106094026**
NNE **600 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.062 mi.
328 ft. **Site 13 of 20 in cluster BR**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000261900
Contact:	ED FITZPATRICK
Telephone:	2136891133
Mailing Name:	600/626 WILSHIRE GRAND, LLC
Mailing Address:	626 WILSHIRE BLVD STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles

AEW CAPITOL MANAGMENT LLP (Continued) **S106094026**

TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Transfer Station
Tons: 0.3
Facility County: Los Angeles

Year: 2002
Gepaid: CAL000261900
Contact: ED FITZPATRICK
Telephone: 2136891133
Mailing Name: Not reported
Mailing Address: 626 WILSHIRE BLVD STE 700
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: Recycler
Tons: 1.04
Facility County: Not reported

BR865
NNE
< 1/8
0.062 mi.
328 ft.

WILSHIRE GRAND BLDG **HAZNET** **S106084830**
600 WILSHIRE BLVD STE 890 **N/A**
LOS ANGELES, CA 90017

Site 14 of 20 in cluster BR

Relative:
Higher

Actual:
271 ft.

HAZNET:
Year: 2002
Gepaid: CAC002172513
Contact: EDWARD FITZPATRICK
Telephone: 2134889838
Mailing Name: Not reported
Mailing Address: 600 WILSHIRE BLVD STE 890
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: Recycler
Tons: 1.56
Facility County: Not reported

CB866
ENE
< 1/8
0.062 mi.
329 ft.

CITY OF L A HOT LINE REFERRAL **LOS ANGELES CO. HMS** **S102055856**
215 W 6TH ST **N/A**
LOS ANGELIS, CA

Site 1 of 8 in cluster CB

Relative:
Higher

Actual:
262 ft.

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 016606-022090
Facility Type: Not reported
Facility Status: OPEN
Area: 3F

CITY OF L A HOT LINE REFERRAL (Continued) **S102055856**

Permit Number: Not reported
Permit Status: Not reported

BS867
NE
< 1/8
0.062 mi.
329 ft.

COUNTY OF LOS ANGELES/ISD
145 N GRAND AVE
LOS ANGELES, CA 90012

LUST **S106087764**
HAZNET **N/A**

Site 12 of 12 in cluster BS

Relative:
Higher

Actual:
393 ft.

LUST:

Region:	STATE
Global Id:	T0603759109
Latitude:	34.056472
Longitude:	-118.248125
Case Type:	LUST Cleanup Site
Status:	Open - Remediation
Status Date:	03/19/1996
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	TP
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	Not reported
LOC Case Number:	XS0001048
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603759109
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

Global Id:	T0603759109
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603759109
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0603759109
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

COUNTY OF LOS ANGELES/ISD (Continued) **S106087764**

HAZNET:

Year:	2002
Gepaid:	CAC002553214
Contact:	BELINDA RAMIREZ
Telephone:	3232673137
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90063
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	San Bernardino
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	0.02
Facility County:	Not reported

Year:	2002
Gepaid:	CAC002553214
Contact:	BELINDA RAMIREZ
Telephone:	3232673137
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90063
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0.01
Facility County:	Not reported

CC868 **FRANK TACAUGH** **HAZNET** **S109928688**
WNW **845 W OLYMPIC BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.062 mi.
329 ft. **Site 1 of 3 in cluster CC**

Relative:
Lower

Actual:
247 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002628889
Contact:	FRANK TACAUGH
Telephone:	3104635133
Mailing Name:	Not reported
Mailing Address:	1285 W JEFFERSON BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900072939
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.2
Facility County:	Los Angeles

CC869 **CHEVRON U.S.A. INC.** **UIC** **S111614566**
West **N/A**
< 1/8 **LOS ANGELES (County), CA**
0.062 mi.
330 ft. **Site 2 of 3 in cluster CC**

Relative: Lower

Actual: 245 ft.

UIC:

API Number:	03706334
Active Well:	N
Well Type:	OG
Well Symbol:	DH
Confidential Well:	Not reported
Well Number:	1
Lease Name:	Salvation Army Corehole
Well Located On A Blw Lease:	N
Field Name:	Any Field
Area Name:	Any Area
Section:	32
Township:	01S
Range:	13W
Base And Meridian; Part Of The PLSS:	SB
Elevation:	Not reported
Location Desc:	Not reported
Latitude:	34.044879999999999
Longitude:	-118.265479
GIS Source Code:	hud
Comments:	Not reported
Operator Code:	C5640
CA County Code:	037
Field Code:	000
Area Code:	00
Total Depth:	0

BW870 **1150 S GRAND AVE** **NPDES** **S109433954**
SW **1150 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.063 mi.
331 ft. **Site 3 of 3 in cluster BW**

Relative: Lower

Actual: 245 ft.

NPDES:

Npdes Number:	CAS000002
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	338220
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C350164
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/26/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	06/28/2010
Discharge Name:	Merco Group Southpark LLC
Discharge Address:	761 Terminal St Bldg 1 Floor 2
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90017

BM871 **CLASSIC PARKTEAM INC** **HAZNET** **S109425103**
WSW **1150 S FLOWER ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.063 mi.
332 ft. **Site 5 of 6 in cluster BM**

Relative:
Lower

Actual:
244 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002623358
Contact:	RICK ULLMAN
Telephone:	2139486446
Mailing Name:	Not reported
Mailing Address:	3208 ROYAL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900073657
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.57
Facility County:	Los Angeles

BM872 **ARCO #5033** **LUST** **S109117550**
WSW **1151 S FLOWER ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.063 mi.
332 ft. **Site 6 of 6 in cluster BM**

Relative:
Lower

Actual:
244 ft.

LUST:

Region:	STATE
Global Id:	T0603708034
Latitude:	34.042115
Longitude:	-118.265642
Case Type:	LUST Cleanup Site
Status:	Open - Verification Monitoring
Status Date:	06/03/1996
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	TP
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	Not reported
LOC Case Number:	XS0001146
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603708034
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported
Global Id:	T0603708034

ARCO #5033 (Continued) **S109117550**

Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0603708034
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0603708034
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

CD873 **OMNI VISION INTERNATIONAL INC** **FINDS** **1014671527**
NNE **707 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.063 mi.
334 ft. **Site 1 of 8 in cluster CD**

Relative: **Higher**

Actual: **275 ft.**

FINDS:

Registry ID: 110042172528

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CD874 **AON CENTER** **CA FID UST** **S101617194**
NNE **707 WILSHIRE BLVD** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **EMI**
0.063 mi.
334 ft. **Site 2 of 8 in cluster CD**

Relative: **Higher**

Actual: **275 ft.**

CA FID UST:

Facility ID:	19006540
Regulated By:	UTNKA
Regulated ID:	00050490
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2135209942
Mail To:	Not reported
Mailing Address:	707 WILSHIRE BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000

AON CENTER (Continued) **S101617194**

Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

HAZNET:
Year: 2010
Gepaid: CAL000309995
Contact: PETER ANASTASSION/G M
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900173720
Gen County: Not reported
TSD EPA ID: AZR000030452
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 1.0425
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000309995
Contact: PETER ANASTASSION/G M
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900173720
Gen County: Not reported
TSD EPA ID: ARD981057870
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.375
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000309995
Contact: PETER ANASTASSION/G M
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900173720
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.187
Facility County: Los Angeles

Year: 2010

AON CENTER (Continued) **S101617194**

Gepaid: CAL000309995
Contact: PETER ANASTASSION/G M
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900173720
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.02
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000309995
Contact: PETER ANASTASSION/G M
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900173720
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.025
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
25 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 75591
Air District Name: SC
SIC Code: 7011
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

CD875 **NNE** **< 1/8** **0.063 mi.** **334 ft.**	**FIRST INTERSTATE TOWER** **707 WILSHIRE BLVD SUITE 5530** **LOS ANGELES, CA 90017** **Site 3 of 8 in cluster CD**	**EMI**	**S105937768** **N/A**

Relative:
Higher

Actual:
275 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995

FIRST INTERSTATE TOWER (Continued) **S105937768**

County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD

FIRST INTERSTATE TOWER (Continued) **S105937768**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

FIRST INTERSTATE TOWER (Continued) **S105937768**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2002
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
County Code:	19
Air Basin:	SC
Facility ID:	17396
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.422313
Reactive Organic Gases Tons/Yr:	0.41
Carbon Monoxide Emissions Tons/Yr:	0.0673
NOX - Oxides of Nitrogen Tons/Yr:	0.31
SOX - Oxides of Sulphur Tons/Yr:	0.00469
Particulate Matter Tons/Yr:	0.0221
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0.02

CD876 **NNE** **< 1/8** **0.063 mi.** **334 ft.**

FIRST INTERSTATE TOWER A JOINT
707 WILSHIRE BOULEVARD SUITE 5530
LOS ANGELES, CA 90017

FINDS **1005775726** **N/A**

Site 4 of 8 in cluster CD

Relative: Higher

Actual: 275 ft.

FINDS:

Registry ID: 110010478777

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

CD877 **NNE** **< 1/8** **0.063 mi.** **334 ft.**

OMNI VISION INTERNATIONAL INC
707 WILSHIRE BLVD
LOS ANGELES, CA 90020

RCRA-NonGen **1014387571** **CAR000211342**

Site 5 of 8 in cluster CD

Relative: Higher

Actual: 275 ft.

RCRA-NonGen:
Date form received by agency: 08/20/2010
Facility name: OMNI VISION INTERNATIONAL INC
Facility address: 707 WILSHIRE BLVD
STE 4140
LOS ANGELES, CA 90020
EPA ID: CAR000211342
Contact: RICHARD PARK
Contact address: 707 WILSHIRE BLVD STE 4140
LOS ANGELES, CA 90020
Contact country: US
Contact telephone: 213-891-1002
Telephone ext.: 105
Contact email: RICHARD@EOMNIVISION.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: OMNI VISION INTERNATIONAL INC
Owner/operator address: 707 WILSHIRE BLVD STE 4140
LOS ANGELES, CA 90020
Owner/operator country: US
Owner/operator telephone: 213-891-1002
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2002
Owner/Op end date: Not reported

Owner/operator name: OMNI VISION INTERNATIONAL INC
Owner/operator address: 707 WILSHIRE BLVD STE 4140
LOS ANGELES, CA 90020
Owner/operator country: US
Owner/operator telephone: 213-891-1002
Legal status: Private

OMNI VISION INTERNATIONAL INC (Continued) **1014387571**

Owner/Operator Type: Operator
Owner/Op start date: 01/01/2002
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: Yes
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

CD878 **E-COPY** **HAZNET** **S105092155**
NNE **707 WILSHIRE BLVD STE 1900** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.063 mi.
334 ft. **Site 6 of 8 in cluster CD**

Relative: Higher

Actual: 275 ft.

HAZNET:
Year: 2000
Gepaid: CAL000205321
Contact: E-COPY
Telephone: 2138964999
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD STE 1900
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Transfer Station
Tons: .0583
Facility County: Los Angeles

CD879 **1ST INTERSTATE TOWER** **UST** **U001560691**
NNE **707 WILSHIRE BLVD** **HIST UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **SWEEPS UST**
0.063 mi.
334 ft. **Site 7 of 8 in cluster CD**

Relative: Higher

Actual: 275 ft.

UST:
Facility ID: 24019
Latitude: 34.04876
Longitude: -118.25722

1ST INTERSTATE TOWER (Continued) **U001560691**

HIST UST:

Region:	STATE
Facility ID:	00000050490
Facility Type:	Other
Other Type:	BANK/OFFICE
Total Tanks:	0003
Contact Name:	JOHN C. SPRENGELMEYER
Telephone:	2135209942
Owner Name:	1ST INTERSTATE BANK
Owner Address:	707 WILSHIRE BLVD.
Owner City,St,Zip:	LOS ANGELES, CA 90017

Tank Num:	001
Container Num:	113482
Year Installed:	72
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	12 gauge
Leak Detection:	Visual

Tank Num:	002
Container Num:	113481
Year Installed:	72
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	12 gauge
Leak Detection:	Visual

Tank Num:	003
Container Num:	113483
Year Installed:	72
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	12 gauge
Leak Detection:	Visual

SWEEPS UST:

Status:	A
Comp Number:	2695
Number:	1
Board Of Equalization:	44-012453
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002695-000001
Actv Date:	04-20-88
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	3

1ST INTERSTATE TOWER (Continued) **U001560691**

Status:	A
Comp Number:	2695
Number:	1
Board Of Equalization:	44-012453
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002695-000002
Actv Date:	04-20-88
Capacity:	550
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	A
Comp Number:	2695
Number:	1
Board Of Equalization:	44-012453
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002695-000003
Actv Date:	04-20-88
Capacity:	5000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

CD880 **FIRST INTERSTATE BANK** **HAZNET** **S103669900**
NNE **707 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.063 mi.
334 ft. **Site 8 of 8 in cluster CD**

Relative:
Higher

Actual:
275 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000170024
Contact:	DAVE THOMPSON
Telephone:	2136142300
Mailing Name:	Not reported
Mailing Address:	707 WILSHIRE BLVD SUITE 4840
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Land Fill
Tons:	0.10
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000170024

FIRST INTERSTATE BANK (Continued) **S103669900**

Contact: DAVE THOMPSON
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD SUITE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Tons: 0.12
Facility County: Not reported

Year: 2002
Gepaid: CAL000170024
Contact: DAVE THOMPSON
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD SUITE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.22
Facility County: Not reported

Year: 2002
Gepaid: CAL000170024
Contact: DAVE THOMPSON
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD SUITE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: Recycler
Tons: 2.21
Facility County: Not reported

Year: 2002
Gepaid: CAL000170024
Contact: DAVE THOMPSON
Telephone: 2136142300
Mailing Name: Not reported
Mailing Address: 707 WILSHIRE BLVD SUITE 4840
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 0.34
Facility County: Not reported

FIRST INTERSTATE BANK (Continued) **S103669900**

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

BR881
NNE
< 1/8
0.063 mi.
335 ft.

637 WILSHIRE BLVD (IN FRONT OF AN OFFICE BLDG)
LOS ANGELES, CA

CHMIRS **S109040214**
N/A

Site 15 of 20 in cluster BR

Relative:
Higher

Actual:
272 ft.

CHMIRS:

OES Incident Number:	06-6460
OES notification:	10/31/2006 07:00:39 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Property Owner
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2006

(Continued) **S109040214**

Agency:	LA County Fire Hazmat
Incident Date:	10/31/2006 12:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	Lead Dust (gray black powder)
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	20
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Responsible parties dumped the substance in a driveway in front of an office bldg. Per R/P, believe this occ'd last nite. It is being investigated by LAPD. Two people Grace Moghadan & Michael Moghadan are with WD Gem Corp and are the responsible pparties. Their business was located at 611 Wilshire Blvd, Suite 1100 in Los Angeles but they are no longer there. This was originally called in as a possible radioactive incident but nothing was found at the location per the R/P.

BR882 **DOWNTOWN PROPERTIES LLC** **HAZNET** **S103666821**
NNE **611 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.064 mi.
336 ft. **Site 16 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002564699
Contact:	JOANNE GLUCK
Telephone:	2136227188
Mailing Name:	Not reported
Mailing Address:	700 WILSHIRE BLVD 7TH FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900171211
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Transfer Station
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAC002564699

DOWNTOWN PROPERTIES LLC (Continued) **S103666821**

Contact:	JOANNE GLUCK
Telephone:	2136227188
Mailing Name:	Not reported
Mailing Address:	700 WILSHIRE BLVD 7TH FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900171211
Gen County:	Los Angeles
TSD EPA ID:	WAD991281767
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Treatment, Incineration
Tons:	0
Facility County:	Los Angeles

Year:	2002
Gepaid:	CAL000208334
Contact:	ERIC BENDER/MGR
Telephone:	2132138600
Mailing Name:	Not reported
Mailing Address:	700 WILSHIRE BLVD 7TH FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900171211
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.08
Facility County:	Not reported

Year:	1993
Gepaid:	CAL912383238
Contact:	611 WILSHIRE PROPEERTY INC.
Telephone:	2136235800
Mailing Name:	Not reported
Mailing Address:	700 WILSHIRE BLVD 7TH FLOOR
Mailing City,St,Zip:	LOS ANGELES, CA 900171211
Gen County:	Los Angeles
TSD EPA ID:	CAL000027741
TSD County:	5
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.8541
Facility County:	Los Angeles

BR883 **COLISEE DESIGNS** **HAZNET** **S106094122**
NNE **611 WILSHIRE BLVD STE 317** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.064 mi.
336 ft. **Site 17 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000263722
Contact:	ABRAHAM ELMADJIAN/OWNER
Telephone:	2138920116
Mailing Name:	Not reported
Mailing Address:	611 WILSHIRE BLVD STE 317
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles

COLISEE DESIGNS (Continued) **S106094122**

TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Metal dust (Alkaline solution (pH >= 12.5) with metals) and machining waste
Disposal Method:	Recycler
Tons:	0.03
Facility County:	Not reported

BR884 **611 WILSHIRE PROPERTY** **HAZNET** **S108741496**
NNE **611 WILSHIRE BLVD STE 1100** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.064 mi.
336 ft. **Site 18 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002187969
Contact:	ARMIK MIKAILIAN
Telephone:	2134880777
Mailing Name:	Not reported
Mailing Address:	611 WILSHIRE BLVD STE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	H14
Tons:	0.02
Facility County:	Los Angeles

BR885 **AST** **A100345267**
NNE **611 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.064 mi.
336 ft. **Site 19 of 20 in cluster BR**

Relative:
Higher

Actual:
271 ft.

AST:

Owner:	GENUITY
Total Gallons:	4,000
Certified Unified Program Agencies:	City of Los Angeles
Owner:	VERIZON CALIFORNIA, INC.
Total Gallons:	2,000
Certified Unified Program Agencies:	City of Los Angeles

BR886 **PACIFIC BELL** **RCRA-NonGen** **1000250360**
NNE **611 WILSHIRE** **FINDS** **CAT080023245**
< 1/8 **LOS ANGELES, CA 90017**
0.064 mi.
336 ft. **Site 20 of 20 in cluster BR**

Relative: Higher

Actual: 271 ft.

RCRA-NonGen:

Date form received by agency:	09/02/1997
Facility name:	PACIFIC BELL
Facility address:	611 WILSHIRE LOS ANGELES, CA 90017
EPA ID:	CAT080023245
Mailing address:	170 N FAIR OAKS RM 104 PASADENA, CA 91103
Contact:	ENVIRONMENTAL MANAGER
Contact address:	611 WILSHIRE LOS ANGELES, CA 90017
Contact country:	US
Contact telephone:	(213) 578-2827
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/01/1996
Facility name:	PACIFIC BELL
Classification:	Small Quantity Generator

Date form received by agency:	01/19/1981

PACIFIC BELL (Continued) **1000250360**

Facility name: PACIFIC BELL
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002951333

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BV887 **1X HANS ENGINEERING COMPANY** **HAZNET** **S102804718**
South **1124 S MAIN STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.065 mi.
345 ft. **Site 3 of 4 in cluster BV**

Relative:
Lower

Actual:
242 ft.

HAZNET:

Year:	1995
Gepaid:	CAC001071824
Contact:	PAK KI WHAN TAUID
Telephone:	2137478879
Mailing Name:	Not reported
Mailing Address:	3720 W PICO BLVD.
Mailing City,St,Zip:	LOS ANGELES, CA 900190000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.2502
Facility County:	Los Angeles

BX888 **SPEEDO ELECTRIC CO** **EDR Historical Auto Stations** **1009080883**
SSW **1155 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.066 mi.
347 ft. **Site 9 of 10 in cluster BX**

Relative:
Lower

Actual:
245 ft.

EDR Historical Auto Stations:

Name:	SPEEDO ELECTRIC CO
Year:	1937
Type:	AUTOMOBILE REPAIRING

BX889 **SSW** **< 1/8** **0.066 mi.** **347 ft.**

TRANSAMERICA CENTER
1155 S OLIVE ST
LOS ANGELES, CA 90015

HAZNET **S107139716** **N/A**

Site 10 of 10 in cluster BX

Relative: **Lower**

Actual: **245 ft.**

HAZNET:

Year:	2003
Gepaid:	CAC002561122
Contact:	HARRY LAWRIE
Telephone:	2137423776
Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST SUITE T-2200
Mailing City,St,Zip:	LOS ANGELES, CA 900152211
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	0.12
Facility County:	Los Angeles

CE890 **NE** **< 1/8** **0.066 mi.** **347 ft.**

THE TIMES MIRROR COMPANY
214 W 2ND ST
LOS ANGELES, CA 90012

SWEEPS UST **S106932944** **N/A**

Site 1 of 6 in cluster CE

Relative: **Higher**

Actual: **290 ft.**

SWEEPS UST:

Status:	A
Comp Number:	4286
Number:	1
Board Of Equalization:	Not reported
Ref Date:	04-22-93
Act Date:	04-26-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CE891 **NE** **< 1/8** **0.066 mi.** **347 ft.**

THE LOS ANGELES TIMES
214 W 2ND ST
LOS ANGELES, CA 90012

UST **U003780780** **N/A**

Site 2 of 6 in cluster CE

Relative: **Higher**

Actual: **290 ft.**

UST:

Facility ID:	24337
Latitude:	34.05184
Longitude:	-118.24585

BV892 **11TH & MAIN PARTNERS LLC** **HAZNET** **S108741356**
South **106-112 E 11TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.066 mi.
347 ft. **Site 4 of 4 in cluster BV**

Relative:
Lower

Actual:
242 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002608497
Contact:	DARRIN NICKERSON/PARTNER
Telephone:	2133629300
Mailing Name:	Not reported
Mailing Address:	515 S FIGUEROA ST STE 1600
Mailing City,St,Zip:	LOS ANGELES, CA 900713337
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	H-1
Tons:	2.52
Facility County:	Los Angeles

CF893 **SMITH W J** **EDR Historical Cleaners** **1009186841**
NE **255 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.066 mi.
349 ft. **Site 1 of 4 in cluster CF**

Relative:
Higher

Actual:
408 ft.

EDR Historical Cleaners:

Name:	SMITH W J
Year:	1924
Type:	LAUNDRIES
Name:	UNICKEL J I
Year:	1933
Type:	LAUNDRIES HAND

CF894 **GRAND TOWERS** **HAZNET** **S108208125**
NE **255 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.066 mi.
349 ft. **Site 2 of 4 in cluster CF**

Relative:
Higher

Actual:
408 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002602316
Contact:	ALEX JALDAMEZ
Telephone:	2132299777
Mailing Name:	Not reported
Mailing Address:	123 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900122469
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.02
Facility County:	Los Angeles

GRAND TOWERS (Continued) **S108208125**

Year:	2004
Gepaid:	CAC002577893
Contact:	SUSAN PARDON/SUPERVSR
Telephone:	2136878440
Mailing Name:	Not reported
Mailing Address:	123 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	0.02
Facility County:	Not reported

CF895
NE
< 1/8
0.066 mi.
349 ft.

GRAND PROMENADE
255 S GRAND AVE
LOS ANGELES, CA 90012

WDS S103646837
HAZNET N/A

Site 3 of 4 in cluster CF

Relative:
Higher

Actual:
408 ft.

CA WDS:

Facility ID:	Los Angeles River 196000135
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAG994004 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	2132299777
Facility Contact:	Frank Recalado
Agency Name:	G & K MANAGEMENT CO. INC.
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	6513
SIC Code 2:	Not reported
Primary Waste:	Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	0
Complexity:	Not reported

HAZNET:

GRAND PROMENADE (Continued) **S103646837**

Year:	2010
Gepaid:	CAC002651565
Contact:	SUZANNE PARDON
Telephone:	3239979160
Mailing Name:	Not reported
Mailing Address:	123 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900122469
Gen County:	Not reported
TSD EPA ID:	CAD097030993
TSD County:	Not reported
Waste Category:	Liquids with pH <= 2
Disposal Method:	Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons:	0.35
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002651565
Contact:	SUZANNE PARDON
Telephone:	3239979160
Mailing Name:	Not reported
Mailing Address:	123 S FIGUEROA ST
Mailing City,St,Zip:	LOS ANGELES, CA 900122469
Gen County:	Not reported
TSD EPA ID:	CAD097030993
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAC001221192
Contact:	GRAND PROMENADE
Telephone:	2132299777
Mailing Name:	Not reported
Mailing Address:	255 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080025711
TSD County:	San Bernardino
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	.1459
Facility County:	Los Angeles

CG896 **LEHNE & SON PAINTING CONTRACTORS** **HAZNET** **S110368054**
East **210 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.067 mi.
353 ft. **Site 1 of 6 in cluster CG**

Relative:
Higher

Actual:
256 ft.

HAZNET:

Year:	2010
Gepaid:	CAR000197053
Contact:	AMY CHO/COMMUNITY MANAGER
Telephone:	2136275286

LEHNE & SON PAINTING CONTRACTORS (Continued) **S110368054**

Mailing Name: Not reported
Mailing Address: 210 W 7TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Not reported
TSD EPA ID: CAD008252405
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.5
Facility County: Los Angeles

Year: 2009
Gepaid: CAC002638277
Contact: STEVE LEHNE
Telephone: 3103946463
Mailing Name: Not reported
Mailing Address: 3634 MALIBU VISTA DR
Mailing City,St,Zip: MALIBU, CA 90265
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.25
Facility County: Los Angeles

CG897 **VAN NUYS APARTMENTS** **RCRA-LQG** **1012175895**
East **210 W 7TH ST** **HAZNET** **CAR000197053**
< 1/8 **LOS ANGELES, CA 90014**
0.067 mi.
353 ft. **Site 2 of 6 in cluster CG**

Relative: Higher

Actual: 256 ft.

RCRA-LQG:
Date form received by agency: 12/04/2008
Facility name: VAN NUYS APARTMENTS
Facility address: 210 W 7TH ST
LOS ANGELES, CA 90014
EPA ID: CAR000197053
Contact: BRYAN G NELSON
Contact address: 210 W 7TH ST
LOS ANGELES, CA 90014
Contact country: US
Contact telephone: 310-590-6133
Contact email: BRYAN.NELSON@AIMCO.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely

VAN NUYS APARTMENTS (Continued) **1012175895**

hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	DAN SALAZAR
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	08/11/2008
Owner/Op end date:	Not reported

Owner/operator name:	VAN NUYS PRESERVATION LP
Owner/operator address:	PO BOX 111397 AIMCO TTA MS 235
	CARROLLTON, TX 75011
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	02/04/2008
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D008
Waste name:	LEAD

Violation Status: No violations found

HAZNET:

Year:	2009
Gepaid:	CAC002638499
Contact:	BRYAN NELSON
Telephone:	3105906133
Mailing Name:	Not reported
Mailing Address:	6100 CENTER DR STE 800
Mailing City,St,Zip:	LOS ANGELES, CA 90045
Gen County:	Los Angeles

VAN NUYS APARTMENTS (Continued) **1012175895**

TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.4
Facility County: Los Angeles

Year: 2009
Gepaid: CAC002638499
Contact: BRYAN NELSON
Telephone: 3105906133
Mailing Name: Not reported
Mailing Address: 6100 CENTER DR STE 800
Mailing City,St,Zip: LOS ANGELES, CA 90045
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Other inorganic solid waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.4
Facility County: Los Angeles

CG898 **VAN NUYS APARTMENTS** **FINDS** **1012108201**
East **210 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.067 mi.
353 ft. **Site 3 of 6 in cluster CG**

Relative: Higher

Actual: 256 ft.

FINDS:

Registry ID: 110038892856

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CH899 **KELLEY BROS** **EDR Historical Auto Stations** **1009082564**
SSW **1127 S HILL ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.067 mi.
355 ft. **Site 1 of 5 in cluster CH**

Relative: Lower

Actual: 244 ft.

EDR Historical Auto Stations:
Name: KELLEY BROS
Year: 1937
Type: AUTOMOBILE REPAIRING

BT900 **DALE BERNARD** **EDR Historical Auto Stations** **1009080287**
NNW **936 W 8TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.067 mi.
356 ft. **Site 3 of 5 in cluster BT**

Relative:
Higher

Actual:
257 ft.

EDR Historical Auto Stations:

Name:	DALE BERNARD
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	WINTERBOTTOM JOS
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

CI901 **LA ATHLETIC CLUB INC** **CA FID UST** **S101587457**
NE **646 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.070 mi.
370 ft. **Site 1 of 13 in cluster CI**

Relative:
Higher

Actual:
268 ft.

CA FID UST:

Facility ID:	19055653
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	646 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	3984
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CJ902 **SE** **< 1/8** **0.070 mi.** **372 ft.**	**PHILIPS 1 HR PHOTO** **123 W 9TH ST** **LOS ANGELES, CA 90015** **Site 1 of 19 in cluster CJ**	**RCRA-SQG** **FINDS** **HAZNET**	**1000286420** **CAD982510919**

Relative:
Lower

Actual:
247 ft.

RCRA-SQG:

Date form received by agency:	06/26/1992
Facility name:	PHILIPS 1 HR PHOTO
Facility address:	123 W 9TH ST LOS ANGELES, CA 90015
EPA ID:	CAD982510919
Mailing address:	W 9TH ST LOS ANGELES, CA 90015
Contact:	PHILIP KIM
Contact address:	123 W 9TH ST LOS ANGELES, CA 90015
Contact country:	US
Contact telephone:	(213) 624-0770
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PHILIP KIM
Owner/operator address:	123 W 9TH ST LOS ANGELES, CA 90015
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 624-0770
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

PHILIPS 1 HR PHOTO (Continued) **1000286420**

Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002837654

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 1997
Gepaid: CAD982510919
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 123 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .3125
Facility County: Los Angeles

Year: 1996
Gepaid: CAD982510919
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 123 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .4084
Facility County: Los Angeles

Year: 1995
Gepaid: CAD982510919
Contact: PHILIP KIM

PHILIPS 1 HR PHOTO (Continued) **1000286420**

Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 123 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .1708
Facility County: Los Angeles

Year: 1994
Gepaid: CAD982510919
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 123 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2666
Facility County: Los Angeles

Year: 1994
Gepaid: CAD982510919
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 123 W 9TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: .0291
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

CK903 **SOUTH SPRINGS STREET CO** **HAZNET** **S104568549**
ENE **311 S SPRINGS ST** **N/A**
< 1/8 **LOS ANGELES, CA 90026**
0.070 mi.
372 ft. **Site 1 of 5 in cluster CK**

Relative:
Higher

Actual:
281 ft.

HAZNET:
Year: 1999
Gepaid: CAC001475268
Contact: SOUTH SPRINGS STREET CO
Telephone: 2136874460
Mailing Name: Not reported
Mailing Address: 311 S SPRINGS ST STE 1200

SOUTH SPRINGS STREET CO (Continued) **S104568549**

Mailing City,St,Zip:	LOS ANGELES, CA 900260000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	27.939
Facility County:	Los Angeles
Year:	1999
Gepaid:	CAC001475268
Contact:	SOUTH SPRINGS STREET CO
Telephone:	2136874460
Mailing Name:	Not reported
Mailing Address:	311 S SPRINGS ST STE 1200
Mailing City,St,Zip:	LOS ANGELES, CA 900260000
Gen County:	Los Angeles
TSD EPA ID:	CAD088504881
TSD County:	Orange
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	1.545
Facility County:	Los Angeles

CA904 **CHARLOFF BESSIE** **EDR Historical Cleaners** **1009193945**
NNW **948 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.071 mi.
375 ft. **Site 2 of 2 in cluster CA**

Relative:
Higher

Actual:
294 ft.

EDR Historical Cleaners:

Name:	CHARLOFF BESSIE
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

CF905 **SILVERMAN ABR** **EDR Historical Cleaners** **1009189347**
NE **259 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.072 mi.
378 ft. **Site 4 of 4 in cluster CF**

Relative:
Higher

Actual:
406 ft.

EDR Historical Cleaners:

Name:	SILVERMAN ABR
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	SILVERMAN ABR
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

CB906 **1X TOM BELL** **HAZNET** **S103640809**
ENE **206 W SIXTH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.072 mi.
379 ft. **Site 2 of 8 in cluster CB**

Relative:
Higher

Actual:
260 ft.

HAZNET:

Year:	1994
Gepaid:	CAC000798168
Contact:	TOM BELL
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	206 W SIXTH
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.0000
Facility County:	Los Angeles

CB907 **HAYWARD MANOR APTS** **HAZNET** **S108748272**
ENE **206 W 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.072 mi.
379 ft. **Site 3 of 8 in cluster CB**

Relative:
Higher

Actual:
260 ft.

HAZNET:

Year:	2007
Gepaid:	CAC002610737
Contact:	IZEK SHOMOS
Telephone:	2136231464
Mailing Name:	Not reported
Mailing Address:	206 W 6TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	2.4
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002610737
Contact:	IZEK SHOMOS
Telephone:	2136231464
Mailing Name:	Not reported
Mailing Address:	206 W 6TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	H13
Tons:	5.05
Facility County:	Los Angeles

CH908 **FOWLER L D** **EDR Historical Auto Stations** **1009081697**
SSW **1129 S HILL ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.072 mi.
382 ft. **Site 2 of 5 in cluster CH**

Relative:
Lower

Actual:
244 ft.

EDR Historical Auto Stations:

Name:	FOWLER L D
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

BT909 **RALPH DE FAY** **HIST UST** **U001560740**
NNW **946 W 8TH ST** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.072 mi.
382 ft. **Site 4 of 5 in cluster BT**

Relative:
Higher

Actual:
258 ft.

HIST UST:

Region:	STATE
Facility ID:	00000039860
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	SAME
Telephone:	2136234360
Owner Name:	MOBIL OIL CORP
Owner Address:	612 S. FLOWER ST
Owner City,St,Zip:	LOS ANGELES, CA 90017

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00000280
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	4
Year Installed:	1979
Tank Capacity:	00000800
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	003
Container Num:	3
Year Installed:	1979
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	004
Container Num:	2
Year Installed:	1980
Tank Capacity:	00006000

RALPH DE FAY (Continued) **U001560740**

Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

HAZNET:

Year:	2000
Gepaid:	CAC001442496
Contact:	THE FRANCISCO & 8TH ST CO
Telephone:	5624325020
Mailing Name:	Not reported
Mailing Address:	301 E OCEAN BLVD STE 400
Mailing City,St,Zip:	LONG BEACH, CA 908020000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	1.6680
Facility County:	Los Angeles

BU910 **NE** **< 1/8** **0.073 mi.** **383 ft.**

THE ANGELUS PLAZA
245 S OLIVE
LOS ANGELES, CA 90012

HAZNET **S108756312** **N/A**

Site 4 of 10 in cluster BU

Relative: Higher
Actual: 384 ft.

HAZNET:

Year:	2006
Gepaid:	CAC002610734
Contact:	ROMMEL JIMENEA/ENG
Telephone:	2136234352
Mailing Name:	Not reported
Mailing Address:	255 S HILL ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	0.22
Facility County:	Los Angeles

BY911 **NE** **< 1/8** **0.073 mi.** **384 ft.**

LOS ANGELES TIMES COMMUNICATIONS LLC
202 W 1ST ST, ST & 145 S SPRING ST
LOS ANGELES, CA 90012

EMI **S106834735** **N/A**

Site 3 of 7 in cluster BY

Relative: Higher
Actual: 298 ft.

EMI:

Year:	2002
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711

LOS ANGELES TIMES COMMUNICATIONS LLC (Continued) **S106834735**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2003
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2004
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.5871
Reactive Organic Gases Tons/Yr:	0.42
Carbon Monoxide Emissions Tons/Yr:	1.5613
NOX - Oxides of Nitrogen Tons/Yr:	1.4522
SOX - Oxides of Sulphur Tons/Yr:	0.027253
Particulate Matter Tons/Yr:	0.20381
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0.21

Year:	2005
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.28518
Reactive Organic Gases Tons/Yr:	.204665826
Carbon Monoxide Emissions Tons/Yr:	1.1622

LOS ANGELES TIMES COMMUNICATIONS LLC (Continued) **S106834735**

NOX - Oxides of Nitrogen Tons/Yr:	1.0203
SOX - Oxides of Sulphur Tons/Yr:	.014575
Particulate Matter Tons/Yr:	.1309
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.130168
Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1862033047313108947
Reactive Organic Gases Tons/Yr:	.091
Carbon Monoxide Emissions Tons/Yr:	.525
NOX - Oxides of Nitrogen Tons/Yr:	.84
SOX - Oxides of Sulphur Tons/Yr:	.012
Particulate Matter Tons/Yr:	.112
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.112
Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	125015
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1862033047313108947
Reactive Organic Gases Tons/Yr:	.091
Carbon Monoxide Emissions Tons/Yr:	.525
NOX - Oxides of Nitrogen Tons/Yr:	.84
SOX - Oxides of Sulphur Tons/Yr:	.012
Particulate Matter Tons/Yr:	.112
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.112

BY912	**TIMES MIRROR COMPANY**	**RCRA-SQG**	**1000221221**
NE	**202 WEST 1ST STREET**	**FINDS**	**CAD008382400**
< 1/8	**LOS ANGELES, CA 90012**		
0.073 mi.			
385 ft.	**Site 4 of 7 in cluster BY**		

Relative:
Higher

Actual:
298 ft.

RCRA-SQG:

Date form received by agency:	10/12/2000
Facility name:	TIMES MIRROR COMPANY THE#
Site name:	TIMES MIRROR COMPANY
Facility address:	220 W. 1ST STREET TIMES MIRROR SQUARE LOS ANGELES, CA 90053
EPA ID:	CAD008382400
Contact:	MARY ELLEN VOJTEK
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(213) 237-5014

TIMES MIRROR COMPANY (Continued) **1000221221**

Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/04/1999
Facility name: TIMES MIRROR COMPANY THE#
Site name: TIMES MIRROR CORP.
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Facility name: TIMES MIRROR COMPANY THE#
Classification: Small Quantity Generator

Date form received by agency: 10/27/1980
Facility name: TIMES MIRROR COMPANY THE#
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110010475681

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource

TIMES MIRROR COMPANY (Continued) **1000221221**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

US EPA RACT/BACT/LAER Clearinghouse (RBLC) database contains case-specific information on the "Best Available" air pollution technologies that have been required to reduce the emission of air pollutants from stationary sources (e.g., power plants, steel mills, chemical plants, etc.). RACT, or Reasonably Available Control Technology, is required on existing sources in areas that are not meeting national ambient air quality standards. BACT, or Best Available Control Technology, is required on major new or modified sources in clean areas. LAER, or Lowest Achievable Emission Rate, is required on major new or modified sources in non-attainment areas.

BY913
NE
< 1/8
0.073 mi.
385 ft.

THE TIMES MIRROR COMPANY **CA FID UST** **S101587543**
202 W 1ST ST **N/A**
LOS ANGELES, CA 90012

Site 5 of 7 in cluster BY

Relative:
Higher

Actual:
298 ft.

CA FID UST:

Facility ID:	19055742
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	202 W 1ST ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

CB914 **1X DEMETRIOU DEL GUERCIO & LOVEJOY** **HAZNET** **S103642053**
ENE **215 W 6TH ST** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.073 mi.
385 ft. **Site 4 of 8 in cluster CB**

Relative:
Higher

Actual:
260 ft.

HAZNET:

Year:	1997
Gepaid:	CAC000556912
Contact:	CA PART
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	38.7688
Facility County:	Los Angeles

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	36645
Air District Name:	SC
SIC Code:	5199
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	36645
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19

1X DEMETRIOU DEL GUERCIO & LOVEJOY (Continued) **S103642053**

Air Basin:	SC
Facility ID:	36645
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CL915
West
< 1/8
0.073 mi.
386 ft.

NOKIA THEATRE LA LIVE
777 CHICK HEARN CT
LOS ANGELES, CA 90015

HAZNET **S111083085**
N/A

Site 1 of 5 in cluster CL

Relative:
Lower

Actual:
243 ft.

HAZNET:

Year:	2010
Gepaid:	CAL000328124
Contact:	MIKE STROBEL
Telephone:	2137606090
Mailing Name:	Not reported
Mailing Address:	777 CHICK HEARN CT
Mailing City,St,Zip:	LOS ANGELES, CA 900154603
Gen County:	Not reported
TSD EPA ID:	TXD077603371
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.684
Facility County:	Los Angeles

BY916
NE
< 1/8
0.073 mi.
386 ft.

TIMES MIRROR CO
202 W 1ST ST 145 S SPRING
LOS ANGELES, CA 90053

EMI **S105940030**
N/A

Site 6 of 7 in cluster BY

Relative:
Higher

Actual:
298 ft.

EMI:

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	1

TIMES MIRROR CO (Continued) **S105940030**

NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	9803
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	9803
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	5
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999

TIMES MIRROR CO (Continued) **S105940030**

County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	9803
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	9803
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	9803
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	6
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CI917 **AMPAC CAPITAL INC** **HAZNET** **S105087594**
NE **643 S OLIVE STREET 10TH FL & BASEMENT** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.074 mi.
391 ft. **Site 2 of 13 in cluster CI**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002297857
Contact:	AMPAC CAPITAL INC
Telephone:	2138920088
Mailing Name:	Not reported
Mailing Address:	643 S OLIVE STREET STE 600
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	22.7556
Facility County:	Los Angeles

BY918 **TIMES MIRROR CO (EIS USE)** **EMI** **S106841121**
NE **201 WEST FIRST STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90053**
0.074 mi.
393 ft. **Site 7 of 7 in cluster BY**

Relative:
Higher

Actual:
298 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	62
Reactive Organic Gases Tons/Yr:	57
Carbon Monoxide Emissions Tons/Yr:	3
NOX - Oxides of Nitrogen Tons/Yr:	14
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	800213
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	25
Reactive Organic Gases Tons/Yr:	24
Carbon Monoxide Emissions Tons/Yr:	2
NOX - Oxides of Nitrogen Tons/Yr:	6
SOX - Oxides of Sulphur Tons/Yr:	0

TIMES MIRROR CO (EIS USE) (Continued) **S106841121**

Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

CI919 **JEWELRY BY MICHAEL** **HAZNET** **S107149096**
NE **643 S OLIVE ST STE 800** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.075 mi.
395 ft. **Site 3 of 13 in cluster CI**

Relative:
Higher

Actual:
268 ft.

HAZNET:

Year:	2003
Gepaid:	CAL000271352
Contact:	MICHEAL JIANG
Telephone:	2138920701
Mailing Name:	Not reported
Mailing Address:	643 S OLIVE ST STE 800
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	101.13
Facility County:	Los Angeles

CI920 **SIMPSON & CHAVIRA** **RCRA-SQG** **1000349899**
NE **643 S OLIVE ST 2ND FLOOR** **FINDS** **CAD982020463**
< 1/8 **LOS ANGELES, CA 90014**
0.075 mi.
395 ft. **Site 4 of 13 in cluster CI**

Relative:
Higher

Actual:
268 ft.

RCRA-SQG:

Date form received by agency:	08/03/1987
Facility name:	SIMPSON & CHAVIRA
Facility address:	643 S OLIVE ST 2ND FLOOR LOS ANGELES, CA 90014
EPA ID:	CAD982020463
Mailing address:	S OLIVE ST 2ND FLOOR LOS ANGELES, CA 90014
Contact:	ENVIRONMENTAL MANAGER
Contact address:	643 S OLIVE ST 2ND FLOOR LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 485-1444
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ROBERT CHAVIRA & STUART SIMPSON
Owner/operator address:	NOT REQUIRED

SIMPSON & CHAVIRA (Continued) **1000349899**

	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002778281

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CM921 **NAKAMURA L** **EDR Historical Cleaners** **1009187161**
NW **827 W 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.075 mi.
395 ft. **Site 1 of 3 in cluster CM**

Relative: Lower

Actual: 252 ft.

EDR Historical Cleaners:

Name:	NAKAMURA L
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	UMEKUBO SHINZO
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	UMEKUBO SLNNZO
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	UMEKUBO SHINZO
Year:	1942
Type:	LAUNDRIES ORIENTAL

CN922 **ERNS** **8712649**
NE **530 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.075 mi.
396 ft. **Site 1 of 7 in cluster CN**

Relative: Higher

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual: 276 ft.

CN923 **PERSHING SQUARE GARAGE** **CA FID UST** **S101583812**
NE **530 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.075 mi.
396 ft. **Site 2 of 7 in cluster CN**

Relative: Higher

Actual: 276 ft.

CA FID UST:

Facility ID:	19006448
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136283311
Mail To:	Not reported
Mailing Address:	530 S OLIVE STREEET
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

PERSHING SQUARE GARAGE (Continued) **S101583812**

Status:	Not reported
Comp Number:	3981
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CN924 **CITY PARK GARAGE, INC.** **UST** **U003780844**
NE **530 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.075 mi.
396 ft. **Site 3 of 7 in cluster CN**

Relative: Higher

Actual: 276 ft.

UST:

Facility ID:	24410
Latitude:	34.04897
Longitude:	-118.2533

BP925 **CALTRANS-DISTRICT 7 REFERRALS** **LOS ANGELES CO. HMS** **S100931381**
NE **120 S SPRING ST** **N/A**
< 1/8 **LOS ANGELIS, CA**
0.075 mi.
397 ft. **Site 2 of 12 in cluster BP**

Relative: Higher

Actual: 295 ft.

LOS ANGELES CO. HMS:

Region:	LA
Facility Id:	017162-023078
Facility Type:	Not reported
Facility Status:	OPEN
Area:	3F
Permit Number:	Not reported
Permit Status:	Not reported

BU926 **ANGELUS PLAZA** **EMI** **S106825981**
NE **240 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.075 mi.
398 ft. **Site 5 of 10 in cluster BU**

Relative: Higher

Actual: 384 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76525
Air District Name:	SC

ANGELUS PLAZA (Continued) **S106825981**

SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BN927
NE
< 1/8
0.076 mi.
400 ft.

SAVOY CORPORATION
406 S OLIVE ST
LOS ANGELES, CA 90013

CA FID UST **S101586652**
SWEEPS UST **N/A**

Site 2 of 3 in cluster BN

Relative:
Higher

Actual:
318 ft.

CA FID UST:

Facility ID:	19054317
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	406 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	3982
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

BP928 | **TIMES MIRROR CORPORATION** | **HIST CORTESE** | **S102439123**
NE | **145 SPRING ST S** | **LUST** | **N/A**
< 1/8 | **LOS ANGELES, CA 90012**
0.076 mi.
400 ft. | **Site 3 of 12 in cluster BP**

Relative:
Higher

Actual:
293 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120061

LUST:

Region:	STATE
Global Id:	T0603700505
Latitude:	34.052404
Longitude:	-118.2452001
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/30/1989
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120061
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700505
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700505
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700505
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

TIMES MIRROR CORPORATION (Continued) **S102439123**

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900120061
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Soil
Abatement Method Used at the Site:	No Action Required
Global ID:	T0603700505
W Global ID:	W0605100582
Staff:	UNK
Local Agency:	19050
Cross Street:	1ST ST
Enforcement Type:	Not reported
Date Leak Discovered:	Not reported
Date Leak First Reported:	4/27/1988
Date Leak Record Entered:	6/3/1988
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	3/30/1989
Date the Case was Closed:	3/30/1989
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	MALCOR, JOSEPH V.
Water System:	YMCA CAMP OF LOS ANGELES 2
Well Name:	Not reported
Approx. Dist To Production Well (ft):	2365.9537613317074026355595998
Source of Cleanup Funding:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	2/17/1989
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Yes
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	TIMES MIRROR CORPORATION
RP Address:	145 S SPRING ST, LOS ANGELES, CA 90012
Program:	LUST
Lat/Long:	34.052404 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported

TIMES MIRROR CORPORATION (Continued) **S102439123**

Assigned Name: 2600582-001GEN
Summary: LA CITY FIRE DEPARTMENT REQUESTED LARWQCB TO CONDUCT A LEAK DETECTION PROGRAM. IT IS UNKNOWN AT THIS TIME WHETHER A LEAK HAS OCCURED.

CI929
NE
< 1/8
0.076 mi.
403 ft.

606 OLIVE LLC
606 S OLIVE ST
LOS ANGELES, CA 90014

HAZNET **S108196286**
N/A

Site 5 of 13 in cluster CI

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year: 2006
Gepaid: CAC002599216
Contact: WILLIAM ZENGLER
Telephone: 2138911900
Mailing Name: Not reported
Mailing Address: 606 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 15.17
Facility County: Los Angeles

Year: 2005
Gepaid: CAC002588808
Contact: WILLIAM ZENGLER
Telephone: 2138911900
Mailing Name: Not reported
Mailing Address: 606 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Recycler
Tons: 0.05
Facility County: Not reported

Year: 2004
Gepaid: CAC002575508
Contact: TERESA KIRKALDY
Telephone: 2138911900
Mailing Name: Not reported
Mailing Address: 606 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 0.84
Facility County: Not reported

CI930 **NE** **< 1/8** **0.076 mi.** **403 ft.**

DAMES & MOORE
606 S OLIVE ST
LOS ANGELES, CA 90014

CA FID UST
SWEEPS UST

S101583636
N/A

Site 6 of 13 in cluster CI

Relative: **Higher**

Actual: **270 ft.**

CA FID UST:

Facility ID:	19005117
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	606 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	7214
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CI931 **NE** **< 1/8** **0.076 mi.** **403 ft.**

TISMAN SPEYER PROPERTIES
606 SOUTH OLIVE STREET
LOS ANGELES, CA 90014

HAZNET

S104575573
N/A

Site 7 of 13 in cluster CI

Relative: **Higher**

Actual: **270 ft.**

HAZNET:

Year:	1999
Gepaid:	CAL000015864
Contact:	CITINATIONAL BUCKEYE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	606 SOUTH OLIVE STREET #1200
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD982446874

TISMAN SPEYER PROPERTIES (Continued) **S104575573**

TSD County: Yolo
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Transfer Station
Tons: 0.2502
Facility County: Los Angeles

BU932
NE
< 1/8
0.077 mi.
404 ft.

TROTTER W H
256 S OLIVE ST
LOS ANGELES, CA

EDR Historical Cleaners **1009192693**
N/A

Site 6 of 10 in cluster BU

Relative: Higher

Actual: 385 ft.

EDR Historical Cleaners:
Name: TROTTER W H
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

CI933
NE
< 1/8
0.077 mi.
404 ft.

SIMPSON & CHAVIRA INC
643 S OLIVE ST #1000
LOS ANGELES, CA 90013

RCRA-SQG **1000349897**
FINDS **CAD981689326**

Site 8 of 13 in cluster CI

Relative: Higher

Actual: 268 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: SIMPSON & CHAVIRA INC
Facility address: 643 S OLIVE ST #1000
LOS ANGELES, CA 90013
EPA ID: CAD981689326
Mailing address: S OLIVE ST #1000
LOS ANGELES, CA 90013
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

SIMPSON & CHAVIRA INC (Continued) **1000349897**

Owner/operator name:	STUART SIMPSON
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002753725

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CG934 **MARUNO MANZO** **EDR Historical Cleaners** **1009187520**
East **202 W 7TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.077 mi.
404 ft. **Site 4 of 6 in cluster CG**

Relative:
Higher

Actual:
256 ft.

EDR Historical Cleaners:

Name:	MARUNO MANZO
Year:	1924
Type:	LAUNDRIES

CI935 **NE** **< 1/8** **0.077 mi.** **404 ft.**

CROWN PLAZA
620 S OLIVE ST
LOS ANGELES, CA 90014

CA FID UST **SWEEPS UST** — **S101583916** **N/A**

Site 9 of 13 in cluster CI

Relative: Higher

Actual: 269 ft.

CA FID UST:

Facility ID:	19007337
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	620 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6510
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CO936 **South** **< 1/8** **0.077 mi.** **404 ft.**

TRANSAMERICA BUILDING
1149 S BROADWAY ST
LOS ANGELES, CA 90012

HAZNET — **S108223103** **N/A**

Site 1 of 13 in cluster CO

Relative: Lower

Actual: 243 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000297254
Contact:	H E. MAXWELL, MGMT. ANALYST
Telephone:	2139783791
Mailing Name:	Not reported
Mailing Address:	111 E 1ST ST RM 600
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626

TRANSAMERICA BUILDING (Continued) **S108223103**

TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 10
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000297254
Contact: H E. MAXWELL, MGMT. ANALYST
Telephone: 2139783791
Mailing Name: Not reported
Mailing Address: 111 E 1ST ST RM 600
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.125
Facility County: Los Angeles

Year: 2006
Gepaid: CAL000297254
Contact: LEE MOORE
Telephone: 2139783798
Mailing Name: Not reported
Mailing Address: 111 E 1ST ST RM 600
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: CAR000156125
TSD County: San Bernardino
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Recycler
Tons: 2.21
Facility County: Los Angeles

Year: 2005
Gepaid: CAL000297254
Contact: LEE MOORE
Telephone: 2139783798
Mailing Name: Not reported
Mailing Address: 111 E 1ST ST RM 600
Mailing City,St,Zip: LOS ANGELES, CA 90012
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 0.21
Facility County: Not reported

CN937 **CITY OF LOS ANGELES/PERSHING SQUARE** **HAZNET** **S103663600**
NE **525 SOUTH OLIVE STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.077 mi.
405 ft. **Site 4 of 7 in cluster CN**

Relative:
Higher

Actual:
277 ft.

HAZNET:

Year:	1994
Gepaid:	CAC000970104
Contact:	CITY OF LOS ANGELES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	DEPT. OF RECS AND PARKS
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080010101
TSD County:	San Diego
Waste Category:	Off-specification, aged or surplus inorganics
Disposal Method:	Treatment, Tank
Tons:	.2000
Facility County:	Los Angeles

CP938 **THE ANGELUS PLAZA** **UST** **U003780795**
NE **300 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.077 mi.
405 ft. **Site 1 of 4 in cluster CP**

Relative:
Higher

Actual:
386 ft.

UST:

Facility ID:	24352
Latitude:	34.05231
Longitude:	-118.25016

BP939 **LOS ANGELES TIMES** **FTTS** **1006282607**
NE **145 S SPRING ST** **HIST FTTS** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **FINDS**
0.077 mi.
405 ft. **Site 4 of 12 in cluster BP**

Relative:
Higher

Actual:
293 ft.

FTTS INSP:

Inspection Number:	19900927R9002 1
Region:	09
Inspection Date:	09/27/90
Inspector:	KALLO
Violation occurred:	No
Investigation Type:	EPCRA, Enforcement, SEE Conducted
Investigation Reason:	For Cause, Private Citizen/Press Complaint
Legislation Code:	EPCRA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	19900927R9002 1
Region:	09
Inspection Date:	Not reported
Inspector:	KALLO
Violation occurred:	No
Investigation Type:	EPCRA, Enforcement, SEE Conducted

LOS ANGELES TIMES (Continued) **1006282607**

Investigation Reason: For Cause, Private Citizen/Press Complaint
Legislation Code: EPCRA
Facility Function: User

FINDS:

Registry ID: 110011654762

Environmental Interest/Information System
NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

CQ940 **ARTUSY M G** **EDR Historical Auto Stations** **1009079074**
NE **350 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.077 mi.
406 ft. **Site 1 of 4 in cluster CQ**

Relative:
Higher

Actual:
359 ft.

EDR Historical Auto Stations:
Name: SHAFFNER AITUSY
Year: 1933
Type: AUTOMOBILE REPAIRING

Name: MENICUCCI BENNIE
Year: 1933
Type: AUTOMOBILE REPAIRING

Name: ARTUSY M G
Year: 1937
Type: AUTOMOBILE REPAIRING

Name: MC BRIDE R F
Year: 1942
Type: AUTOMOBILE REPAIRING

CR941 **CHMIRS** **S109039267**
NE **433 SOUTH OLIVE ST.** **N/A**
< 1/8 **LOS ANGELES, CA**
0.077 mi.
409 ft. **Site 1 of 6 in cluster CR**

Relative:
Higher

Actual:
310 ft.

CHMIRS:
OES Incident Number: 07-4053
OES notification: 7/6/2007 02:24:17 PM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: **Not reported**
Property Use: Not reported
Agency Id Number: Not reported
Agency Incident Number: Not reported

(Continued) **S109039267**

Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2007
Agency:	ATT
Incident Date:	7/5/2007 12:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Hydraulic Oil
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	3
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0

(Continued) **S109039267**

Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	A garbage truck broke a hydraulic line in parking lot.

CR942
NE
< 1/8
0.077 mi.
409 ft.

PACIFIC BELL
433 S OLIVE
LOS ANGELES, CA 90013

Site 2 of 6 in cluster CR

RCRA-SQG
FINDS
CA FID UST
UST
HIST UST
SWEEPS UST
HAZNET
EMI

1000250338
CAT080022791

Relative:
Higher

Actual:
310 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	PACIFIC BELL
Facility address:	433 S OLIVE LOS ANGELES, CA 90013
EPA ID:	CAT080022791
Mailing address:	170 N FAIR OAKS RM 104 PASADENA, CA 91103
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private

PACIFIC BELL (Continued) **1000250338**

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:
Date form received by agency: 01/19/1981
Facility name: PACIFIC BELL
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002950968

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CA FID UST:

Facility ID:	19051034
Regulated By:	UTNKI
Regulated ID:	00017047
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4158238723
Mail To:	Not reported
Mailing Address:	177 COLORADO BLVD
Mailing Address 2:	Not reported

PACIFIC BELL (Continued) **1000250338**

Mailing City,St,Zip: LOS ANGELES 900130000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

UST:
Facility ID: 23912
Latitude: 34.05039
Longitude: -118.252

HIST UST:
Region: STATE
Facility ID: 00000017047
Facility Type: Other
Other Type: PHONE CO.
Total Tanks: 0003
Contact Name: E. J. KOEHLER
Telephone: 4155426758
Owner Name: PACIFIC BELL
Owner Address: 370 THIRD STREET
Owner City,St,Zip: SAN FRANCISCO, CA 94107

Tank Num: 001
Container Num: D-61-300-0
Year Installed: 1961
Tank Capacity: 00000300
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 002
Container Num: D-61-300-0
Year Installed: 1961
Tank Capacity: 00000300
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

Tank Num: 003
Container Num: D-60-4K
Year Installed: 1960
Tank Capacity: 00004000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: None

SWEEPS UST:
Status: Not reported
Comp Number: 1082

PACIFIC BELL (Continued) **1000250338**

Number: Not reported
Board Of Equalization: 44-001027
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001082-000001
Actv Date: Not reported
Capacity: 300
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: 3

Status: Not reported
Comp Number: 1082
Number: Not reported
Board Of Equalization: 44-001027
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001082-000002
Actv Date: Not reported
Capacity: 300
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

Status: Not reported
Comp Number: 1082
Number: Not reported
Board Of Equalization: 44-001027
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001082-000003
Actv Date: Not reported
Capacity: 4000
Tank Use: M.V. FUEL
Stg: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

HAZNET:
Year: 2010
Gepaid: CAT080022791
Contact: EH & S RECORDKEEPER-RRC
Telephone: 8005669347
Mailing Name: Not reported
Mailing Address: 1 AT&T WAY RM 2C140
Mailing City,St,Zip: BEDMINSTER, NJ 079210000

PACIFIC BELL (Continued) **1000250338**

Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.8
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAT080022791
Contact:	EH & S RECORDKEEPER-RRC
Telephone:	8005669347
Mailing Name:	Not reported
Mailing Address:	1 AT&T WAY RM 2C140
Mailing City,St,Zip:	BEDMINSTER, NJ 079210000
Gen County:	Not reported
TSD EPA ID:	CAD044429835
TSD County:	Not reported
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.03
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAT080022791
Contact:	EH & S RECORDKEEPER-RRC
Telephone:	8005669347
Mailing Name:	RM1N200
Mailing Address:	308 S AKARD RM 900
Mailing City,St,Zip:	DALLAS, TX 752025399
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Empty containers less than 30 gallons
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.005
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAT080022791
Contact:	EH & S RECORDKEEPER-RRC
Telephone:	8005669347
Mailing Name:	RM1N200
Mailing Address:	308 S AKARD RM 900
Mailing City,St,Zip:	DALLAS, TX 752025399
Gen County:	Los Angeles
TSD EPA ID:	ARD069748192
TSD County:	99
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.05
Facility County:	Los Angeles

PACIFIC BELL (Continued) **1000250338**

Year:	2007
Gepaid:	CAT080032659
Contact:	AT&T EHS RECORDKEEPER-RRC
Telephone:	8005669347
Mailing Name:	Not reported
Mailing Address:	ONE AT&T WAY
Mailing City,St,Zip:	BEDMINSTER, NJ 079210000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.76
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
16 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	19905
Air District Name:	SC
SIC Code:	4922
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	19905
Air District Name:	SC
SIC Code:	4813
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CR943 **ROBERTSON SON** **EDR Historical Cleaners** **1009187898**
NE **455 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.077 mi.
409 ft. **Site 3 of 6 in cluster CR**

Relative: **Higher**

Actual: **296 ft.**

EDR Historical Cleaners:

Name:	ROBERTSON SON
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

CR944 **ROBERTSON WM** **EDR Historical Cleaners** **1009187546**
NE **457 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.077 mi.
409 ft. **Site 4 of 6 in cluster CR**

Relative: **Higher**

Actual: **295 ft.**

EDR Historical Cleaners:

Name:	ROBERTSON WM
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	ROBERTSON WM
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

CE945 **LOS ANGELES TIMES, A DIV OF TI** **EMI** **S106834736**
NE **213 S SPRING STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90053**
0.078 mi.
410 ft. **Site 3 of 6 in cluster CE**

Relative: **Higher**

Actual: **289 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	63798
Air District Name:	SC
SIC Code:	2711
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CO946 **South** **< 1/8** **0.078 mi.** **410 ft.**

STATE OF CALIF/DEPT OF GENERAL SERVICES
1149 S BROADWAY
LOS ANGELES, CA 90015

HAZNET **S108221421** **N/A**

Site 2 of 13 in cluster CO

Relative: **Lower**

Actual: **243 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002590837
Contact:	LEE MOORE
Telephone:	2139783798
Mailing Name:	Not reported
Mailing Address:	111 E 1ST ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	33.71
Facility County:	Not reported

CO947 **South** **< 1/8** **0.078 mi.** **410 ft.**

CANYON JOHNSON URBAN FUND (FUND) NEW PACIFIC EALITY LLC
1149 S BROADWAY
LOS ANGELES, CA 90015

HAZNET **S108200749** **N/A**

Site 3 of 13 in cluster CO

Relative: **Lower**

Actual: **243 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002579655
Contact:	TIM RICE/CHIEF ENG
Telephone:	2137416586
Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	290.76
Facility County:	Not reported

Year:	2004
Gepaid:	CAC002579655
Contact:	TIM RICE/CHIEF ENG
Telephone:	2137416586
Mailing Name:	Not reported
Mailing Address:	1150 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 90015
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	290.76
Facility County:	Not reported

CO948 **TRANSAMERICA OCCIDENTAL** **HAZNET** **S103946571**
South **1149 S BROADWAY ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.078 mi.
410 ft. **Site 4 of 13 in cluster CO**

Relative: **Lower**

Actual: **243 ft.**

HAZNET:

Year:	1999
Gepaid:	CAC002124744
Contact:	TRANSAMERICA OCCIDENTAL
Telephone:	2137422671
Mailing Name:	Not reported
Mailing Address:	1150 S BROADWAY ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Treatment, Tank
Tons:	1.3761
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC002124744
Contact:	TRANSAMERICA OCCIDENTAL
Telephone:	2137422671
Mailing Name:	Not reported
Mailing Address:	1150 S BROADWAY ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	2.7105
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC002124744
Contact:	TRANSAMERICA OCCIDENTAL
Telephone:	2137422671
Mailing Name:	Not reported
Mailing Address:	1150 S BROADWAY ST
Mailing City,St,Zip:	LOS ANGELES, CA 900150000
Gen County:	Los Angeles
TSD EPA ID:	CAD982484933
TSD County:	7
Waste Category:	Other empty containers 30 gallons or more
Disposal Method:	Recycler
Tons:	4.0000
Facility County:	Los Angeles

CO949 **CITY OF LOS ANGELES - SFI-1** **FINDS** **1010495882**
South **1149 S. BROADWAY ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.078 mi.
410 ft. **Site 5 of 13 in cluster CO**

Relative:
Lower

Actual:
243 ft.

FINDS:

Registry ID: 110032624257

Environmental Interest/Information System
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

CO950 **CITY OF LOS ANGELES - SFI-2** **FINDS** **1010495884**
South **1149 S. BROADWAY ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.078 mi.
410 ft. **Site 6 of 13 in cluster CO**

Relative:
Lower

Actual:
243 ft.

FINDS:

Registry ID: 110032624275

Environmental Interest/Information System
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

CO951	**ANACOMP INC**	**RCRA-NonGen**	**1000857889**
South	**1149 S BROADWAY ST**	**FINDS**	**CAD983673419**
< 1/8	**LOS ANGELES, CA 90015**	**HAZNET**	
0.078 mi.			
410 ft.	**Site 7 of 13 in cluster CO**		

Relative: **Lower**

Actual: **243 ft.**

RCRA-NonGen:

Date form received by agency:	08/17/1995
Facility name:	ANACOMP INC
Facility address:	1149 S BROADWAY ST STE B 226 BROADWAY BLDG LOS ANGELES, CA 90015
EPA ID:	CAD983673419
Contact:	TONY WEAVER
Contact address:	PO BOX 40888 INDIANAPOLIS, IN 462400888
Contact country:	US
Contact telephone:	(317) 844-9666
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ANACOMP INC
Owner/operator address:	P O BOX 40388 INDIANAPOLIS, IN 46240
Owner/operator country:	Not reported
Owner/operator telephone:	(317) 844-9666
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002902967

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource

ANACOMP INC (Continued) **1000857889**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year:	1995
Gepaid:	CAD983673419
Contact:	ANACOMP INC
Telephone:	6196799797
Mailing Name:	Not reported
Mailing Address:	11075 KNOTT AVE STE B
Mailing City,St,Zip:	CYPRESS, CA 906300000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	Los Angeles

CO952
South
< 1/8
0.078 mi.
410 ft.

LOPEZ CANYON ENVIRONMENTAL CENTER
1149 SOUTH BROADWAY #800
LOS ANGELES, CA 91342

Site 8 of 13 in cluster CO

SWF/LF **S111075990**
N/A

Relative:
Lower

Actual:
243 ft.

LOS ANGELES CO. LF:

Site ID:	2124
Alt. Address:	Not reported
Site Contact:	Not reported
Site Contact Phone:	(213) 485-3002
Site Email:	Not reported
Site Website:	Not reported
Site Type:	Composting Facility
Site SWIS Number:	19-AR-1222
Operator Name:	City of Los Angeles - Bureau of Sanitation
Operator Address:	Not reported
Operator City/State/Zip:	Not reported
Operator Contact:	Paul Lebel
Operator Telephone:	Not reported
Operator Email:	Paul.Lebel@lacity.org
Owner Name:	Unknown
Owner Address:	Not reported
Owner City/State/Zip:	Not reported
Owner Contact:	Not reported
Owner Telephone:	Not reported
Owner Email:	Not reported
Beginning Operation Date:	Not reported
Disposal Area(Acre):	Not reported
Local Enforcement Agency:	Not reported
Maximun Depth Fill(Ft):	Not reported
Permitted Capacity:	Not reported
Present Use:	Not reported
Remaining Capacity(Million):	Not reported

LOPEZ CANYON ENVIRONMENTAL CENTER (Continued) **S111075990**

Status:	Active
Waste Accepted:	Green Materials
Hours of Operation:	Not reported
Area:	Not reported

CO953
South
< 1/8
0.078 mi.
410 ft.

MFS INTELENET
1149 S BROADWAY
LOS ANGELES, CA 90015

Database(s): **UST**
EDR ID Number: **U003780587**
EPA ID Number: **N/A**

Site 9 of 13 in cluster CO

Relative:
Lower

Actual:
243 ft.

UST:

Facility ID:	24767
Latitude:	34.03868
Longitude:	-118.25984

CO954
South
< 1/8
0.078 mi.
410 ft.

TRANSAMERICA CENTER-OCCIDENTAL
1149 SOUTH BROADWAY
LOS ANGELES, CA 90015

Database(s): **EMI**
EDR ID Number: **S106841309**
EPA ID Number: **N/A**

Site 10 of 13 in cluster CO

Relative:
Lower

Actual:
243 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	71629
Air District Name:	SC
SIC Code:	6311
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CR955
NE
< 1/8
0.078 mi.
410 ft.

AMER TELE & TELE CO LOS ANGELES #1
433 S OLIVE ST
LOS ANGELES, CA 90013

Database(s): **RCRA-SQG**, **FINDS**
EDR ID Number: **1000351950**
EPA ID Number: **CAT080032659**

Site 5 of 6 in cluster CR

Relative:
Higher

Actual:
309 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	AMER TELE & TELE CO LOS ANGELES #1
Facility address:	433 S OLIVE ST LOS ANGELES, CA 90014
EPA ID:	CAT080032659
Mailing address:	PO BOX 3288 RM 280 MTRL MGMT SAN FRANCISCO, CA 94119
Contact:	Not reported

AMER TELE & TELE CO LOS ANGELES #1 (Continued) **1000351950**

Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	AMERICAN TELEPHONE AND TELEGRAPH COMPANY
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	05/04/1981
Facility name:	AMER TELE & TELE CO LOS ANGELES #1
Classification:	Large Quantity Generator

AMER TELE & TELE CO LOS ANGELES #1 (Continued) **1000351950**

Violation Status: No violations found

FINDS:

Registry ID: 110006188231

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CR956 **AT&T CORP** **HAZNET** **S104583960**
NE **433 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.078 mi.
410 ft. **Site 6 of 6 in cluster CR**

Relative:
Higher

Actual:
309 ft.

HAZNET:

Year:	2002
Gepaid:	CAT080032659
Contact:	3E COMPANY
Telephone:	7606028700
Mailing Name:	Not reported
Mailing Address:	1905 ASTON AVE STE 100
Mailing City,St,Zip:	CARLSBAD, CA 920085017
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Treatment, Incineration
Tons:	0.04
Facility County:	Not reported

Year:	1995
Gepaid:	CAT080032659
Contact:	AT&T CORP
Telephone:	2016454113
Mailing Name:	Not reported
Mailing Address:	227 W MONROE FLR 5
Mailing City,St,Zip:	CHICAGO, IL 606065017
Gen County:	Los Angeles
TSD EPA ID:	CAD067786749
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	.8878
Facility County:	Los Angeles

957 NE < 1/8 0.078 mi. 411 ft.

257 S SPRING ST LLC
257 S SPRING ST
LOS ANGELES, CA 90012

HAZNET S108196197 N/A

Relative: Higher
Actual: 286 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002573427
Contact:	GREG REAUME
Telephone:	2136208028
Mailing Name:	Not reported
Mailing Address:	257 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 90012
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	33.71
Facility County:	Not reported

CP958 NE < 1/8 0.078 mi. 411 ft.

THE ANGELUS PLAZA
300 SO. OLIVE
LOS ANGELES, CA 90012

Site 2 of 4 in cluster CP

HAZNET S103990744 N/A

Relative: Higher
Actual: 386 ft.

HAZNET:

Year:	1995
Gepaid:	CAC000928792
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	255 SO. HILL ST.
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	.4170
Facility County:	Los Angeles

BL959 ENE < 1/8 0.078 mi. 412 ft.

SPECIALIZED ENVIORNMENTAL INC
410 SO SPRING STREET
LOS ANGELES, CA 90014

Site 11 of 15 in cluster BL

HAZNET S105086185 N/A

Relative: Higher
Actual: 273 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002274577
Contact:	SPEC ENVIRN INC
Telephone:	8189957172
Mailing Name:	Not reported
Mailing Address:	16530 VENTURE BLVD SUITE 202
Mailing City,St,Zip:	ENCINO, CA 914360000

SPECIALIZED ENVIORNMENTAL INC (Continued) **S105086185**

Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	96.9220
Facility County:	Los Angeles
Year:	2000
Gepaid:	CAC002274577
Contact:	SPEC ENVIRN INC
Telephone:	8189957172
Mailing Name:	Not reported
Mailing Address:	16530 VENTURE BLVD SUITE 202
Mailing City,St,Zip:	ENCINO, CA 914360000
Gen County:	Los Angeles
TSD EPA ID:	AZD983473539
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Disposal, Land Fill
Tons:	.2204
Facility County:	Los Angeles
Year:	2000
Gepaid:	CAC002274577
Contact:	SPEC ENVIRN INC
Telephone:	8189957172
Mailing Name:	Not reported
Mailing Address:	16530 VENTURE BLVD SUITE 202
Mailing City,St,Zip:	ENCINO, CA 914360000
Gen County:	Los Angeles
TSD EPA ID:	AZD983473539
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	3.3489
Facility County:	Los Angeles

CS960 **LA CITY DEPT WATER & POWER** **LUST** **S106517261**
NNE **111 HOPE ST N** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
412 ft. **Site 1 of 16 in cluster CS**

Relative: Higher

Actual: 403 ft.

LUST:

Region:	STATE
Global Id:	T0603700506
Latitude:	34.0564428
Longitude:	-118.2498743
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/29/2004
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	AT
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120070
LOC Case Number:	Not reported
File Location:	Not reported

LA CITY DEPT WATER & POWER (Continued) **S106517261**

Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id: T0603700506
Contact Type: Local Agency Caseworker
Contact Name: ELOY LUNA
Organization Name: LOS ANGELES, CITY OF
Address: 200 North Main Street, Suite 1780
City: LOS ANGELES
Email: eloy.luna@lacity.org
Phone Number: Not reported

Global Id: T0603700506
Contact Type: Regional Board Caseworker
Contact Name: ARMAN TOUMARI
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 WEST 4TH STREET, SUITE 200
City: LOS ANGELES
Email: atoumari@waterboards.ca.gov
Phone Number: 2135766708

LUST:

Global Id: T0603700506
Action Type: RESPONSE
Date: 01/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: ENFORCEMENT
Date: 10/27/2004
Action: Site Visit / Inspection / Sampling

Global Id: T0603700506
Action Type: ENFORCEMENT
Date: 10/29/2004
Action: Closure/No Further Action Letter

Global Id: T0603700506
Action Type: ENFORCEMENT
Date: 04/16/2003
Action: Technical Correspondence / Assistance / Other

Global Id: T0603700506
Action Type: REMEDIATION
Date: 01/01/1950
Action: Excavation

Global Id: T0603700506
Action Type: RESPONSE
Date: 04/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700506

LA CITY DEPT WATER & POWER (Continued) **S106517261**

Action Type: REMEDIATION
Date: 01/01/1950
Action: Free Product Removal

Global Id: T0603700506
Action Type: Other
Date: 01/01/1950
Action: Leak Reported

Global Id: T0603700506
Action Type: RESPONSE
Date: 10/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: Other
Date: 01/01/1950
Action: Leak Discovery

Global Id: T0603700506
Action Type: RESPONSE
Date: 08/15/2002
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 10/15/2002
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 01/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 07/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 07/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 10/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: RESPONSE
Date: 04/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0603700506
Action Type: ENFORCEMENT
Date: 08/12/2002

LA CITY DEPT WATER & POWER (Continued) **S106517261**

Action: Staff Letter

LUST REG 4:

Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900120070
Status: Post remedial action monitoring
Substance: Gasoline
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Remove Free Product
Global ID: T0603700506
W Global ID: W0605100649
Staff: AT
Local Agency: 19050
Cross Street: Not reported
Enforcement Type: TA-GEN
Date Leak Discovered: 1/17/1984
Date Leak First Reported: 6/29/1984
Date Leak Record Entered: 12/31/1986
Date Confirmation Began: Not reported
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 8/14/2002
Date the Case was Closed: Not reported
How Leak Discovered: Not reported
How Leak Stopped: Not reported
Cause of Leak: UNK
Leak Source: UNK
Operator: KURODA, RANDALL
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported
Approx. Dist To Production Well (ft): 2710.8267851142112053319989676
Source of Cleanup Funding: UNK
Preliminary Site Assessment Workplan Submitted: 5/27/1992
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: 9/27/1996
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: 12/13/2002
Enforcement Action Date: Not reported
Historical Max MTBE Date: 2/14/2002
Hist Max MTBE Conc in Groundwater: 17.3
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Yes
GW Qualifier: =
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: J. ALAN WALTI
RP Address: 111 N. HOPE ST, RM #1116
Program: LUST
Lat/Long: 34.0564428 / -1
Local Agency Staff: PEJ
Beneficial Use: Not reported

LA CITY DEPT WATER & POWER (Continued) **S106517261**

Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600649-001GEN
Summary:	11,000 GAL OF FP RECOVERED 1984-1991; 4/14/00 1ST QTR GW MON RPT 2000; 7/13/00 2ND QTR GW MON RPT 2000; 10/2000 3RD QTR GW MON RPT 2000; 1/18/01 4TH QTR GW MON RPT 2000; 413/01 1ST QTR GW MON RPT 2001

CQ961
NE
< 1/8
0.078 mi.
412 ft.

THE MUTUAL GARAGE BUILDING
363 OLIVE ST S
LOS ANGELES, CA 90013

HIST CORTESE **S101297179**
LUST **N/A**

Site 2 of 4 in cluster CQ

Relative:
Higher

Actual:
350 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900130025

LUST:

Region:	STATE
Global Id:	T0603700540
Latitude:	34.0514483
Longitude:	-118.2509925
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/19/1996
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900130025
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700540
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700540
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

THE MUTUAL GARAGE BUILDING (Continued) **S101297179**

LUST:

Global Id:	T0603700540
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900130025
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Soil
Abatement Method Used at the Site:	Not reported
Global ID:	T0603700540
W Global ID:	W0605100582
Staff:	UNK
Local Agency:	19050
Cross Street:	4TH
Enforcement Type:	Not reported
Date Leak Discovered:	Not reported
Date Leak First Reported:	1/17/1986
Date Leak Record Entered:	12/31/1986
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	3/27/1992
Date the Case was Closed:	7/19/1996
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	UNK
Leak Source:	UNK
Operator:	Not reported
Water System:	YMCA CAMP OF LOS ANGELES 2
Well Name:	Not reported
Approx. Dist To Production Well (ft):	1612.209829764908241499506889
Source of Cleanup Funding:	UNK
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	6/16/1988
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	MUTUAL GARAGE BUILDING

THE MUTUAL GARAGE BUILDING (Continued) **S101297179**

RP Address:	363 S OLIVE ST, LOS ANGELES CA 90013
Program:	LUST
Lat/Long:	34.0513411 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600582-001GEN
Summary:	LDP APPROVED 02/86. PLAN NOT YET IMPLEMENTED.

BP962 **SUB SHOP 03** **HIST UST** **U001560541**
NE **120 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
413 ft. **Site 5 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

HIST UST:

Region:	STATE
Facility ID:	00000068203
Facility Type:	Not reported
Other Type:	Not reported
Total Tanks:	0001
Contact Name:	Not reported
Telephone:	2136203964
Owner Name:	CALIF DEPT OF TRANSPORTATION
Owner Address:	1120 N STREET
Owner City,St,Zip:	SACRAMENTO, CA 95814

Tank Num:	001
Container Num:	0000000001
Year Installed:	1956
Tank Capacity:	00000200
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Tank Construction:	Not reported
Leak Detection:	Not reported

BP963 **07 DIST OFFICE** **HIST UST** **U001560491**
NE **120 S SPRING ST** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **EMI**
0.078 mi.
413 ft. **Site 6 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

HIST UST:

Region:	STATE
Facility ID:	00000068072
Facility Type:	Not reported
Other Type:	Not reported
Total Tanks:	0003
Contact Name:	Not reported
Telephone:	2136203964
Owner Name:	CALIF DEPT OF TRANSPORTATION
Owner Address:	1120 N STREET
Owner City,St,Zip:	SACRAMENTO, CA 95814

07 DIST OFFICE (Continued) **U001560491**

Tank Num:	001
Container Num:	0000000001
Year Installed:	1960
Tank Capacity:	00003000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Not reported

Tank Num:	002
Container Num:	0000000002
Year Installed:	1983
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Not reported

Tank Num:	003
Container Num:	0000000003
Year Installed:	1983
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Not reported

HAZNET:

Year:	2005
Gepaid:	CAL000231384
Contact:	CHRIS ROBLES/GEN SVCS/BLG MGR
Telephone:	2133052484
Mailing Name:	Not reported
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Treatment, Tank
Tons:	5.42
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000231384
Contact:	CHRIS ROBLES/GEN SVCS/BLG MGR
Telephone:	2133052484
Mailing Name:	Not reported
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Treatment, Tank
Tons:	5.42
Facility County:	Not reported

07 DIST OFFICE (Continued) **U001560491**

Year:	2003
Gepaid:	CAL000231384
Contact:	CHRIS ROBLES/GEN SVCS/BLG MGR
Telephone:	2133052484
Mailing Name:	SYLVESTER WILSON/FAC MGR/MS 17
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Paint sludge
Disposal Method:	Transfer Station
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000231384
Contact:	CHRIS ROBLES/GEN SVCS/BLG MGR
Telephone:	2133052484
Mailing Name:	SYLVESTER WILSON/FAC MGR/MS 17
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Recycler
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAL000231384
Contact:	CHRIS ROBLES/GEN SVCS/BLG MGR
Telephone:	2133052484
Mailing Name:	SYLVESTER WILSON/FAC MGR/MS 17
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Recycler
Tons:	0.06
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
17 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	1914
Air District Name:	SC
SIC Code:	9611
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported

07 DIST OFFICE (Continued) **U001560491**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BP964 **CALTRANS** **EMI** **S106827910**
NE **120 SO. SPRING ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
413 ft. **Site 7 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	1914
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BP965 **CALTRANS DISTRICT 7** **RCRA-NonGen** **1000419389**
NE **120 S SPRING ST** **FINDS** **CAD980895635**
< 1/8 **LOS ANGELES, CA 90012** **HAZNET**
0.078 mi.
413 ft. **Site 8 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

RCRA-NonGen:

Date form received by agency:	03/19/1985
Facility name:	CALTRANS DISTRICT 7
Facility address:	120 S SPRING ST LOS ANGELES, CA 90012
EPA ID:	CAD980895635
Mailing address:	PO BOX 2304 TERMINAL ANNEX LOS ANGELES, CA 90051
Contact:	ENVIRONMENTAL MANAGER
Contact address:	120 S SPRING ST LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(213) 620-3700
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

CALTRANS DISTRICT 7 (Continued) **1000419389**

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	State
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	State
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002676863

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 2005
Gepaid: CAD980895635

CALTRANS DISTRICT 7 (Continued) **1000419389**

Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	0.11
Facility County:	Not reported

Year:	2004
Gepaid:	CAD980895635
Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	0.11
Facility County:	Not reported

Year:	2003
Gepaid:	CAD980895635
Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAD980895635
Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	0.2
Facility County:	Los Angeles

CALTRANS DISTRICT 7 (Continued) **1000419389**

Year:	2003
Gepaid:	CAD980895635
Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	2.49
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
57 additional CA_HAZNET: record(s) in the EDR Site Report.

BP966 **DEPT OF TRANSPORTATION** **RCRA-SQG** **1000393256**
NE **120 S SPRING ST** **CAD982467581**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
413 ft. **Site 9 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	DEPT OF TRANSPORTATION
Facility address:	120 S SPRING ST LOS ANGELES, CA 90012
EPA ID:	CAD982467581
Mailing address:	S SPRING ST LOS ANGELES, CA 90012
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	STATE OF CALIFORNIA
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	State
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

DEPT OF TRANSPORTATION (Continued) **1000393256**

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: State
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

BP967 **STATE OF CALIFORNIA** **UST** **U003780766**
NE **120 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
413 ft. **Site 10 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

UST:
Facility ID: 24321
Latitude: 34.0527
Longitude: -118.24468

SWEEPS UST:
Status: A
Comp Number: 3658
Number: 5
Board Of Equalization: 44-008226
Ref Date: 03-05-93
Act Date: 03-05-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-003658-000001
Actv Date: 04-20-88
Capacity: 200
Tank Use: OIL
Stg: W
Content: WASTE OIL
Number Of Tanks: 3

STATE OF CALIFORNIA (Continued) **U003780766**

Status:	A
Comp Number:	3658
Number:	5
Board Of Equalization:	44-008226
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003658-000005
Actv Date:	04-20-88
Capacity:	3000
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	Not reported

Status:	A
Comp Number:	3658
Number:	5
Board Of Equalization:	44-008226
Ref Date:	03-05-93
Act Date:	03-05-93
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-003658-000006
Actv Date:	04-20-88
Capacity:	12000
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

BP968
NE
< 1/8
0.078 mi.
413 ft.

CALTRANS -EQUIPMENT SHOP
120 S SPRING ST
LOS ANGELES, CA 90012

Site 11 of 12 in cluster BP

HAZNET **S103954425**
N/A

Relative:
Higher

Actual:
295 ft.

HAZNET:

Year:	1996
Gepaid:	CAD982467581
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123602
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Not reported
Tons:	.2293
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAD982467581

CALTRANS -EQUIPMENT SHOP (Continued) **S103954425**

Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	120 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123602
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Recycler
Tons:	.0125
Facility County:	Los Angeles

BP969 **CALTRANS DISTRICT 7 - SHOP** **CHMIRS** **S100277423**
NE **120 SOUTH SPRING STREET** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
413 ft. **Site 12 of 12 in cluster BP**

Relative:
Higher

Actual:
295 ft.

CHMIRS:

OES Incident Number:	9116179
OES notification:	Not reported
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	03-APR-91
Date Completed:	**03-APR-91**
Property Use:	500
Agency Id Number:	19105
Agency Incident Number:	380
Time Notified:	1417
Time Completed:	1610
Surrounding Area:	500
Estimated Temperature:	80
Property Management:	P
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	N
Resp Agncy Personel # Of Decontaminated:	0
Responding Agency Personel # Of Injuries:	0
Responding Agency Personel # Of Fatalities:	0
Others Number Of Decontaminated:	0
Others Number Of Injuries:	0
Others Number Of Fatalities:	0
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	GREGORY E. NEWLAND GN0168
Report Date:	03-APR-91
Comments:	Y
Facility Telephone:	213 485-6003
Waterway Involved:	Not reported

CALTRANS DISTRICT 7 - SHOP (Continued) **S100277423**

Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Not reported
Site Type:	Not reported
E Date:	22-JUN-92
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

HAZNET:

Year:	2001
Gepaid:	CAL000110277
Contact:	RICHARD CRAWFORD
Telephone:	2136203328
Mailing Name:	Not reported
Mailing Address:	2187 RIVERSIDE DR
Mailing City,St,Zip:	LOS ANGELES, CA 900390000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.6
Facility County:	Not reported

CI970 **NE** **< 1/8** **0.078 mi.** **413 ft.**

MARCUS STEAK HOUSE
633 S OLIVE ST
LOS ANGELES, CA 90014

EMI **S106835099** **N/A**

Site 10 of 13 in cluster CI

Relative: Higher

Actual: 268 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	70629
Air District Name:	SC
SIC Code:	5812
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CT971 **NE** **< 1/8** **0.078 mi.** **413 ft.**

200 NORTH SPRING ST/LA CITY HALL
LOS ANGELES, CA 90012

ERNS **92275499** **N/A**

Site 1 of 8 in cluster CT

Relative: Higher

Actual: 306 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

CI972 **NE** **< 1/8** **0.078 mi.** **413 ft.**

OVIATT INVESTMENT GROUP LLC
617 S OLIVE ST
LOS ANGELES, CA 90014

HAZNET **S108215714** **N/A**

Site 11 of 13 in cluster CI

Relative: Higher

Actual: 269 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002575533
Contact:	MIKE NEILSEN
Telephone:	3102862550
Mailing Name:	Not reported
Mailing Address:	400 S BEVERLY DR STE 400
Mailing City,St,Zip:	BEVERLY HILLS, CA 90212
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	3.12
Facility County:	Not reported

BU973 **YEE HENRY** **EDR Historical Cleaners** **1009191429**
NE **259 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.078 mi.
414 ft. **Site 7 of 10 in cluster BU**

Relative:
Higher

Actual:
385 ft.

EDR Historical Cleaners:

Name:	YEE HENRY
Year:	1942
Type:	LAUNDRIES ORIENTAL

CI974 **NBBJ WEST LIMITED PARTNERSHIP** **HAZNET** **S103979013**
NE **631 SOUTH OLIVE # 900** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.078 mi.
414 ft. **Site 12 of 13 in cluster CI**

Relative:
Higher

Actual:
269 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000168494
Contact:	JIM JONASSEN-MANAGING PARTNER
Telephone:	2062235555
Mailing Name:	Not reported
Mailing Address:	13335 MAXELLA AVE
Mailing City,St,Zip:	MARINA DEL REY, CA 902920000
Gen County:	Los Angeles
TSD EPA ID:	CAL000161743
TSD County:	Santa Clara
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	.9174
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000168494
Contact:	JIM JONASSEN-MANAGING PARTNER
Telephone:	2062235555
Mailing Name:	Not reported
Mailing Address:	13335 MAXELLA AVE
Mailing City,St,Zip:	MARINA DEL REY, CA 902920000
Gen County:	Los Angeles
TSD EPA ID:	CAL000161743
TSD County:	Santa Clara
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	0.9174
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000168494
Contact:	JIM JONASSEN-MANAGING PARTNER
Telephone:	2062235555
Mailing Name:	Not reported
Mailing Address:	13335 MAXELLA AVE
Mailing City,St,Zip:	MARINA DEL REY, CA 902920000
Gen County:	Los Angeles
TSD EPA ID:	CAL000161743
TSD County:	Santa Clara
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler

NBBJ WEST LIMITED PARTNERSHIP (Continued) **S103979013**

Tons:	.4587
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000168494
Contact:	JIM JONASSEN-MANAGING PARTNER
Telephone:	2062235555
Mailing Name:	Not reported
Mailing Address:	13335 MAXELLA AVE
Mailing City,St,Zip:	MARINA DEL REY, CA 902920000
Gen County:	Los Angeles
TSD EPA ID:	CAL000161743
TSD County:	Santa Clara
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	1.1884
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000168494
Contact:	JIM JONASSEN-MANAGING PARTNER
Telephone:	2062235555
Mailing Name:	Not reported
Mailing Address:	13335 MAXELLA AVE
Mailing City,St,Zip:	MARINA DEL REY, CA 902920000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.0834
Facility County:	Los Angeles

~~Click this hyperlink~~ while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

CI975 **CHROMA COPY INTERNATIONAL** **HAZNET** **S102814685**
NE **631 S OLIVE ST STE 600** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.078 mi.
414 ft. **Site 13 of 13 in cluster CI**

Relative:
Higher

Actual:
269 ft.

HAZNET:

Year:	1996
Gepaid:	CAL000068667
Contact:	MANNING DAVID/BAR-TOR AMNON
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	201 S FIGUREOA ST STE 100
Mailing City,St,Zip:	LOS ANGELES, CA 900122543
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.0208
Facility County:	Los Angeles

CHROMA COPY INTERNATIONAL (Continued) **S102814685**

Year:	1995
Gepaid:	CAL000068667
Contact:	MANNING DAVID/BAR-TOR AMNON
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	201 S FIGUREOA ST STE 100
Mailing City,St,Zip:	LOS ANGELES, CA 900122543
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0250
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000068667
Contact:	MANNING DAVID/BAR-TOR AMNON
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	201 S FIGUREOA ST STE 100
Mailing City,St,Zip:	LOS ANGELES, CA 900122543
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0275
Facility County:	Los Angeles

BU976 **OMNI LOS ANGELES HOTEL** **HAZNET** **S108751965**
NE **251 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.078 mi.
414 ft. **Site 8 of 10 in cluster BU**

Relative: Higher

Actual: 384 ft.

HAZNET:

Year:	2008
Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.45
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST

OMNI LOS ANGELES HOTEL (Continued) **S108751965**

Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	NVR000076158
TSD County:	99
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	Solvents Recovery
Tons:	0.275
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	NVR000076158
TSD County:	99
Waste Category:	Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method:	Solvents Recovery
Tons:	0.7
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	NVR000076158
TSD County:	99
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Solvents Recovery
Tons:	Not reported
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	NVR000076158
TSD County:	99
Waste Category:	Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method:	Solvents Recovery
Tons:	0.25
Facility County:	Los Angeles

OMNI LOS ANGELES HOTEL (Continued) **S108751965**

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BU977 **CALIFORNIA PLAZA HOTEL, L P** **CA FID UST** **S101584629**
NE **251 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **EMI**
0.078 mi.
414 ft. **Site 9 of 10 in cluster BU**

Relative:
Higher

Actual:
384 ft.

CA FID UST:

Facility ID:	19013634
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	UNK
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7924
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-05-93
Act Date:	03-03-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	91212
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1

CALIFORNIA PLAZA HOTEL, L P (Continued) **S101584629**

Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1995
County Code: 19
Air Basin: SC
Facility ID: 91212
Air District Name: SC
SIC Code: 7011
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1996
County Code: 19
Air Basin: SC
Facility ID: 91212
Air District Name: SC
SIC Code: 7011
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 2
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

BU978	**HOTEL INTER CONTINENTAL**	**RCRA-SQG**	**1000819810**
NE	**251 S OLIVE**	**FINDS**	**CAD983658113**
< 1/8	**LOS ANGELES, CA 90012**	**HAZNET**	
0.078 mi.			
414 ft.	**Site 10 of 10 in cluster BU**		

Relative:
Higher

Actual:
384 ft.

RCRA-SQG:
Date form received by agency: 01/22/1993
Facility name: HOTEL INTER CONTINENTAL
Facility address: 251 S OLIVE
LOS ANGELES, CA 90012
EPA ID: CAD983658113
Mailing address: S OLIVE
LOS ANGELES, CA 90012
Contact: SELWYN MENDRIES
Contact address: 251 S OLIVE
LOS ANGELES, CA 90012

HOTEL INTER CONTINENTAL (Continued) **1000819810**

Contact country:	US
Contact telephone:	(213) 356-4064
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CAL PLAZA HOTEL LP CARE OF DANIEL MONET
Owner/operator address:	251 S OLIVE ST LOS ANGELES, CA 90012
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 617-3300
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002891737

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:

Year: 2005

HOTEL INTER CONTINENTAL (Continued) **1000819810**

Gepaid:	CAD983658113
Contact:	JOHN ANDERSON/CONTROLLER
Telephone:	2133564026
Mailing Name:	Not reported
Mailing Address:	251 S OLIVE ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123002
Gen County:	Los Angeles
TSD EPA ID:	NVR000076158
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	Not reported
Facility County:	Not reported

CK979
ENE
< 1/8
0.078 mi.
414 ft.

311 SOUTH SPRING STREET CO
311 S SPRING ST
LOS ANGELES, CA 90013

HAZNET **S105084812**
N/A

Site 2 of 5 in cluster CK

Relative:
Higher

Actual:
280 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002209945
Contact:	3AA SO SPRING STREET CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	10501 WILSHIRE BLVD STE 2206
Mailing City,St,Zip:	LOS ANGELES, CA 900240000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.4170
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002209945
Contact:	3AA SO SPRING STREET CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	10501 WILSHIRE BLVD STE 2206
Mailing City,St,Zip:	LOS ANGELES, CA 900240000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Oil/water separation sludge
Disposal Method:	Recycler
Tons:	.1751
Facility County:	Los Angeles

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
CK980 **ENE** **< 1/8** **0.078 mi.** **414 ft.**	**311 SOUTH SPRING STREET CO** **311 S SPRING ST SUITE 620** **LOS ANGELES, CA 90013** **Site 3 of 5 in cluster CK**	**EMI**	**S106825053** **N/A**

Relative: **Higher**

Actual: **280 ft.**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76691
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	76691
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
CP981 **NE** **< 1/8** **0.079 mi.** **415 ft.**	**ZISKA MATHEW** **331 S OLIVE ST** **LOS ANGELES, CA** **Site 3 of 4 in cluster CP**	**EDR Historical Auto Stations**	**1009080210** **N/A**

Relative: **Higher**

Actual: **380 ft.**

EDR Historical Auto Stations:

Name:	ZISKA MICHL
Year:	1924
Type:	AUTOMOBILE REPAIRING

Name:	ZISKA MATHEW
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

CP982 **BUNKER HILL ASSOC** **CA FID UST** **S101588012**
NE **335 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.079 mi.
415 ft. **Site 4 of 4 in cluster CP**

Relative: **Higher**

Actual: **377 ft.**

CA FID UST:

Facility ID:	19056244
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	335 S OLIVE ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6467
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CQ983 **COMMUNITY REDEVELOPMENT AGENCY** **CA FID UST** **S101582707**
NE **363 S OLIVE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.079 mi.
416 ft. **Site 3 of 4 in cluster CQ**

Relative: **Higher**

Actual: **350 ft.**

CA FID UST:

Facility ID:	19001145
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	363 S OLIVE ST
Mailing Address 2:	Not reported

COMMUNITY REDEVELOPMENT AGENCY (Continued) **S101582707**

Mailing City,St,Zip: LOS ANGELES 900130000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: Not reported
Comp Number: 6934
Number: Not reported
Board Of Equalization: Not reported
Ref Date: Not reported
Act Date: Not reported
Created Date: Not reported
Tank Status: Not reported
Owner Tank Id: Not reported
Swrcb Tank Id: Not reported
Actv Date: Not reported
Capacity: Not reported
Tank Use: Not reported
Stg: Not reported
Content: Not reported
Number Of Tanks: Not reported

CQ984 **METROPOLITAN WATER DIST GARAGE** **EDR Historical Auto Stations** **1009082118**
NE **359 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.079 mi.
416 ft. **Site 4 of 4 in cluster CQ**

Relative:
Higher

Actual:
352 ft.

EDR Historical Auto Stations:
Name: METROPOLITAN WATER DIST GARAGE
Year: 1942
Type: AUTOMOBILE REPAIRING

BK985 **S & H DRY CLEANERS** **HAZNET** **S102810541**
ENE **511 S SPRING** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.079 mi.
418 ft. **Site 29 of 34 in cluster BK**

Relative:
Higher

Actual:
266 ft.

HAZNET:
Year: 2000
Gepaid: CAL000022191
Contact: YAMINI DARYOUSH
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 511 S SPRING ST
Mailing City,St,Zip: LOS ANGELES, CA 900132303
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene,

S & H DRY CLEANERS (Continued) **S102810541**

etc)
Disposal Method: Recycler
Tons: .2107
Facility County: Los Angeles

Year: 1999
Gepaid: CAL000022191
Contact: YAMINI DARYOUSH
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 511 S SPRING ST
Mailing City,St,Zip: LOS ANGELES, CA 900132303
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: 21.3015
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000022191
Contact: YAMINI DARYOUSH
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 511 S SPRING ST
Mailing City,St,Zip: LOS ANGELES, CA 900132303
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Recycler
Tons: 1.2850
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000022191
Contact: YAMINI DARYOUSH
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 511 S SPRING ST
Mailing City,St,Zip: LOS ANGELES, CA 900132303
Gen County: Los Angeles
TSD EPA ID: CAD981397417
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Recycler
Tons: .0000
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000022191
Contact: YAMINI DARYOUSH
Telephone: 0000000000
Mailing Name: Not reported

S & H DRY CLEANERS (Continued) **S102810541**

Mailing Address:	511 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900132303
Gen County:	Los Angeles
TSD EPA ID:	CAD981397417
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	.0000
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

CK986
ENE
< 1/8
0.079 mi.
419 ft.

CAILFORINA DEPARTMENT OF GENERAL SERVICE
300 S SPRING ST
LOS ANGELES, CA 90014

CA FID UST
SWEEPS UST
HAZNET

S101586776
N/A

Site 4 of 5 in cluster CK

Relative:
Higher

Actual:
281 ft.

CA FID UST:

Facility ID:	19054453
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136876565
Mail To:	Not reported
Mailing Address:	311 S SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	5701
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

CAILFORINA DEPARTMENT OF GENERAL SERVICE (Continued) **S101586776**

HAZNET:

Year:	2008
Gepaid:	CAL000091696
Contact:	GARY LARSON
Telephone:	2138972242
Mailing Name:	BPM HEADQUATERS
Mailing Address:	707 3RD ST 5TH FLOOR
Mailing City,St,Zip:	W SACRAMENTO, CA 95605
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.38
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000091696
Contact:	GARY LARSON
Telephone:	2138972242
Mailing Name:	BPM HEADQUATERS
Mailing Address:	707 3RD ST 5TH FLOOR
Mailing City,St,Zip:	W SACRAMENTO, CA 95605
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000091696
Contact:	GARY LARSON
Telephone:	2138972242
Mailing Name:	BPM HEADQUATERS
Mailing Address:	707 3RD ST 5TH FLOOR
Mailing City,St,Zip:	W SACRAMENTO, CA 95605
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1815
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000091696
Contact:	GARY LARSON
Telephone:	2138972242
Mailing Name:	BPM HEADQUATERS
Mailing Address:	707 3RD ST 5TH FLOOR
Mailing City,St,Zip:	W SACRAMENTO, CA 95605
Gen County:	Los Angeles

CAILFORINA DEPARTMENT OF GENERAL SERVICE (Continued) **S101586776**

TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus inorganics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.01668
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000091696
Contact: GARY LARSON
Telephone: 2138972242
Mailing Name: BPM HEADQUATERS
Mailing Address: 707 3RD ST 5TH FLOOR
Mailing City,St,Zip: W SACRAMENTO, CA 95605
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 0.363
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

CE987
NE
< 1/8
0.079 mi.
419 ft.

DAILY JOURNAL CORP
210 S SPRING ST
LOS ANGELES, CA 90012

HAZNET **S103641241**
N/A

Site 4 of 6 in cluster CE

Relative:
Higher

Actual:
289 ft.

HAZNET:
Year: 2006
Gepaid: CAD981367618
Contact: TU TO
Telephone: 2132295300
Mailing Name: Not reported
Mailing Address: 915 E FIRST STREET
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: TXD077603371
TSD County: 99
Waste Category: Unspecified organic liquid mixture
Disposal Method: H06
Tons: 0.15
Facility County: Los Angeles

Year: 2002
Gepaid: CAD981367618
Contact: TU TO
Telephone: 2132295300
Mailing Name: Not reported
Mailing Address: 915 E FIRST STREET
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: Not reported

DAILY JOURNAL CORP (Continued) **S103641241**

TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	0.10
Facility County:	Not reported

Year:	2001
Gepaid:	CAD981367618
Contact:	TU TO
Telephone:	2132295300
Mailing Name:	Not reported
Mailing Address:	915 E FIRST STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	0.22
Facility County:	Not reported

Year:	2000
Gepaid:	CAD981367618
Contact:	DAILY JOURNAL CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	915 E FIRST ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123710
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Transfer Station
Tons:	.3376
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD981367618
Contact:	DAILY JOURNAL CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	915 E FIRST ST
Mailing City,St,Zip:	LOS ANGELES, CA 900123710
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.2919
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
10 additional CA_HAZNET: record(s) in the EDR Site Report.

CJ988 **SE** **< 1/8** **0.080 mi.** **420 ft.**

CAUNCE THOS
938 S MAIN ST
LOS ANGELES, CA

EDR Historical Cleaners **1009187707** **N/A**

Site 2 of 19 in cluster CJ

Relative: **Lower**

Actual: **245 ft.**

EDR Historical Cleaners:

Name:	CAUNCE THOS
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

CE989 **NE** **< 1/8** **0.080 mi.** **420 ft.**

PARKING STRUCTURE 220 S.SPRING
220 S SPRING ST
LOS ANGELES, CA 90053

WDS **S105255134** **N/A**

Site 5 of 6 in cluster CE

Relative: **Higher**

Actual: **288 ft.**

CA WDS:

Facility ID:	Los Angeles River 196400051
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAG994004 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	Not reported
Facility Contact:	Allen Brody
Agency Name:	L & R AUTO PARKS INC.
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	2711
SIC Code 2:	Not reported
Primary Waste:	Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). ’Manageable’ hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	0
Complexity:	Not reported

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number
CE990 **NE** **< 1/8** **0.080 mi.** **420 ft.**	**PARKING STRUCTURE 220 S. SPRING** **220 SOUTH SPRING STREET** **LOS ANGELES, CA 90053** **Site 6 of 6 in cluster CE**	**NPDES** **ENF**	**S109453835** **N/A**

Relative:
Higher

Actual:
288 ft.

NPDES:

Npdes Number:	CAG994004
Facility Status:	Active
Agency Id:	25022
Region:	4
Regulatory Measure Id:	193917
Order No:	R4-2003-0111
Regulatory Measure Type:	Enrollee
Place Id:	250016
WDID:	4B196400051
Program Type:	NPDES
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/21/1999
Expiration Date Of Regulatory Measure:	01/01/2011
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	L & R Auto Parks, Inc.
Discharge Address:	515 South Flower Street 3200
Discharge City:	Los Angeles
Discharge State:	CA
Discharge Zip:	90071

ENF:

Region:	4
Facility Id:	250016
Agency Name:	Not reported
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Not reported
# Of Agencies:	Not reported
Place Latitude:	33.88861
Place Longitude:	-118.25
SIC Code 1:	2711
SIC Desc 1:	Newspapers: Publishing, or Publishing and Printing
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Enf Action
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	Not reported
Reg Measure Id:	136356
Reg Measure Type:	NPDES Permits
Region:	4
Order #:	98-055
Npdes# CA#:	CAG994003
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	N
Application Fee Amt Received:	400
Status:	Historical
Status Date:	02/11/2010
Effective Date:	06/29/1998
Expiration/Review Date:	03/31/2004
Termination Date:	03/31/2004
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	G
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	244397
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	03/21/2003
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	04/21/2003
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 3/21/03 for 14 overdue DMRs.
Description:	NOV sent 3/21/03 for 14 overdue DMRs.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4
Facility Id:	250016
Agency Name:	L & R Auto Parks, Inc.

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	33.88861
Place Longitude:	-118.25
SIC Code 1:	2711
SIC Desc 1:	Newspapers: Publishing, or Publishing and Printing
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	3.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196400051
Reg Measure Id:	193917
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	01/05/2010
Effective Date:	04/21/1999
Expiration/Review Date:	01/01/2011
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	61 - Require treatment to meet non priority limit Category 2

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Direction/Voice:	Passive
Enforcement Id(EID):	379002
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	05/06/2011
Adoption/Issuance Date:	05/06/2011
Achieve Date:	Not reported
Termination Date:	05/06/2011
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV 05/06/2011 for L & R Auto Parks, Inc. CI 7013
Description:	NOV issued on 05/06/2011 to L&R Auto Parks, Inc. CI 7013 for failure to submit 4th quarter 2005 through 4th quarter 2010 monitoring reports.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4
Facility Id:	250016
Agency Name:	L & R Auto Parks, Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	33.88861
Place Longitude:	-118.25
SIC Code 1:	2711
SIC Desc 1:	Newspapers: Publishing, or Publishing and Printing
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	3.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196400051
Reg Measure Id:	193917
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	01/05/2010
Effective Date:	04/21/1999
Expiration/Review Date:	01/01/2011
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	61 - Require treatment to meet non priority limit Category 2
Direction/Voice:	Passive
Enforcement Id(EID):	355231
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	10/10/2008
Adoption/Issuance Date:	10/10/2008
Achieve Date:	Not reported
Termination Date:	10/10/2008
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 10/10/08 for failure to file NOI for coverage under Order R4-2008-0032.
Description:	NOV sent 10/10/08 for failure to file NOI or ROWD for coverage under Order R4-2008-0032.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Facility Id:	250016
Agency Name:	L & R Auto Parks, Inc.
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	33.88861
Place Longitude:	-118.25
SIC Code 1:	2711
SIC Desc 1:	Newspapers: Publishing, or Publishing and Printing
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	3.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196400051
Reg Measure Id:	193917
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	01/05/2010
Effective Date:	04/21/1999
Expiration/Review Date:	01/01/2011
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y

PARKING STRUCTURE 220 S. SPRING (Continued) **S109453835**

Individual/General:	I
Fee Code:	61 - Require treatment to meet non priority limit Category 2
Direction/Voice:	Passive
Enforcement Id(EID):	253691
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	05/18/2004
Adoption/Issuance Date:	05/18/2004
Achieve Date:	Not reported
Termination Date:	05/18/2004
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 5/18/04 for overdue 4Q03, 1Q04 DMRs.
Description:	NOV sent 5/18/04 for overdue 4Q03, 1Q04 DMRs.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

BL991 **FREEDMAN ROBT** **EDR Historical Cleaners** **1009192575**
ENE **413 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.080 mi.
421 ft. **Site 12 of 15 in cluster BL**

Relative: Higher

Actual: 273 ft.

EDR Historical Cleaners:

Name:	FREEDMAN ROBT
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

BQ992 **PHASE II MALL ARCHIVES** **HIST UST** **U001562359**
NE **145 N BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90063**
0.080 mi.
423 ft. **Site 2 of 6 in cluster BQ**

Relative: Higher

Actual: 319 ft.

HIST UST:

Region:	STATE
Facility ID:	00000020713
Facility Type:	Other
Other Type:	CO. ARCHIVES
Total Tanks:	0001
Contact Name:	L.A. COUNTY MECHANICAL DEPARTM
Telephone:	2132672242
Owner Name:	LOS ANGELES COUNTY MECHANICAL
Owner Address:	1100 N. EASTERN AVE.
Owner City,St,Zip:	LOS ANGELES, CA 90063

PHASE II MALL ARCHIVES (Continued) **U001562359**

Tank Num:	001
Container Num:	#1
Year Installed:	1968
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

BQ993 **COUNTY OF LOS ANGELES - ISD** **HAZNET** **S108203813**
NE **145 N BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.080 mi.
423 ft. **Site 3 of 6 in cluster BQ**

Relative:
Higher

Actual:
319 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002575644
Contact:	BELINDA RAMIREZ
Telephone:	3232673137
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90063
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Waste oil and mixed oil
Disposal Method:	Transfer Station
Tons:	0.68
Facility County:	Not reported

BQ994 **1X COUNTY OF LA** **CA FID UST** **S101617589**
NE **145 N BROADWAY** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90020** **LOS ANGELES CO. HMS**
0.080 mi. **HAZNET**
423 ft. **Site 4 of 6 in cluster BQ**

Relative:
Higher

Actual:
319 ft.

CA FID UST:

Facility ID:	19055401
Regulated By:	UTNKA
Regulated ID:	00020713
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132672242
Mail To:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900630000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

1X COUNTY OF LA (Continued) **S101617589**

SWEEPS UST:
Status: A
Comp Number: 1456
Number: 4
Board Of Equalization: 44-011798
Ref Date: 03-09-93
Act Date: 03-09-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-001456-000001
Actv Date: 04-20-88
Capacity: 5000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: 1

LOS ANGELES CO. HMS:
Region: LA
Facility Id: 012458-012608
Facility Type: Not reported
Facility Status: OPEN
Area: 3F
Permit Number: Not reported
Permit Status: Not reported

HAZNET:
Year: 1995
Gepaid: CAC000907024
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: ISD
Mailing City,St,Zip: LOS ANGELES, CA 900200000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: .2085
Facility County: Los Angeles

BQ995
NE
< 1/8
0.080 mi.
423 ft.

LOS ANGELES COUNTY-INTERNAL SVCS DEPT
145 N BROADWAY
LOS ANGELES, CA 90012

HAZNET **S103975373**
N/A

Site 5 of 6 in cluster BQ

Relative:
Higher

Actual:
319 ft.

HAZNET:
Year: 2010
Gepaid: CAL000163302
Contact: RICHARD BAGDASARIAN/SAFETY OFC
Telephone: 3238814690
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE

LOS ANGELES COUNTY-INTERNAL SVCS DEPT (Continued) **S103975373**

Mailing City,St,Zip: LOS ANGELES, CA 900630000
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.95
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000163302
Contact: RICHARD BAGDASARIAN/SAFETY OFC
Telephone: 3238814690
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900630000
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.4587
Facility County: Los Angeles

Year: 2010
Gepaid: CAL000163302
Contact: RICHARD BAGDASARIAN/SAFETY OFC
Telephone: 3238814690
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900630000
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Oil/water separation sludge
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.22935
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000163302
Contact: JAVIER CAUDILLO
Telephone: 2139749439
Mailing Name: Not reported
Mailing Address: 1100 N EASTERN AVE
Mailing City,St,Zip: LOS ANGELES, CA 900630000
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.1
Facility County: Los Angeles

LOS ANGELES COUNTY-INTERNAL SVCS DEPT (Continued) **S103975373**

Year:	1996
Gepaid:	CAC001129472
Contact:	LOS ANGELES COUNTY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900630000
Gen County:	Los Angeles
TSD EPA ID:	CAT080022148
TSD County:	San Bernardino
Waste Category:	Oil/water separation sludge
Disposal Method:	Not reported
Tons:	.7089
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BQ996 **AUTO PARK 10** **UST** **U003780769**
NE **145 N BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.080 mi.
423 ft. **Site 6 of 6 in cluster BQ**

Relative:
Higher

Actual:
319 ft.

UST:

Facility ID:	24326
Latitude:	34.05459
Longitude:	-118.24463

CU997 **PHONE BOOTH** **HAZNET** **S105088314**
ENE **449 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.080 mi.
425 ft. **Site 1 of 7 in cluster CU**

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year:	2000
Gepaid:	CAC002328689
Contact:	20TH CENTURY FOX
Telephone:	2135343433
Mailing Name:	Not reported
Mailing Address:	1201 W 5TH STREET M170
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Unspecified solvent mixture
Disposal Method:	Recycler
Tons:	.0208
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002328689
Contact:	20TH CENTURY FOX
Telephone:	2135343433
Mailing Name:	Not reported

PHONE BOOTH (Continued) **S105088314**

Mailing Address:	1201 W 5TH STREET M170
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	.1000
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAC002328689
Contact:	20TH CENTURY FOX
Telephone:	2135343433
Mailing Name:	Not reported
Mailing Address:	1201 W 5TH STREET M170
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

CU998 **E. H. K. JEWELRY** **RCRA-SQG** **1000238794**
ENE **453 S. SPRING STREET** **FINDS** **CAD981421613**
< 1/8 **LOS ANGELES, CA 90013**
0.080 mi.
425 ft. **Site 2 of 7 in cluster CU**

Relative:
Higher

Actual:
270 ft.

RCRA-SQG:

Date form received by agency:	06/13/1986
Facility name:	E. H. K. JEWELRY
Facility address:	453 S. SPRING STREET LOS ANGELES, CA 90013
EPA ID:	CAD981421613
Mailing address:	S. SPRING STREET LOS ANGELES, CA 90013
Contact:	ENVIRONMENTAL MANAGER
Contact address:	453 S. SPRING STREET LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	(213) 689-9267
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	HARLENE OREN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999

E. H. K. JEWELRY (Continued) **1000238794**

Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002700293

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CU999 **ENE** **< 1/8** **0.080 mi.** **425 ft.**

LOS ANGELES ELEVATOR INC
453 S SPRING ST STE 506
LOS ANGELES, CA 90013

HAZNET — **S109932230** **N/A**

Site 3 of 7 in cluster CU

Relative: Higher

Actual: 270 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002637075
Contact:	MICHAEL BROWN
Telephone:	3108898942
Mailing Name:	Not reported
Mailing Address:	453 S SPRING ST STE 506
Mailing City,St,Zip:	LOS ANGELES, CA 900132076
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.38
Facility County:	Los Angeles

CU1000 **ENE** **< 1/8** **0.080 mi.** **425 ft.**

ANTONIO URIBE MFG
453 S SPRING ST #421
LOS ANGELES, CA 90013

RCRA-SQG — **1000339139**
FINDS — **CAD981674773**

Site 4 of 7 in cluster CU

Relative: Higher

Actual: 270 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	ANTONIO URIBE MFG
Facility address:	453 S SPRING ST #421 LOS ANGELES, CA 90013
EPA ID:	CAD981674773
Mailing address:	S SPRING ST #421 LOS ANGELES, CA 90013
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ANTONIO URIBE
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner

ANTONIO URIBE MFG (Continued) **1000339139**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002746440

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CK1001 **BALL JACOB** **EDR Historical Cleaners** **1009188871**
ENE **336 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.081 mi.
426 ft. **Site 5 of 5 in cluster CK**

Relative:
Higher

Actual:
278 ft.

EDR Historical Cleaners:
Name: BALL JACOB
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

BK1002 **LOS ANGELES CENTER STUDIOS INC** **HAZNET** **S108212513**
ENE **201 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.081 mi.
426 ft. **Site 30 of 34 in cluster BK**

Relative:
Higher

Actual:
267 ft.

HAZNET:

Year:	2008
Gepaid:	CAL000290265
Contact:	BOBBY HUNT
Telephone:	2132168029
Mailing Name:	ATTN: BOBBY HUNT
Mailing Address:	1201 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900172019
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	104
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000290265
Contact:	BOBBY HUNT
Telephone:	2132168029
Mailing Name:	ATTN: BOBBY HUNT
Mailing Address:	1201 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900172019
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	206
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000290265
Contact:	BOBBY HUNT
Telephone:	2132168029
Mailing Name:	Not reported
Mailing Address:	1201 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900172019
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.51
Facility County:	Los Angeles

Year:	2007
Gepaid:	CAL000290265
Contact:	BOBBY HUNT
Telephone:	2132168029
Mailing Name:	Not reported

LOS ANGELES CENTER STUDIOS INC (Continued) **S108212513**

Mailing Address: 1201 W 5TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900172019
Gen County: Los Angeles
TSD EPA ID: TXD077603371
TSD County: 99
Waste Category: Hydrocarbon solvents (benzene, hexane, Stoddard, Etc.)
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 1.18
Facility County: Los Angeles

Year: 2007
Gepaid: CAL000290265
Contact: BOBBY HUNT
Telephone: 2132168029
Mailing Name: Not reported
Mailing Address: 1201 W 5TH ST
Mailing City,St,Zip: LOS ANGELES, CA 900172019
Gen County: Los Angeles
TSD EPA ID: NVT330010000
TSD County: 99
Waste Category: Latex waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.98
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

BK1003 **FRANKLIN CELIA MRS** **EDR Historical Cleaners** **1009190791**
ENE **509 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.081 mi.
430 ft. **Site 31 of 34 in cluster BK**

Relative:
Higher

Actual:
266 ft.

EDR Historical Cleaners:
Name: FRANKLIN CELIA MRS
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

BL1004 **CONTINENTAL BUILDING** **RCRA-SQG** **1000412832**
ENE **408 S SPRING ST** **FINDS** **CAD054738604**
< 1/8 **LOS ANGELES, CA 90013**
0.081 mi.
430 ft. **Site 13 of 15 in cluster BL**

Relative:
Higher

Actual:
273 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: CONTINENTAL BUILDING
Facility address: 408 S SPRING ST
LOS ANGELES, CA 90013
EPA ID: CAD054738604
Mailing address: S SPRING ST
LOS ANGELES, CA 90013
Contact: Not reported
Contact address: Not reported

CONTINENTAL BUILDING (Continued) **1000412832**

	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	FINE DEVELOPEMENT
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002649938

Environmental Interest/Information System

CONTINENTAL BUILDING (Continued) **1000412832**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

BL1005 **OLD FINANCIAL DISTRICT** **HAZNET** **S110372123**
ENE **408 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.081 mi.
430 ft. **Site 14 of 15 in cluster BL**

Relative: Higher

Actual: 273 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002647611
Contact:	LATANYA SPANN
Telephone:	2132534715
Mailing Name:	Not reported
Mailing Address:	400 S MAIN ST STE M1OO
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	2.7105
Facility County:	Los Angeles

BK1006 **S & H DRY CLEANERS, D YAMINI &** **EMI** **S106838621**
ENE **511 SOUTH SPRING STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.081 mi.
430 ft. **Site 32 of 34 in cluster BK**

Relative: Higher

Actual: 266 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	67030
Air District Name:	SC
SIC Code:	7216
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BK1007 **ENE** **< 1/8** **0.081 mi.** **430 ft.**

S & H CLEANERS
511 S SPRING ST
LOS ANGELES, CA 90013

EMI **S106838620** **N/A**

Site 33 of 34 in cluster BK

Relative: **Higher**

Actual: **266 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	56036
Air District Name:	SC
SIC Code:	7216
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BL1008 **ENE** **< 1/8** **0.082 mi.** **431 ft.**

DOWNTOWN PROPERTY HOLDINGS LLC
416 S SPRING ST
LOS ANGELES, CA 90013

HAZNET **S108205267** **N/A**

Site 15 of 15 in cluster BL

Relative: **Higher**

Actual: **273 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002598528
Contact:	BILL STEVENSON/GM
Telephone:	2132138537
Mailing Name:	Not reported
Mailing Address:	633 W 5TH ST FL 5
Mailing City,St,Zip:	LOS ANGELES, CA 900712005
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	126.42
Facility County:	Not reported

BN1009 **NE** **< 1/8** **0.082 mi.** **432 ft.**

SIMONS ISRAEL
506 W 4TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009189599** **N/A**

Site 3 of 3 in cluster BN

Relative: **Higher**

Actual: **321 ft.**

EDR Historical Cleaners:

Name:	FRIEZE SON
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS
Name:	FRIEDMAN MAX

SIMONS ISRAEL (Continued) **1009189599**

Year: 1929
Type: CLOTHES PRESSERS CLEANERS AND REPAIRERS

Name: SIMONS ISRAEL
Year: 1933
Type: CLOTHES PRESSERS AND CLEANERS

Name: SIMONS ISRAEL
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

BO1010 **FIRESTONE AUTO SUPPLY SERVICE STORES** **EDR Historical Auto Stations** **1009081501**
West **1165 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.082 mi.
433 ft. **Site 2 of 2 in cluster BO**

Relative:
Lower

Actual:
242 ft.

EDR Historical Auto Stations:
Name: FIRESTONE AUTO SUPPLY SERVICE STORES
Year: 1937
Type: GASOLINE AND OIL SERVICE STATIONS

Name: FIRESTONE HOME AUTO SUPPLY SERVICE STORES
Year: 1942
Type: GASOLINE AND OIL SERVICE STATIONS

CV1011 **BANCO POPULAR DE PUERTO RICO** **CA FID UST** **S101585016**
ENE **354 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LA, CA 90012**
0.082 mi.
434 ft. **Site 1 of 2 in cluster CV**

Relative:
Higher

Actual:
277 ft.

CA FID UST:
Facility ID: 19018370
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: 354 S SPRING ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LA 900120000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: Not reported
Comp Number: 7766
Number: Not reported
Board Of Equalization: Not reported

BANCO POPULAR DE PUERTO RICO (Continued) **S101585016**

Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CV1012 **POPULAR CENTER LLC** **HAZNET** **S108217108**
ENE **354 S SPRING** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.082 mi.
434 ft. **Site 2 of 2 in cluster CV**

Relative:
Higher

Actual:
277 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002588037
Contact:	CALBIN LEE
Telephone:	2134872500
Mailing Name:	Not reported
Mailing Address:	2500 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 90057
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.31
Facility County:	Not reported

CB1013 **RAIL CONSTRUCTION CORP** **RCRA-SQG** **1000597497**
ENE **METRO RAIL PROJECT OF LACTC** **FINDS** **CAD983615105**
< 1/8 **LOS ANGELES, CA 90017**
0.082 mi.
435 ft. **Site 5 of 8 in cluster CB**

Relative:
Higher

Actual:
263 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	RAIL CONSTRUCTION CORP
Facility address:	METRO RAIL PROJECT OF LACTC
	LOS ANGELES, CA 90017
EPA ID:	CAD983615105
Mailing address:	W 7TH ST
	LOS ANGELES, CA 90017
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09

RAIL CONSTRUCTION CORP (Continued) **1000597497**

Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: RAIL CONSTRUCTION CORP
Owner/operator address: 818 W 7TH ST
LOS ANGELES, CA 90017
Owner/operator country: Not reported
Owner/operator telephone: (213) 623-1194
Legal status: State
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110008282679

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CU1014	**MSGG ROWEN REALTY PARTNERS LLC**	**HAZNET**	**S108214464**
ENE	**460 S SPRING ST**		**N/A**
< 1/8	**LOS ANGELES, CA 90013**		
0.082 mi.			
435 ft.	**Site 5 of 7 in cluster CU**		

Relative: **Higher**

Actual: **269 ft.**

HAZNET:

Year:	2006
Gepaid:	CAC002602828
Contact:	FRANCISCO TORRES/MATRIX ABATEMENT C
Telephone:	5625877360
Mailing Name:	Not reported
Mailing Address:	633 W 5TH ST FL 56
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	2.52
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002590116
Contact:	BILL STEVENSON
Telephone:	2132138537
Mailing Name:	Not reported
Mailing Address:	633 W 5TH ST FL 56
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	29.49
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAC002590116
Contact:	BILL STEVENSON
Telephone:	2132138537
Mailing Name:	Not reported
Mailing Address:	633 W 5TH ST FL 56
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	67.42
Facility County:	Not reported

CU1015 **H C G G RONIN REALTY PARTNERS LLC** **HAZNET** **S108748146**
ENE **458 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.082 mi.
435 ft. **Site 6 of 7 in cluster CU**

Relative: **Higher**

Actual: **269 ft.**

HAZNET:

Year:	2006
Gepaid:	CAC002605971
Contact:	SHAWN HO
Telephone:	2132138600
Mailing Name:	Not reported
Mailing Address:	633 W 5TH ST FL 56
Mailing City,St,Zip:	LOS ANGELES, CA 900712005
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	8.34
Facility County:	Los Angeles

CM1016 **NETTOUR H L** **EDR Historical Auto Stations** **1009080373**
NW **839 W 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.082 mi.
435 ft. **Site 2 of 3 in cluster CM**

Relative: **Lower**

Actual: **252 ft.**

EDR Historical Auto Stations:

Name:	NETFOUR H L
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	NETTOUR H L
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	NETFOUR H L
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

CS1017 **FLOR RAY** **EDR Historical Auto Stations** **1009079524**
NNE **125 S HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.083 mi.
436 ft. **Site 2 of 16 in cluster CS**

Relative: **Higher**

Actual: **393 ft.**

EDR Historical Auto Stations:

Name:	FLOR RAY
Year:	1933
Type:	GASOLINE AND OIL SERVICE STATIONS

BK1018 **ENE** **< 1/8** **0.083 mi.** **440 ft.**	**510 S SPRING ST ASOCC** **510 SO SPRING ST** **LOS ANGELES, CA 90023** **Site 34 of 34 in cluster BK**	**HAZNET**	**S106090012** **N/A**

Relative:
Higher

Actual:
265 ft.

HAZNET:

Year: 2004
Gepaid: CAC002559055
Contact: PHIL MIZRARE
Telephone: 3235335380
Mailing Name: Not reported
Mailing Address: 4943 DENSMORE AVE
Mailing City,St,Zip: ENCINO, CA 91346
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 30.59
Facility County: Not reported

Year: 2003
Gepaid: CAC002559055
Contact: PHIL MIZRARE
Telephone: 3235335380
Mailing Name: Not reported
Mailing Address: 4943 DENSMORE AVE
Mailing City,St,Zip: ENCINO, CA 91346
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 365.77
Facility County: Los Angeles

Year: 2002
Gepaid: CAC002559055
Contact: PHIL MIZRARE
Telephone: 3235335380
Mailing Name: Not reported
Mailing Address: 4943 DENSMORE AVE
Mailing City,St,Zip: ENCINO, CA 91346
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Not reported
Disposal Method: Not reported
Tons: 33.71
Facility County: Not reported

Year: 2002
Gepaid: CAC002559055
Contact: PHIL MIZRARE
Telephone: 3235335380
Mailing Name: Not reported
Mailing Address: 4943 DENSMORE AVE
Mailing City,St,Zip: ENCINO, CA 91346

510 S SPRING ST ASOCC (Continued) **S106090012**

Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	16.85
Facility County:	Not reported

CJ1019
SE
< 1/8
0.084 mi.
441 ft.

CALIFORNIA MART PHASE V
917 S MAIN ST
LOS ANGELES, CA 90015

HAZNET **S102800058** **N/A**

Site 3 of 19 in cluster CJ

Relative: **Lower**

Actual: **246 ft.**

HAZNET:

Year:	1995
Gepaid:	CAC000963832
Contact:	CALIFORNIA MART PHASE V
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3208 ROYAL ST
Mailing City,St,Zip:	LOS ANGELES, CA 900070000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	1.8765
Facility County:	Los Angeles

CW1020
South
< 1/8
0.084 mi.
443 ft.

MOORE PFEIF
1151 S MAIN ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009082418** **N/A**

Site 1 of 3 in cluster CW

Relative: **Lower**

Actual: **241 ft.**

EDR Historical Auto Stations:

Name:	MOORE PFEIF
Year:	1942
Type:	AUTOMOBILE REPAIRING

CX1021
ENE
< 1/8
0.084 mi.
443 ft.

DROMY INTERNATIONAL INVESTMENT
626 S SPRING ST
LOS ANGELES, CA 90001

HAZNET **S106085336** **N/A**

Site 1 of 9 in cluster CX

Relative: **Higher**

Actual: **259 ft.**

HAZNET:

Year:	2002
Gepaid:	CAC002386633
Contact:	KAY AKINRELE
Telephone:	8187046331
Mailing Name:	Not reported
Mailing Address:	440 SANTA MONICA BLVD STE 305
Mailing City,St,Zip:	BEVERLY HILLS, CA 90210

DROMY INTERNATIONAL INVESTMENT (Continued) **S106085336**

Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	12.63
Facility County:	Not reported

CX1022 **MORALES F G** **EDR Historical Cleaners** **1009186710**
ENE **630 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.084 mi.
443 ft. **Site 2 of 9 in cluster CX**

Relative:
Higher

Actual:
259 ft.

EDR Historical Cleaners:

Name:	MORALES F G
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

CX1023 **ROBERT MASSEY** **HAZNET** **S108218564**
ENE **618 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.084 mi.
443 ft. **Site 3 of 9 in cluster CX**

Relative:
Higher

Actual:
260 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002579094
Contact:	ROBERT MASSEY
Telephone:	3104722373
Mailing Name:	Not reported
Mailing Address:	196 N THURSTON AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90049
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Transfer Station
Tons:	12.51
Facility County:	Not reported

CX1024 **MALDEF MEXICAN AMERICAN LEGAL/DEFENSE & EDUCATIONAL FUND** **CA FID UST** **S101584726**
ENE **634 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.084 mi.
444 ft. **Site 4 of 9 in cluster CX**

Relative:
Higher

Actual:
259 ft.

CA FID UST:

Facility ID:	19014915
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136292731
Mail To:	Not reported

MALDEF MEXICAN AMERICAN LEGAL/DEFENSE & EDUCATIONAL FUND (Continued) **S101584726**

Mailing Address:	634 S SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 90014
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	8086
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

CX1025 **MONSENOR OSCAR ROMERO CHARTER MIDDLE** **FINDS** **1011472372**
ENE **440 SHATTO PLACEACE** **N/A**
< 1/8 **LOS ANGELES, CA 90020**
0.084 mi.
444 ft. **Site 5 of 9 in cluster CX**

Relative:
Higher

Actual:
259 ft.

FINDS:

Registry ID: 110036094240

Environmental Interest/Information System
NCES (National Center for Education Statistics) is the primary federal entity for collecting and analyzing data related to education in the United States and other nations and the institute of education sciences.

CX1026 **1X MALDEF PROP MGMNT** **HAZNET** **S104565062**
ENE **634 SO SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.084 mi.
444 ft. **Site 6 of 9 in cluster CX**

Relative: **Higher**

Actual: **259 ft.**

HAZNET:

Year:	1995
Gepaid:	CAC000805232
Contact:	CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD049318009
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Transfer Station
Tons:	.5000
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000805232
Contact:	CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	Not reported
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	AZD983481813
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	.8428
Facility County:	Los Angeles

CX1027 **MALDEF PROP MGMNT** **HAZNET** **S103976055**
ENE **634 SO SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.084 mi.
444 ft. **Site 7 of 9 in cluster CX**

Relative: **Higher**

Actual: **259 ft.**

HAZNET:

Year:	1998
Gepaid:	CAC001168880
Contact:	MALDEF/ MEX AMER LEGAL DEF& ED
Telephone:	2136292512
Mailing Name:	Not reported
Mailing Address:	634 SO SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified aqueous solution
Disposal Method:	Recycler
Tons:	10.4250
Facility County:	Los Angeles

CY1028 **PAGE JOHN** **EDR Historical Cleaners** **1009193184**
East **757 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.084 mi.
445 ft. **Site 1 of 2 in cluster CY**

Relative:
Lower

Actual:
252 ft.

EDR Historical Cleaners:

Name:	PAGE JOHN
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

CB1029 **CITY ENGINEERING** **CA FID UST** **S101584383**
ENE **600 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **HAZNET**
0.085 mi. **EMI**
448 ft. **Site 6 of 8 in cluster CB**

Relative:
Higher

Actual:
261 ft.

CA FID UST:

Facility ID:	19010969
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2133625075
Mail To:	Not reported
Mailing Address:	600 S SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7885
Number:	4
Board Of Equalization:	Not reported
Ref Date:	07-21-93
Act Date:	07-21-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2007
Gepaid:	CAC002623027
Contact:	AMIT TIDHAR
Telephone:	8189749849

CITY ENGINEERING (Continued) **S101584383**

Mailing Name:	Not reported
Mailing Address:	312 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900131900
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	5.2
Facility County:	Los Angeles

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	46314
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	79131
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CB1030 **L & R INVESTMENTS** **LA Co. Site Mitigation** **S106843324**
ENE **600 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.085 mi.
448 ft. **Site 7 of 8 in cluster CB**

Relative:
Higher

Actual:
261 ft.

LA Co. Site Mitigation:

Facility ID:	Not reported
Site ID:	SD0010337
Case ID:	RO0000460

L & R INVESTMENTS (Continued) **S106843324**

Abated:	Yes
Assigned To:	SC
Entered Date:	05/11/2004
Abated Date:	03/25/1995

CZ1031 **ARTHUR ANDERSEN & CO** **CA FID UST** **S101585658**
North **911 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.085 mi.
448 ft. **Site 1 of 23 in cluster CZ**

Relative:
Higher

Actual:
305 ft.

CA FID UST:

Facility ID:	19027241
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136146500
Mail To:	Not reported
Mailing Address:	911 WILSHIRE BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

CZ1032 **TEACHERS INSURANCE & ANNUITY** **SWEEPS UST** **S103990426**
North **911 WILSHIRE BLVD** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.085 mi.
448 ft. **Site 2 of 23 in cluster CZ**

Relative:
Higher

Actual:
305 ft.

SWEEPS UST:

Status:	Not reported
Comp Number:	6392
Number:	Not reported
Board Of Equalization:	44-035446
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	1995

TEACHERS INSURANCE & ANNUITY (Continued) **S103990426**

Gepaid:	CAC001028200
Contact:	TEACHER INSURANCE & ANNUITY
Telephone:	2129164459
Mailing Name:	Not reported
Mailing Address:	911 WILSHIRE BLVD, STE 810
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Paint sludge
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	Los Angeles

CZ1033 **TEACHERS INSURANCE & ANNUITANTS** **HAZNET** **S103990425**
North **911 WILSHIRE BLVD STE 1710** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.085 mi.
448 ft. **Site 3 of 23 in cluster CZ**

Relative: **Higher**

Actual: **305 ft.**

HAZNET:

Year:	1998
Gepaid:	CAC001359384
Contact:	TEACHERS INSURANCE & ANNUITANT
Telephone:	2133629080
Mailing Name:	Not reported
Mailing Address:	911 WILSHIRE BLVD STE 1710
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Recycler
Tons:	.4587
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC001359384
Contact:	TEACHERS INSURANCE & ANNUITANT
Telephone:	2133629080
Mailing Name:	Not reported
Mailing Address:	911 WILSHIRE BLVD STE 1710
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	.2293
Facility County:	Los Angeles

CZ1034 **ARCO-LYONDELL PETROCHEM** **TSCA** **1005926132**
North **911 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.085 mi.
448 ft. **Site 4 of 23 in cluster CZ**

Relative:
Higher

Actual:
305 ft.

Click this hyperlink while viewing on your computer to access additional TSCA detail in the EDR Site Report.

BZ1035 **612 PARTNERS LLC** **CA FID UST** **S101584353**
North **612 S FLOWER ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017** **HAZNET**
0.086 mi. **EMI**
452 ft. **Site 7 of 9 in cluster BZ**

Relative:
Higher

Actual:
280 ft.

CA FID UST:

Facility ID:	19010761
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2134893901
Mail To:	Not reported
Mailing Address:	612 S FLOWER ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	6083
Number:	9
Board Of Equalization:	Not reported
Ref Date:	08-30-93
Act Date:	08-30-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

HAZNET:

Year:	2003
Gepaid:	CAC002561168
Contact:	GREG SCHEM/GENERAL PARTNER
Telephone:	3239398800
Mailing Name:	Not reported
Mailing Address:	5750 WILSHIRE BLVD STE 610

612 PARTNERS LLC (Continued) **S101584353**

Mailing City,St,Zip: LOS ANGELES, CA 90036
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 3.37
Facility County: Los Angeles

Year: 2003
Gepaid: CAC002561168
Contact: GREG SCHEM/GENERAL PARTNER
Telephone: 3239398800
Mailing Name: Not reported
Mailing Address: 5750 WILSHIRE BLVD STE 610
Mailing City,St,Zip: LOS ANGELES, CA 90036
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 29.49
Facility County: Los Angeles

Year: 2002
Gepaid: CAC002385961
Contact: MIKE DEREVERE/TAISEY CONSTRCTN
Telephone: 7147158294
Mailing Name: Not reported
Mailing Address: 5750 WILSHIRE BLVD STE 610
Mailing City,St,Zip: LOS ANGELES, CA 900360000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 0.12
Facility County: Not reported

Year: 2002
Gepaid: CAC002385961
Contact: MIKE DEREVERE/TAISEY CONSTRCTN
Telephone: 7147158294
Mailing Name: Not reported
Mailing Address: 5750 WILSHIRE BLVD STE 610
Mailing City,St,Zip: LOS ANGELES, CA 900360000
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: 99
Waste Category: Halogenated solvents (chloroforms, methyl chloride, perchloroethylene, etc)
Disposal Method: Treatment, Incineration
Tons: 0.15
Facility County: Not reported

Year: 2002
Gepaid: CAC002385961

612 PARTNERS LLC (Continued) **S101584353**

Contact:	MIKE DEREVERE/TAISEY CONSTRCTN
Telephone:	7147158294
Mailing Name:	Not reported
Mailing Address:	5750 WILSHIRE BLVD STE 610
Mailing City,St,Zip:	LOS ANGELES, CA 900360000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	San Bernardino
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	2.20
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
9 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	1458
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	64902
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

BZ1036 **North** **< 1/8** **0.086 mi.** **452 ft.**	**NEWMAN BULK PLANT** **612 S FLOWER ST** **LOS ANGELES, CA 90017** **Site 8 of 9 in cluster BZ**	**HIST UST**	**U001560737** **N/A**

Relative: **Higher**

Actual: **280 ft.**

HIST UST:

Region:	STATE
Facility ID:	00000039236
Facility Type:	Other
Other Type:	BULK PLANT
Total Tanks:	0001
Contact Name:	ALFRED ROSE
Telephone:	2098623736
Owner Name:	MOBIL OIL CORPORATION
Owner Address:	612 SO FLOWER STREET
Owner City,St,Zip:	LOS ANGELES, CA 90017

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00005000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	None

BZ1037 **North** **< 1/8** **0.086 mi.** **452 ft.**	**DOWNTOWN PROPERTIES II LLC** **612 S FLOWER ST** **LOS ANGELES, CA 90017** **Site 9 of 9 in cluster BZ**	**HAZNET**	**S104570080** **N/A**

Relative: **Higher**

Actual: **280 ft.**

HAZNET:

Year:	1999
Gepaid:	CAC002129912
Contact:	DOWNTOWN PROPERTIES II LLC
Telephone:	2136235800
Mailing Name:	Not reported
Mailing Address:	700 WILSHIRE BLVD STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.6255
Facility County:	Los Angeles

CG1038 **CENTURY DENTAL PLAN** **HAZNET** **S106090922**
East **722 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.086 mi.
455 ft. **Site 5 of 6 in cluster CG**

Relative: **Lower**

Actual: **254 ft.**

HAZNET:

Year:	2002
Gepaid:	CAL000077904
Contact:	DR DAVID CAMPBELL
Telephone:	8005705557
Mailing Name:	Not reported
Mailing Address:	722 S SPRING ST
Mailing City,St,Zip:	LOS ANGELES, CA 900142906
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Santa Clara
Waste Category:	Unspecified aqueous solution
Disposal Method:	Not reported
Tons:	0.01
Facility County:	Not reported

DA1039 **1X AN JACK BUILDING** **HAZNET** **S103673496**
ESE **823 SOUTH SPRING STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.086 mi.
455 ft. **Site 1 of 7 in cluster DA**

Relative: **Lower**

Actual: **249 ft.**

HAZNET:

Year:	1999
Gepaid:	CAC000701160
Contact:	JACK NEEDLMAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	819 SANTEE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	3.034
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAC000701160
Contact:	JACK NEEDLMAN
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	819 SANTEE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	4.2140
Facility County:	Los Angeles

Year:	1995

1X AN JACK BUILDING (Continued) **S103673496**

Gepaid: CAC000701160
Contact: JACK NEEDLMAN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 819 SANTEE STREET
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .8428
Facility County: Los Angeles

Year: 1994
Gepaid: CAC000701160
Contact: JACK NEEDLMAN
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 819 SANTEE STREET
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: .8428
Facility County: Los Angeles

CY1040 **756 SPRING STREET LIMITED** **HAZNET** **S108196378**
East **756 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.086 mi.
455 ft. **Site 2 of 2 in cluster CY**

Relative:
Lower

Actual:
252 ft.

HAZNET:
Year: 2007
Gepaid: CAC002613341
Contact: JACOB JALIL
Telephone: 3105000072
Mailing Name: Not reported
Mailing Address: PO BOX 2451
Mailing City,St,Zip: LOS ANGELES, CA 90064
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 16.4
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002624055
Contact: JACOB JALIL
Telephone: 3105000072
Mailing Name: Not reported
Mailing Address: PO BOX 2451

756 SPRING STREET LIMITED (Continued) **S108196378**

Mailing City,St,Zip: LOS ANGELES, CA 900532451
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

Year: 2004
Gepaid: CAC002575886
Contact: TIMOTHY HUNTER/X217
Telephone: 2136801230
Mailing Name: Not reported
Mailing Address: 837 TRACTION AVE STE 400
Mailing City,St,Zip: LOS ANGELES, CA 90013
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 2.94
Facility County: Not reported

CX1041 **SPRING STREET TOWERS** **EMI** **S106839957**
ENE **650 SOUTH SPRING STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.086 mi.
456 ft. **Site 8 of 9 in cluster CX**

Relative:
Higher

Actual:
259 ft.

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 2840
Air District Name: SC
SIC Code: 6512
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 2840
Air District Name: SC
SIC Code: 6512
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

SPRING STREET TOWERS (Continued) **S106839957**

Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CX1042
ENE
< 1/8
0.086 mi.
456 ft.

TOUCH TONE TELEVISION PRODUCTIONS LLC **HAZNET** **S106086646**
650 S SPRING ST **N/A**
LOS ANGELES, CA 90014

Site 9 of 9 in cluster CX

Relative:
Higher

Actual:
259 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002637211
Contact:	AMIT TIDHAR
Telephone:	8189749849
Mailing Name:	Not reported
Mailing Address:	312 W 5TH ST
Mailing City,St,Zip:	LOS ANGELES, CA 900131900
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	12
Facility County:	Los Angeles

Year:	2002
Gepaid:	CAC002550580
Contact:	LINDA DEMEDUK
Telephone:	8185264319
Mailing Name:	Not reported
Mailing Address:	500 S BUENA VISTA ST
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Transfer Station
Tons:	0.16
Facility County:	Not reported

Year:	2002
Gepaid:	CAC002550580
Contact:	LINDA DEMEDUK
Telephone:	8185264319
Mailing Name:	Not reported
Mailing Address:	500 S BUENA VISTA ST
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station

TOUCH TONE TELEVISION PRODUCTIONS LLC (Continued) **S106086646**

Tons: 0.01
Facility County: Not reported

Year: 2002
Gepaid: CAC002550580
Contact: LINDA DEMEDUK
Telephone: 8185264319
Mailing Name: Not reported
Mailing Address: 500 S BUENA VISTA ST
Mailing City,St,Zip: LOS ANGELES, CA 90014
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Transfer Station
Tons: 0.10
Facility County: Not reported

CN1043 **FEGELMAN CHAS** **EDR Historical Cleaners** **1009192614**
NE **511 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.087 mi.
457 ft. **Site 5 of 7 in cluster CN**

Relative:
Higher

Actual:
280 ft.

EDR Historical Cleaners:
Name: FEGELMAN CHAS
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

DA1044 **BEN P/EDWARD FENTON** **CA FID UST** **S101586910**
ESE **829 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.087 mi.
458 ft. **Site 2 of 7 in cluster DA**

Relative:
Lower

Actual:
249 ft.

CA FID UST:
Facility ID: 19054596
Regulated By: UTNKI
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: 829 S SPRING ST
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900140000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Inactive

SWEEPS UST:
Status: Not reported

BEN P/EDWARD FENTON (Continued) **S101586910**

Comp Number:	7240
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

DB1045 **HERON PROPERTIES INC** **EMI** **S106832500**
NE **510 W 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.087 mi.
460 ft. **Site 1 of 17 in cluster DB**

Relative:
Higher

Actual:
271 ft.

EMI:

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	80995
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	80995
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DB1046 **GAMA JEWELRY** **HAZNET** **S107139324**
NE **510 W 6TH ST STE 1118** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.087 mi.
460 ft. **Site 2 of 17 in cluster DB**

Relative: Higher

Actual: 271 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002558733
Contact:	GARBIS MANOUKIAN
Telephone:	2134880583
Mailing Name:	Not reported
Mailing Address:	510 W 6TH ST STE 1118
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAT080033681
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	1.14
Facility County:	Los Angeles

DA1047 **SINA SILK SCREEN SHOP** **RCRA-SQG** **1000857836**
ESE **833 S SPRING ST UNIT 300** **FINDS** **CAD983672841**
< 1/8 **LOS ANGELES, CA 90014**
0.087 mi.
461 ft. **Site 3 of 7 in cluster DA**

Relative: Lower

Actual: 249 ft.

RCRA-SQG:

Date form received by agency:	08/10/1993
Facility name:	SINA SILK SCREEN SHOP
Facility address:	833 S SPRING ST UNIT 300 LOS ANGELES, CA 90014
EPA ID:	CAD983672841
Mailing address:	S SPRING ST UNIT 300 LOS ANGELES, CA 90014
Contact:	ABEE TAVAKOLI
Contact address:	833 S SPRING ST UNIT 300 LOS ANGELES, CA 90014
Contact country:	US
Contact telephone:	(213) 623-4640
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ABEE TAVAKOLI
Owner/operator address:	833 S SPRING ST LOS ANGELES, CA 90014
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 623-4640
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported

SINA SILK SCREEN SHOP (Continued) **1000857836**

Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002902574

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DA1048 **BEN P OR EDWARD FENTON** **CA FID UST** **S101587458**
ESE **833 S SPRING ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.087 mi.
461 ft. **Site 4 of 7 in cluster DA**

Relative:
Lower

Actual:
249 ft.

CA FID UST:

Facility ID:	19055654
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	833 S SPRING ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

BEN P OR EDWARD FENTON (Continued) **S101587458**

SWEEPS UST:

Status:	Not reported
Comp Number:	3985
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

CH1049 **TRANSAMERICA CORP.** **UST** **U003880022**
SSW **1149 S HILL ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.088 mi.
463 ft. **Site 3 of 5 in cluster CH**

Relative:
Lower

Actual:
243 ft.

UST:

Facility ID:	24768
Latitude:	34.03914
Longitude:	-118.2608

CL1050 **STAPLES ARENA** **SLIC** **S106485978**
West **740-750 WEST 10TH PLACE** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.088 mi.
466 ft. **Site 2 of 5 in cluster CL**

Relative:
Lower

Actual:
243 ft.

SLIC:

Region:	STATE
Facility Status:	**Open - Remediation**
Status Date:	06/30/2002
Global Id:	SLT4L8561883
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.0436098443794
Longitude:	-118.269174098969
Case Type:	Cleanup Program Site
Case Worker:	DY
Local Agency:	Not reported
RB Case Number:	0856A
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

CZ1051
North
< 1/8
0.089 mi.
469 ft.

RELIANCE FIGUEROA ASSOCIATES
930 WILSHIRE BL
LOS ANGELES, CA 90017

CA FID UST
SWEEPS UST
EMI

S101585295
N/A

Site 5 of 23 in cluster CZ

Relative:
Higher

Actual:
307 ft.

CA FID UST:

Facility ID:	19022056
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136294321
Mail To:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	5037
Number:	1
Board Of Equalization:	Not reported
Ref Date:	02-23-93
Act Date:	02-23-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	42592
Air District Name:	SC
SIC Code:	6513
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	3
SOX - Oxides of Sulphur Tons/Yr:	0

RELIANCE FIGUEROA ASSOCIATES (Continued) **S101585295**

Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

CZ1052 **WILSHIRE GRAND HOTEL & CENTRE** **HAZNET** **S103996065**
North **930 WILSHIRE BLVD** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.089 mi.
469 ft. **Site 6 of 23 in cluster CZ**

Relative:
Higher

Actual:
307 ft.

HAZNET:

Year:	2002
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Transfer Station
Tons:	0.10
Facility County:	Not reported

Year:	2001
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	4.21
Facility County:	Not reported

Year:	2001
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	2.31
Facility County:	Not reported

Year:	2000
Gepaid:	CAD981577307
Contact:	HANJIN INTERNATIONAL CORP

WILSHIRE GRAND HOTEL & CENTRE (Continued) **S103996065**

Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.6856
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAD981577307
Contact:	HANJIN INTERNATIONAL CORP
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.8963
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
6 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported

WILSHIRE GRAND HOTEL & CENTRE (Continued) **S103996065**

Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0

WILSHIRE GRAND HOTEL & CENTRE (Continued) **S103996065**

Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	75893

WILSHIRE GRAND HOTEL & CENTRE (Continued) **S103996065**

Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2005
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.380745
Reactive Organic Gases Tons/Yr:	.2578931515
Carbon Monoxide Emissions Tons/Yr:	2.83834
NOX - Oxides of Nitrogen Tons/Yr:	3.6148
SOX - Oxides of Sulphur Tons/Yr:	.021585
Particulate Matter Tons/Yr:	.26874
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.26868384

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.8373955022325446472
Reactive Organic Gases Tons/Yr:	.546
Carbon Monoxide Emissions Tons/Yr:	2.8
NOX - Oxides of Nitrogen Tons/Yr:	3.642
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.27
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.27

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.5178075754029797908

WILSHIRE GRAND HOTEL & CENTRE (Continued) **S103996065**

Reactive Organic Gases Tons/Yr:	.391425
Carbon Monoxide Emissions Tons/Yr:	1.43
NOX - Oxides of Nitrogen Tons/Yr:	2.06
SOX - Oxides of Sulphur Tons/Yr:	.01276
Particulate Matter Tons/Yr:	.1267
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.1267

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	75893
Air District Name:	SC
SIC Code:	7011
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.8373955022325446472
Reactive Organic Gases Tons/Yr:	.546
Carbon Monoxide Emissions Tons/Yr:	2.8
NOX - Oxides of Nitrogen Tons/Yr:	3.642
SOX - Oxides of Sulphur Tons/Yr:	.023
Particulate Matter Tons/Yr:	.27
Part. Matter 10 Micrometers & Smllr Tons/Yr:	.27

CZ1053 **HANJIN INTERNATIONAL CORPORATION OMNI LA HOTEL** **FINDS** **1005775661**
North **930 WILSHIRE BOULEVARD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.089 mi.
469 ft. **Site 7 of 23 in cluster CZ**

Relative:
Higher

Actual:
307 ft.

FINDS:

Registry ID: 110010478410

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

CZ1054 **HANJIN INTL CORP** **HAZNET** **S108208458**
North **930 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.089 mi.
469 ft. **Site 8 of 23 in cluster CZ**

Relative:
Higher

Actual:
307 ft.

HAZNET:

Year:	2008
Gepaid:	CAD981577307
Contact:	EDWARD PARK/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402

HANJIN INTL CORP (Continued) **S108208458**

Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.6
Facility County:	Los Angeles
Year:	2007
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	6.8
Facility County:	Los Angeles
Year:	2007
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	TXD077603371
TSD County:	99
Waste Category:	Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.15
Facility County:	Los Angeles
Year:	2006
Gepaid:	CAD981577307
Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0.84
Facility County:	Los Angeles
Year:	2005
Gepaid:	CAD981577307

HANJIN INTL CORP (Continued) **S108208458**

Contact:	BRUCE REICHENBACHER/CHAE
Telephone:	2136887777
Mailing Name:	Not reported
Mailing Address:	930 WILSHIRE BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900173402
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	1.85
Facility County:	Not reported

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

DA1055 **CHIRIGOTIS MIKE** **EDR Historical Cleaners** **1009193951**
ESE **838 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.089 mi.
472 ft. **Site 5 of 7 in cluster DA**

Relative: Lower

Actual: 248 ft.

EDR Historical Cleaners:

Name:	CHIRIGOTIS MIKE
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

CW1056 **GUARANTEED AUTO SERVICE** **EDR Historical Auto Stations** **1009078158**
South **1156 S MAIN ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.091 mi.
478 ft. **Site 2 of 3 in cluster CW**

Relative: Lower

Actual: 241 ft.

EDR Historical Auto Stations:

Name:	GUARANTEED AUTO SERVICE
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS

CS1057 **LA CITY, DWP** **FINDS** **1006834637**
NNE **P.O. BOX 51111** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90051**
0.093 mi.
489 ft. **Site 3 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

FINDS:

Registry ID: 110013953766

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

LA CITY, DWP (Continued) **1006834637**

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC

LA CITY, DWP (Continued) **1006834637**

SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3

LA CITY, DWP (Continued) **1006834637**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	44758
Air District Name:	SC
SIC Code:	4911
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CS1058
NNE
< 1/8
0.093 mi.
489 ft.

STONE HOLLYWOOD TRUNK LINE - 3
111 NORTH HOPE STREET, #1213
LOS ANGELES, CA 90012

ENF **S111213514**
N/A

Site 4 of 16 in cluster CS

Relative:
Higher

Actual:
404 ft.

ENF:

Region:	4
Facility Id:	262163
Agency Name:	Los Angeles City DWP
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	City Agency
# Of Agencies:	1
Place Latitude:	34.0519400
Place Longitude:	-118.35805
SIC Code 1:	4941
SIC Desc 1:	Water Supply
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	0.0001
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW

STONE HOLLYWOOD TRUNK LINE - 3 (Continued) **S111213514**

Facility Waste Type:	Inert miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4A196300106
Reg Measure Id:	192930
Reg Measure Type:	Enrollee
Region:	4
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	400
Status:	Historical
Status Date:	11/04/1999
Effective Date:	11/04/1999
Expiration/Review Date:	Not reported
Termination Date:	12/17/2002
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	237042
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	06/29/2001
Adoption/Issuance Date:	06/29/2001
Achieve Date:	Not reported
Termination Date:	07/29/2001
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Notice of Violation sent 6/29/01 for deficient DMRs.
Description:	Notice of Violation sent 6/29/01 for deficient DMRs.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

CS1059 **LOS ANGELES DEPARTMENT OF WATER & POWER** **FTTS** **1007284799**
NNE **111 N HOPE ST RM 1121** **HIST FTTS** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 5 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

FTTS INSP:

Inspection Number:	1996022811223 4
Region:	03
Inspection Date:	02/28/96
Inspector:	COHEN
Violation occurred:	No
Investigation Type:	EPCRA, Data Quality, Federal Conducted
Investigation Reason:	Secondary Inspection
Legislation Code:	EPCRA
Facility Function:	Manufacturer

HIST FTTS INSP:

Inspection Number:	1996022811223 4
Region:	03
Inspection Date:	Not reported
Inspector:	COHEN
Violation occurred:	No
Investigation Type:	EPCRA, Data Quality, Federal Conducted
Investigation Reason:	Secondary Inspection
Legislation Code:	EPCRA
Facility Function:	Manufacturer

CS1060 **LOS ANGELES DEPARTMENT OF WATER & POWER** **FTTS** **1009517532**
NNE **111 N HOPE ST RM 1121** **HIST FTTS** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 6 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

FTTS INSP:

Inspection Number:	19911029CA015 1
Region:	09
Inspection Date:	10/29/91
Inspector:	N. SAUER
Violation occurred:	No
Investigation Type:	Section 6 PCB State Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	19911029CA015 1
Region:	09
Inspection Date:	Not reported
Inspector:	N. SAUER
Violation occurred:	No
Investigation Type:	Section 6 PCB State Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

CS1061 **LOS ANGELES DEPT. WATER & POWER** **FTTS** **1009517535**
NNE **111 N HOPE ST. RM 1050** **HIST FTTS** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 7 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

FTTS INSP:

Inspection Number:	200009119ST12 1
Region:	09
Inspection Date:	09/11/00
Inspector:	CROLLINS
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	For Cause, Disposal
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	200009119ST12 1
Region:	09
Inspection Date:	Not reported
Inspector:	CROLLINS
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	For Cause, Disposal
Legislation Code:	TSCA
Facility Function:	User

CS1062 **GENERAL OFFICE BUILDING** **FINDS** **1011908256**
NNE **111 N HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 8 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

FINDS:

Registry ID: 110037257884

Environmental Interest/Information System

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

CS1063 **LOS ANGELES DEPARTMENT OF WATER & POWER** **HWT** **S109936706**
NNE **111 NORTH HOPE STREET, ROOM 1050** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 9 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

HWT:
Reg Num: 833
Expiration Date: 06/30/2012

CS1064 **LADWP JOHN FERRARO BUILIDING** **RCRA-LQG** **1000474498**
NNE **111 N HOPE ST** **FINDS** **CAD099450504**
< 1/8 **LOS ANGELES, CA 90012** **MANIFEST**
0.093 mi.
489 ft. **Site 10 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

RCRA-LQG:
Date form received by agency: 02/28/2008
Facility name: LADWP JOHN FERRARO BUILIDING
Facility address: 111 N. HOPE STREET
ROOM1050
LOS ANGELES, CA 90012
EPA ID: CAD099450504
Contact: MARK J SEDLACEK
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: (213) 367-0403
Contact email: MARK.SEDLACEK@LADWP.COM
EPA Region: 09
Land type: Municipal
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: LOS ANGELES DEPT OF WATER & POWER
Owner/operator address: 111 N. HOPE STREET, ROOM 1050
LOS ANGELES, CA 90012
Owner/operator country: US
Owner/operator telephone: Not reported
Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1961
Owner/Op end date: Not reported

Owner/operator name: LOS ANGELES DEPT OFWATER & POWER
Owner/operator address: Not reported
Not reported

LADWP JOHN FERRARO BUILIDING (Continued) **1000474498**

Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Municipal
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1961
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	02/28/2006
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	LADWP JOHN FERRARO BLDG
Classification:	Small Quantity Generator

Date form received by agency:	02/28/2006
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	LADWP JOHN FERRARO BLDG
Classification:	Large Quantity Generator

Date form received by agency:	02/28/2004
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	JOHN FERRARO BUILDING
Classification:	Large Quantity Generator

Date form received by agency:	02/27/2002
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	JOHN FERRARO BLDG - LADWP
Classification:	Large Quantity Generator

Date form received by agency:	10/12/2000
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	GENERAL OFFICE BUILDING
Classification:	Large Quantity Generator

Date form received by agency:	09/01/1996
Facility name:	LADWP JOHN FERRARO BUILIDING
Site name:	LOS ANGELES DEPT WATER & POWER
Classification:	Small Quantity Generator

Date form received by agency:	03/09/1992

LADWP JOHN FERRARO BUILIDING (Continued) **1000474498**

Facility name: LADWP JOHN FERRARO BUILIDING
Site name: LOS ANGELES DEPARTMENT OF WATER AND POWE
Classification: Large Quantity Generator

Date form received by agency: 10/23/1991
Facility name: LADWP JOHN FERRARO BUILIDING
Site name: LOS ANGELES DEPT WATER & POWER
Classification: Large Quantity Generator

Date form received by agency: 04/03/1991
Facility name: LADWP JOHN FERRARO BUILIDING
Site name: LA DEPT WATER & POWER;MISC FACILITIES
Classification: Large Quantity Generator

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D002
Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D018
Waste name: BENZENE

Waste code: D035
Waste name: METHYL ETHYL KETONE

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS

LADWP JOHN FERRARO BUILIDING (Continued) **1000474498**

LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 06/30/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/28/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

FINDS:

Registry ID: 110002666106

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

US Facility Response Plan (FRP) contains plans for responding, to the maximum extent practical, to worst case discharges of oil.

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

WI MANIFEST:

Year: 05
EPA ID: CAD099450504
FID: 0

LADWP JOHN FERRARO BUILIDING (Continued) **1000474498**

ACT Code:	201
ACT Status:	A
ACT Code 1:	201
ACT Name:	HW Generator - Large
Contact First Name:	Not reported
Contact Last Name:	Not reported
Contact Title:	Not reported
Contact Address:	Not reported
Contact State:	Not reported
Contact City:	Not reported
Contact Zip:	0
Contact Telephone:	0
Contact Extention:	Not reported
Contact Email Address:	Not reported
Shipped:	-
Year:	Not reported
Manifest DOC ID:	Not reported
Copy Type:	Not reported
Gen EPA ID:	Not reported
Gen Date:	Not reported
TSD Date:	Not reported
TSD EPA ID:	Not reported
GEN Copy Revd Date:	Not reported
TSG Copy Revd Date:	Not reported

Transport:	-
Year:	Not reported
Manifest Doc ID:	Not reported
Transporter EPA ID:	Not reported
Transport Order Num:	Not reported
Transport Date:	Not reported

Waste:

Year:	Not reported
Manifest DOC ID:	Not reported
Waste Page No:	Not reported
Waste Line No:	Not reported
Waste Code:	Not reported
Waste Amount:	Not reported
Unit of Measure:	Not reported
Waste LBS:	Not reported

CS1065 **LA DEPARTMENT WATER & POWER** **HAZNET** **S103623003**
NNE **111 N HOPE ST #638** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 11 of 16 in cluster CS**

Relative:
Higher

Actual:
404 ft.

HAZNET:

Year:	2010
Gepaid:	CAD099450504
Contact:	MARK J SEDLACEK
Telephone:	2133670403
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST RM 1050
Mailing City,St,Zip:	LOS ANGELES, CA 900122607

LA DEPARTMENT WATER & POWER (Continued) **S103623003**

Gen County: Not reported
TSD EPA ID: CAT000613935
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.168
Facility County: Los Angeles

Year: 2010
Gepaid: CAD099450504
Contact: MARK J SEDLACEK
Telephone: 2133670403
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST RM 1050
Mailing City,St,Zip: LOS ANGELES, CA 900122607
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.125
Facility County: Los Angeles

Year: 2010
Gepaid: CAD099450504
Contact: MARK J SEDLACEK
Telephone: 2133670403
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST RM 1050
Mailing City,St,Zip: LOS ANGELES, CA 900122607
Gen County: Not reported
TSD EPA ID: TXD055141378
TSD County: Not reported
Waste Category: Polychlorinated biphenyls and material containing PCBs
Disposal Method: Incineration--Thermal Destruction Other Than Use As A Fuel
Tons: 0.53998
Facility County: Los Angeles

Year: 2010
Gepaid: CAD099450504
Contact: MARK J SEDLACEK
Telephone: 2133670403
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST RM 1050
Mailing City,St,Zip: LOS ANGELES, CA 900122607
Gen County: Not reported
TSD EPA ID: CAT000613935
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Not reported
Tons: 0.0417
Facility County: Los Angeles

Year: 2010
Gepaid: CAD099450504

LA DEPARTMENT WATER & POWER (Continued) **S103623003**

Contact: MARK J SEDLACEK
Telephone: 2133670403
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST RM 1050
Mailing City,St,Zip: LOS ANGELES, CA 900122607
Gen County: Not reported
TSD EPA ID: CAT000613935
TSD County: Not reported
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0417
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
308 additional CA_HAZNET: record(s) in the EDR Site Report.

CS1066 **GENERAL OFFICE BLDG.** **HIST UST** **U001560514**
NNE **111 N HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 12 of 16 in cluster CS**

Relative:
Higher

Actual:
404 ft.

HIST UST:
Region: STATE
Facility ID: 00000064836
Facility Type: Other
Other Type: WATER/ELECTRIC UTILI
Total Tanks: 0012
Contact Name: JOHN JENNINGS
Telephone: 2134814460
Owner Name: DEPARTMENT OF WATER AND POWER
Owner Address: 111 N. HOPE STREET
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 0107/CLARI
Year Installed: 1964
Tank Capacity: 00001600
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 002
Container Num: 0108/SUMP
Year Installed: 1964
Tank Capacity: 00000270
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 003
Container Num: 0109/SUMP
Year Installed: 1964
Tank Capacity: 00000270
Tank Used for: PRODUCT

GENERAL OFFICE BLDG. (Continued) **U001560514**

Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 004
Container Num: 0000000001
Year Installed: Not reported
Tank Capacity: 00000270
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 8 inches
Leak Detection: None

Tank Num: 005
Container Num: 01110/T-21
Year Installed: 1964
Tank Capacity: 00001000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 006
Container Num: 0112/T-22
Year Installed: 1964
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 007
Container Num: 0113/T-23
Year Installed: 1964
Tank Capacity: 00012000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: Visual

Tank Num: 008
Container Num: 0114/T-24
Year Installed: 1964
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

Tank Num: 009
Container Num: 0115/T-25
Year Installed: 1964
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

GENERAL OFFICE BLDG. (Continued) **U001560514**

Tank Num:	010
Container Num:	0116/T-27
Year Installed:	1964
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	011
Container Num:	0117/T-8
Year Installed:	1964
Tank Capacity:	00000800
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

Tank Num:	012
Container Num:	0118/T-9
Year Installed:	1964
Tank Capacity:	00000800
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Tank Construction:	Not reported
Leak Detection:	Visual

CS1067 **NNE** **< 1/8** **0.093 mi.** **489 ft.**	**LOS ANGELES DEPT. OF WATER & POWER** **111 NORTH HOPE STREET** **LOS ANGELES, CA 90051** **Site 13 of 16 in cluster CS**	**FTTS** **HIST FTTS**	**1009517534** **N/A**

Relative: **Higher**

Actual: **404 ft.**

FTTS INSP:

Inspection Number:	200304179ST12 1
Region:	09
Inspection Date:	04/17/03
Inspector:	CROLLINS
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

HIST FTTS INSP:

Inspection Number:	200304179ST12 1
Region:	09
Inspection Date:	Not reported
Inspector:	CROLLINS
Violation occurred:	Yes
Investigation Type:	Section 6 PCB Federal Conducted
Investigation Reason:	Neutral Scheme, State
Legislation Code:	TSCA
Facility Function:	User

CS1068 **L A DWP/GENERAL OFFICE BUILDING** **HAZNET** **S100866010**
NNE **111 N HOPE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 14 of 16 in cluster CS**

Relative:
Higher

Actual:
404 ft.

HAZNET:

Year:	1994
Gepaid:	CAL000042144
Contact:	LA DPT OF WATER&POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST #1121
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.2652
Facility County:	Los Angeles

Year:	1994
Gepaid:	CAL000042144
Contact:	LA DPT OF WATER&POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST #1121
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	.0000
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000042144
Contact:	LA DPT OF WATER&POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST #1121
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Not reported
Tons:	.0415
Facility County:	Los Angeles

Year:	1993
Gepaid:	CAL000042144
Contact:	LA DPT OF WATER&POWER
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	111 N HOPE ST #1121
Mailing City,St,Zip:	LOS ANGELES, CA 900120000

L A DWP/GENERAL OFFICE BUILDING (Continued) **S100866010**

Gen County: Los Angeles
TSD EPA ID: CAD067786749
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 285.0349
Facility County: Los Angeles

Year: 1993
Gepaid: CAL000042144
Contact: LA DPT OF WATER&POWER
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 111 N HOPE ST #1121
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0025
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

CS1069 **GENERAL OFFICE BUILDING** **UST** **U003879521**
NNE **111 N HOPE ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.093 mi.
489 ft. **Site 15 of 16 in cluster CS**

Relative: Higher

Actual: 404 ft.

UST:
Facility ID: 24316
Latitude: 34.05684
Longitude: -118.2494

SWEEPS UST:
Status: A
Comp Number: 3631
Number: 4
Board Of Equalization: 44-013172
Ref Date: 03-10-93
Act Date: 03-10-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-003631-000001
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 3

Status: A
Comp Number: 3631

GENERAL OFFICE BUILDING (Continued) **U003879521**

Number: 4
Board Of Equalization: 44-013172
Ref Date: 03-10-93
Act Date: 03-10-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-003631-000002
Actv Date: 04-20-88
Capacity: 12000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 3631
Number: 4
Board Of Equalization: 44-013172
Ref Date: 03-10-93
Act Date: 03-10-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-003631-000003
Actv Date: 04-20-88
Capacity: 1000
Tank Use: OIL
Stg: W
Content: WASTE OIL
Number Of Tanks: Not reported

CS1070	**HAIWEE RESERVOIR COMPLEX**	**Cortese**	**S111023309**
NNE	**111 N HOPE ST RM A18**	**ENF**	**N/A**
< 1/8	**LOS ANGELES, CA 90012**		
0.093 mi.			
489 ft.	**Site 16 of 16 in cluster CS**		

Relative:
Higher

Actual:
404 ft.

CORTESE:

Region: CORTESE
Envirostor Id: Not reported
Site/Facility Type: Not reported
Cleanup Status: Not reported
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: CORTESE
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: 6B
WID Id: 6B149503N01
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported

HAIWEE RESERVOIR COMPLEX (Continued) **S111023309**

ENF:

Region:	6B
Facility Id:	229488
Agency Name:	LADWP
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.056694
Place Longitude:	-118.24952
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported
Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	UNREGS
# Of Programs:	1
WDID:	6B149503N01
Reg Measure Id:	161108
Reg Measure Type:	Unregulated
Region:	6B
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	06/17/2005
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported

HAIWEE RESERVOIR COMPLEX (Continued) **S111023309**

WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	248962
Region:	6B
Order / Resolution Number:	UNKNOWN
Enforcement Action Type:	13267 Letter
Effective Date:	02/21/2002
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Active
Title:	Enforcement - 6B149503N01
Description:	13267 letter contains 12 due dates for site-specific study plan components.
Program:	UNREGS
Latest Milestone Completion Date:	11/22/2002
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	6B
Facility Id:	229488
Agency Name:	LADWP
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.056694
Place Longitude:	-118.24952
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	Not reported
Complexity:	Not reported

HAIWEE RESERVOIR COMPLEX (Continued) **S111023309**

Pretreatment:	Not reported
Facility Waste Type:	Not reported
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	UNREGS
# Of Programs:	1
WDID:	6B149503N01
Reg Measure Id:	161108
Reg Measure Type:	Unregulated
Region:	6B
Order #:	Not reported
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	Not reported
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	Not reported
Status:	Active
Status Date:	06/17/2005
Effective Date:	Not reported
Expiration/Review Date:	Not reported
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	Not reported
Fee Code:	Not reported
Direction/Voice:	Passive
Enforcement Id(EID):	219139
Region:	6B
Order / Resolution Number:	95-045
Enforcement Action Type:	Clean-up and Abatement Order
Effective Date:	03/23/1995
Adoption/Issuance Date:	Not reported
Achieve Date:	Not reported
Termination Date:	Not reported
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Active
Title:	Enforcement - 6B149503N01
Description:	LADWP OPERATES HAIWEE RESERVIOR COMPLEX-COPPER SULFATE DISCHARGERS INYO COUNTY
Program:	UNREGS
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0

HAIWEE RESERVOIR COMPLEX (Continued) **S111023309**

Total $ Paid/Completed Amount: 0

CW1071 **WINSTON TIRE COMPANY #51** **HAZNET** **S103996192**
South **1161-65 S MAIN** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.093 mi.
492 ft. **Site 3 of 3 in cluster CW**

Relative:
Lower

Actual:
241 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000023146
Contact:	OLIVER & WINSTON
Telephone:	8189721200
Mailing Name:	Not reported
Mailing Address:	900 W ALAMEDA AVE
Mailing City,St,Zip:	BURBANK, CA 915062802
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Oil/water separation sludge
Disposal Method:	Recycler
Tons:	.2085
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000023146
Contact:	OLIVER & WINSTON
Telephone:	8189721200
Mailing Name:	Not reported
Mailing Address:	900 W ALAMEDA AVE
Mailing City,St,Zip:	BURBANK, CA 915062802
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Transfer Station
Tons:	0.0625
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000023146
Contact:	OLIVER & WINSTON
Telephone:	8189721200
Mailing Name:	Not reported
Mailing Address:	900 W ALAMEDA AVE
Mailing City,St,Zip:	BURBANK, CA 915062802
Gen County:	Los Angeles
TSD EPA ID:	CAT000613935
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Not reported
Tons:	0
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000023146
Contact:	OLIVER & WINSTON
Telephone:	8189721200

WINSTON TIRE COMPANY #51 (Continued) **S103996192**

Mailing Name:	Not reported
Mailing Address:	900 W ALAMEDA AVE
Mailing City,St,Zip:	BURBANK, CA 915062802
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Recycler
Tons:	0.417
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000023146
Contact:	OLIVER & WINSTON
Telephone:	8189721200
Mailing Name:	Not reported
Mailing Address:	900 W ALAMEDA AVE
Mailing City,St,Zip:	BURBANK, CA 915062802
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Recycler
Tons:	.6255
Facility County:	Los Angeles

~~Click this hyperlink~~ while viewing on your computer to access
8 additional CA_HAZNET: record(s) in the EDR Site Report.

CZ1072 **FIGUEROA AT WILSHIRE LLC** **HAZNET** **S108206845**
North **601 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 9 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

HAZNET:

Year:	2005
Gepaid:	CAL000208042
Contact:	JIM BONHAM-PROPERTY MANAGER
Telephone:	2136249100
Mailing Name:	Not reported
Mailing Address:	601 S FIGUEROA ST STE 2625
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Transfer Station
Tons:	Not reported
Facility County:	Not reported

Year:	2004
Gepaid:	CAL000208042
Contact:	JIM BONHAM-PROPERTY MANAGER
Telephone:	2136249100
Mailing Name:	Not reported
Mailing Address:	601 S FIGUEROA ST STE 2625
Mailing City,St,Zip:	LOS ANGELES, CA 900170000

FIGUEROA AT WILSHIRE LLC (Continued) **S108206845**

Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Transfer Station
Tons: Not reported
Facility County: Not reported

CZ1073 **SANWA BANK PLAZA** **WDS** **S105774720**
North **601 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 10 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

CA WDS:

Facility ID: Los Angeles River 196000324
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAG994004 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 4
Facility Telephone: 2136249100
Facility Contact: Rob Perkins
Agency Name: FIGUEROA AT WILSHIRE LLC
Agency Address: Not reported
Agency City,St,Zip: 0
Agency Contact: Not reported
Agency Telephone: Not reported
Agency Type: Private
SIC Code: 6033
SIC Code 2: Not reported
Primary Waste: Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type: Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: No reclamation requirements associated with this facility.
POTW: The facility is not a POTW.
Treat To Water: 0
Complexity: Not reported

CZ1074 **MITSUI AND CO** **HAZNET** **S103977942**
North **601 SOUTH FIGUEROA ST, #1950** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 11 of 23 in cluster CZ**

Relative: **Higher**

Actual: **301 ft.**

HAZNET:

Year:	1996
Gepaid:	CAC001060880
Contact:	MITSUI AND CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	601 SOUTH FIGUEROA ST, #1950
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAL000121946
TSD County:	Marin
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.3335
Facility County:	Los Angeles

CZ1075 **MITSUI FUDOSAN (USA) INC** **FINDS** **1005775476**
North **600-601 SO FIGUEROA ST** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 12 of 23 in cluster CZ**

Relative: **Higher**

Actual: **301 ft.**

FINDS:

Registry ID: 110010476920

Environmental Interest/Information System

The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1995

MITSUI FUDOSAN (USA) INC (Continued) **1005775476**

County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD

MITSUI FUDOSAN (USA) INC (Continued) **1005775476**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	73364
Air District Name:	SC
SIC Code:	8748
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

MITSUI FUDOSAN (USA) INC (Continued) **1005775476**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CZ1076 **HINES** **HAZNET** **S108208879**
North **601 S FIGUEROA** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 13 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002587982
Contact:	JIM KRACMER
Telephone:	2136249100
Mailing Name:	Not reported
Mailing Address:	601 S FIGUEROA
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	0.31
Facility County:	Not reported

CZ1077 **FRENCH COLONIAL LAUNDRY** **EDR Historical Cleaners** **1009189704**
North **601 S FIGEROA** **N/A**
< 1/8 **LOS ANGELES, CA**
0.095 mi.
501 ft. **Site 14 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

EDR Historical Cleaners:

Name:	ALEXENDER JAS
Year:	1929
Type:	LAUNDRIES HAND
Name:	ALEXANDER JAS
Year:	1933
Type:	LAUNDRIES HAND
Name:	FRENCH COLONIAL LAUNDRY
Year:	1937
Type:	LAUNDRIES HAND
Name:	ALEXANDER J A
Year:	1942
Type:	LAUNDRIES HAND

CZ1078 **SAN WA BANK** **HAZNET** **S103666401**
North **601 S FIGUEROA** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 15 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

HAZNET:

Year:	1997
Gepaid:	CAC001364504
Contact:	SAN WA BANK
Telephone:	8008508680
Mailing Name:	Not reported
Mailing Address:	601 S FIGUEROA
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080025711
TSD County:	San Bernardino
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAC001225024
Contact:	SAN WA BANK
Telephone:	8008508680
Mailing Name:	Not reported
Mailing Address:	601 S FIGUEROA
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	.3544
Facility County:	Los Angeles

CZ1079 **JIM KRACHMER** **CA FID UST** **S101583784**
North **601 S FIGUEROA ST** **HAZNET** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 16 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

CA FID UST:

Facility ID:	19006184
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2136295200
Mail To:	Not reported
Mailing Address:	601 S FIGUEROA ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported

JIM KRACHMER (Continued) **S101583784**

Status: Active

HAZNET:

Year: 2003
Gepaid: CAC002563059
Contact: JIM KRACHMER
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 10100 SANTA MARIA BLVD STE 180
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAD099452708
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.41
Facility County: Los Angeles

Year: 2002
Gepaid: CAL000208042
Contact: JOSEPH TUPY
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 601 SOUTH FIGUEROA STREET SUITE
Mailing City,St,Zip: LOS ANGELES, CA 900175719
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Oil/water separation sludge
Disposal Method: Recycler
Tons: 5.62
Facility County: Not reported

Year: 1999
Gepaid: CAL000145323
Contact: MITSUI FUDOSAN USA INC
Telephone: 2136831757
Mailing Name: Not reported
Mailing Address: 601 SOUTH FIGUEROA STREET SUITE 2030
Mailing City,St,Zip: LOS ANGELES, CA 900175725
Gen County: Los Angeles
TSD EPA ID: CAD981696420
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Transfer Station
Tons: 0.1668
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000145323
Contact: MITSUI FUDOSAN USA INC
Telephone: 2136831757
Mailing Name: Not reported
Mailing Address: 601 SOUTH FIGUEROA STREET SUITE 2030
Mailing City,St,Zip: LOS ANGELES, CA 900175725
Gen County: Los Angeles
TSD EPA ID: CAD008302903

JIM KRACHMER (Continued) **S101583784**

TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Recycler
Tons: .1251
Facility County: Los Angeles

Year: 1997
Gepaid: CAL000145323
Contact: MITSUI FUDOSAN USA INC
Telephone: 2136831757
Mailing Name: Not reported
Mailing Address: 601 SOUTH FIGUEROA STREET SUITE 2030
Mailing City,St,Zip: LOS ANGELES, CA 900175725
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Tons: .1459
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

CZ1080 **TRIZEC 601 FIGUEROA LLC** **HAZNET** **S108756859**
North **601 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 17 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

HAZNET:
Year: 2009
Gepaid: CAL000297954
Contact: JIM KRACHMER
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 601 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Latex waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 1.29
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000297954
Contact: JIM KRACHMER
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 601 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD981696420
TSD County: Los Angeles
Waste Category: Other organic solids

TRIZEC 601 FIGUEROA LLC (Continued) **S108756859**

Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.05
Facility County: Los Angeles

Year: 2009
Gepaid: CAL000297954
Contact: JIM KRACHMER
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 601 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.108
Facility County: Los Angeles

Year: 2006
Gepaid: CAL000297954
Contact: JIM KRACHMER
Telephone: 2136249100
Mailing Name: Not reported
Mailing Address: 601 S FIGUEROA ST
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 0.15
Facility County: Los Angeles

CZ1081 **MITSUI FUDOSAN USA INC** **UST** **U003780848**
North **601 S FIGUEROA ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.095 mi.
501 ft. **Site 18 of 23 in cluster CZ**

Relative:
Higher

Actual:
301 ft.

UST:
Facility ID: 24416
Latitude: 34.05076
Longitude: -118.25859

SWEEPS UST:
Status: A
Comp Number: 7210
Number: 1
Board Of Equalization: 44-013258
Ref Date: 02-25-93
Act Date: 02-25-93
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported

MITSUI FUDOSAN USA INC (Continued) **U003780848**

Swrcb Tank Id:	19-050-007210-000001
Actv Date:	04-20-88
Capacity:	1000
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

DC1082
North
< 1/8
0.095 mi.
502 ft.

HAZARD J A
618 S FIGUEROA ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009079099** **N/A**

Site 1 of 4 in cluster DC

Relative: **Higher**

Actual: **296 ft.**

EDR Historical Auto Stations:

Name:	HAZARD J A
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

CZ1083
North
< 1/8
0.095 mi.
504 ft.

POTTS M F
951 WILSHIRE BLVD
LOS ANGELES, CA

EDR Historical Auto Stations **1009084767** **N/A**

Site 19 of 23 in cluster CZ

Relative: **Higher**

Actual: **308 ft.**

EDR Historical Auto Stations:

Name:	POTTS M F
Year:	1942
Type:	AUTOMOBILE REPAIRING

CL1084
West
< 1/8
0.096 mi.
507 ft.

READY REPRODUCTIONS INC
750 W TENTH PL
LOS ANGELES, CA 90015

HAZNET **S103671304** **N/A**

Site 3 of 5 in cluster CL

Relative: **Lower**

Actual: **242 ft.**

HAZNET:

Year:	1998
Gepaid:	CAL000081431
Contact:	READY IND INC&READY PROPERTIE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1212 S OLIVE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900151313
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	1.0008
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000081431
Contact:	READY IND INC&READY PROPERTIE

READY REPRODUCTIONS INC (Continued) **S103671304**

Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1212 S OLIVE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900151313
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.5004
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAL000081431
Contact:	READY IND INC&READY PROPERTIE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1212 S OLIVE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900151313
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	1.0842
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000081431
Contact:	READY IND INC&READY PROPERTIE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1212 S OLIVE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900151313
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	1.0008
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000081431
Contact:	READY IND INC&READY PROPERTIE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	1212 S OLIVE STREET
Mailing City,St,Zip:	LOS ANGELES, CA 900151313
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Not reported
Tons:	.6255
Facility County:	Los Angeles

READY REPRODUCTIONS INC (Continued) **S103671304**

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

DB1085 **PACIFIC CENTER** **HAZNET** **S108741483**
NE **523 W 6TH ST STE 220** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.096 mi.
508 ft. **Site 3 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	2009
Gepaid:	CAL000342522
Contact:	FRANK KHAN
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W 6TH ST STE 220
Mailing City,St,Zip:	LOS ANGELES, CA 900141228
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.6
Facility County:	Los Angeles

Year:	2009
Gepaid:	CAL000342522
Contact:	FRANK KHAN
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W 6TH ST STE 220
Mailing City,St,Zip:	LOS ANGELES, CA 900141228
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Other inorganic solid waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	22.7556
Facility County:	Los Angeles

Year:	2006
Gepaid:	CAC002608112
Contact:	RON PIRA
Telephone:	2139434611
Mailing Name:	Not reported
Mailing Address:	523 W 6TH ST STE 220
Mailing City,St,Zip:	LOS ANGELES, CA 900141228
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	H13
Tons:	3.37
Facility County:	Los Angeles

DB1086 **THORNTON RANCH** **HIST UST** **U001560586**
NE **523 W 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.096 mi.
508 ft. **Site 4 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

HIST UST:

Region:	STATE
Facility ID:	00000041485
Facility Type:	Other
Other Type:	RANCH
Total Tanks:	0001
Contact Name:	JAMES GILDER
Telephone:	8054953028
Owner Name:	THORNTON TRUST
Owner Address:	523 WEST SIXTH ST
Owner City,St,Zip:	LOS ANGELES, CA 90014

Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00004000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Tank Construction:	Not reported
Leak Detection:	Visual

DB1087 **COLLEGE READY ACADEMY HIGH #5** **FINDS** **1011464134**
NE **1729 WEST MARTIN LUTHER KING** **N/A**
< 1/8 **LOS ANGELES, CA 90062**
0.096 mi.
508 ft. **Site 5 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

FINDS:

Registry ID: 110036038061

Environmental Interest/Information System
NCES (National Center for Education Statistics) is the primary federal entity for collecting and analyzing data related to education in the United States and other nations and the institute of education sciences.

DB1088 **523 PACIFIC CENTER ASSOCIATES LLC** **HAZNET** **S108741484**
NE **523 W 6TH ST STE 330** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.096 mi.
508 ft. **Site 6 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002610706
Contact:	FRANK KAHN
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W 6TH ST STE 220
Mailing City,St,Zip:	LOS ANGELES, CA 900141228

523 PACIFIC CENTER ASSOCIATES LLC (Continued) **S108741484**

Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 6.4
Facility County: Los Angeles

Year: 2008
Gepaid: CAC002610706
Contact: FRANK KAHN
Telephone: 2136222033
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 220
Mailing City,St,Zip: LOS ANGELES, CA 900141228
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 33.712
Facility County: Los Angeles

Year: 2007
Gepaid: CAC002610706
Contact: FRANK KAHN
Telephone: 2136222033
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 220
Mailing City,St,Zip: LOS ANGELES, CA 900141228
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 8
Facility County: Los Angeles

Year: 2006
Gepaid: CAC002610706
Contact: FRANK KAHN
Telephone: 2136222033
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 220
Mailing City,St,Zip: LOS ANGELES, CA 900141228
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: H13
Tons: 1.68
Facility County: Los Angeles

DB1089 **COPLEY PACIFIC ASSOCIATES LTD** **EMI** **S106829249**
NE **523 W SIXTH ST SUITE 212** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.096 mi.
508 ft. **Site 7 of 17 in cluster DB**

Relative: **Higher**

Actual: **272 ft.**

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	40689
Air District Name:	SC
SIC Code:	6512
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers & Smllr Tons/Yr:	1

DB1090 **COLLEGE READY ACADEMY HIGH #7** **FINDS** **1011472366**
NE **1265 EAST 112TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90059**
0.096 mi.
508 ft. **Site 8 of 17 in cluster DB**

Relative: **Higher**

Actual: **272 ft.**

FINDS:

Registry ID: 110036094188

Environmental Interest/Information System
NCES (National Center for Education Statistics) is the primary federal entity for collecting and analyzing data related to education in the United States and other nations and the institute of education sciences.

DB1091 **523 W 6TH ST ASSOCIATES LTD/PA** **CA FID UST** **S101629307**
NE **523 W 6TH ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90014** **EMI**
0.096 mi.
508 ft. **Site 9 of 17 in cluster DB**

Relative: **Higher**

Actual: **272 ft.**

CA FID UST:

Facility ID:	19006663
Regulated By:	UTNKI
Regulated ID:	00041485
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8054953028
Mail To:	Not reported
Mailing Address:	523 W 6TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900140000

523 W 6TH ST ASSOCIATES LTD/PA (Continued) **S101629307**

Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	2281
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-002281-000001
Actv Date:	Not reported
Capacity:	4000
Tank Use:	M.V. FUEL
Stg:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	1

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	61516
Air District Name:	SC
SIC Code:	8742
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DB1092
NE
< 1/8
0.096 mi.
508 ft.

LA PACIFIC CENTER
523 W SIXTH ST STE 218
LOS ANGELES, CA 90014

FINDS 1007737683
HAZNET N/A

Site 10 of 17 in cluster DB

Relative:
Higher

Actual:
272 ft.

FINDS:

Registry ID: 110018970880

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART)
provides California with information on hazardous waste shipments for

LA PACIFIC CENTER (Continued) **1007737683**

generators, transporters, and treatment, storage, and disposal facilities.

HAZNET:

Year:	2004
Gepaid:	CAR000143198
Contact:	VANNA KIM
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W SIXTH ST STE 218
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	2.52
Facility County:	Not reported

Year:	2003
Gepaid:	CAR000143198
Contact:	VANNA KIM
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W SIXTH ST STE 218
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD008364432
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Transfer Station
Tons:	0.41
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAR000143198
Contact:	VANNA KIM
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W SIXTH ST STE 218
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	WAD991281767
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	0
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAR000143198
Contact:	VANNA KIM
Telephone:	2136222033
Mailing Name:	Not reported
Mailing Address:	523 W SIXTH ST STE 218
Mailing City,St,Zip:	LOS ANGELES, CA 900140000

LA PACIFIC CENTER (Continued) **1007737683**

Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Liquids with pH <= 2
Disposal Method: Transfer Station
Tons: 0.02
Facility County: Los Angeles

Year: 2003
Gepaid: CAR000143198
Contact: VANNA KIM
Telephone: 2136222033
Mailing Name: Not reported
Mailing Address: 523 W SIXTH ST STE 218
Mailing City,St,Zip: LOS ANGELES, CA 900140000
Gen County: Los Angeles
TSD EPA ID: CAD008364432
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Treatment, Tank
Tons: 2.22
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

DB1093 **523 W 6TH ST ASSOCIATES,LTD** **RCRA-SQG** **1000135671**
NE **523 W 6TH STREET SUITE 246** **FINDS** **CAD982512311**
< 1/8 **LOS ANGELES, CA 90014** **HAZNET**
0.096 mi.
508 ft. **Site 11 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: 523 W 6TH ST ASSOCIATES,LTD
Facility address: 523 W 6TH STREET SUITE 246
LOS ANGELES, CA 90014
EPA ID: CAD982512311
Mailing address: W SIXTH STREET SUITE 246
LOS ANGELES, CA 90014
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: 523 W 6TH ST ASSOCIATES,LTD
Owner/operator address: NOT REQUIRED

523 W 6TH ST ASSOCIATES,LTD (Continued) **1000135671**

NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002837921

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZNET:
Year: 1994
Gepaid: CAD982512311
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 246

523 W 6TH ST ASSOCIATES,LTD (Continued) **1000135671**

Mailing City,St,Zip: LOS ANGELES, CA 900141217
Gen County: Los Angeles
TSD EPA ID: CAL000027741
TSD County: 5
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 29.9194
Facility County: Los Angeles

Year: 1994
Gepaid: CAD982512311
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 246
Mailing City,St,Zip: LOS ANGELES, CA 900141217
Gen County: Los Angeles
TSD EPA ID: CAL000027741
TSD County: 5
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 1.6856
Facility County: Los Angeles

Year: 1994
Gepaid: CAD982512311
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 246
Mailing City,St,Zip: LOS ANGELES, CA 900141217
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .2107
Facility County: Los Angeles

Year: 1993
Gepaid: CAD982512311
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 523 W 6TH ST STE 246
Mailing City,St,Zip: LOS ANGELES, CA 900141217
Gen County: Los Angeles
TSD EPA ID: CAD990794133
TSD County: San Joaquin
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: .0000
Facility County: Los Angeles

Year: 1993
Gepaid: CAD982512311
Contact: Not reported

523 W 6TH ST ASSOCIATES,LTD (Continued) **1000135671**

Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	523 W 6TH ST STE 246
Mailing City,St,Zip:	LOS ANGELES, CA 900141217
Gen County:	Los Angeles
TSD EPA ID:	CAL000027741
TSD County:	5
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	4.2140
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

CB1094
ENE
< 1/8
0.097 mi.
512 ft.

5TH STREET LOFT LLC
548 S SPRING ST
LOS ANGELES, CA 90013

HAZNET **S108196282**
N/A

Site 8 of 8 in cluster CB

Relative:
Higher

Actual:
262 ft.

HAZNET:

Year:	2005
Gepaid:	CAC002593731
Contact:	AMIT TIDHAR/PROJ MGR
Telephone:	8189749849
Mailing Name:	Not reported
Mailing Address:	312 W 5TH ST OFFICE
Mailing City,St,Zip:	LOS ANGELES, CA 90013
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	67.42
Facility County:	Not reported

CN1095
NE
< 1/8
0.097 mi.
513 ft.

GRAND AVENUE GARAGE
525 W 5TH ST
LOS ANGELES, CA 90013

CA FID UST
SWEEPS UST

S101586502
N/A

Site 6 of 7 in cluster CN

Relative:
Higher

Actual:
280 ft.

CA FID UST:

Facility ID:	19052567
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	525 W 5TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900130000
Contact:	Not reported
Contact Phone:	Not reported

GRAND AVENUE GARAGE (Continued) **S101586502**

DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	6764
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

CN1096 **CALIFORNIA MOTOR SERVICE CO** **EDR Historical Auto Stations** **1009077573**
NE **525 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.097 mi.
513 ft. **Site 7 of 7 in cluster CN**

Relative:
Higher

Actual:
280 ft.

EDR Historical Auto Stations:

Name:	CALIFORNIA MOTOR SERVICE CO
Year:	1924
Type:	AUTOMOBILE SERVICE STATIONS

CL1097 **ROBISON-PREZIOSO/STAPLES CENTER** **HAZNET** **S104569992**
West **901 W 11TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.098 mi.
515 ft. **Site 4 of 5 in cluster CL**

Relative:
Lower

Actual:
242 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002566294
Contact:	BILL PORTERHOFF
Telephone:	2137427400
Mailing Name:	Not reported
Mailing Address:	PO BOX 2448
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 906700000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	0.38
Facility County:	Los Angeles

ROBISON-PREZIOSO/STAPLES CENTER (Continued) **S104569992**

Year:	2003
Gepaid:	CAC002566294
Contact:	BILL PORTERHOFF
Telephone:	2137427400
Mailing Name:	Not reported
Mailing Address:	PO BOX 2448
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 906700000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Treatment, Tank
Tons:	0.41
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAC002117504
Contact:	ROBISON-PREZIOSOS INC
Telephone:	5629069002
Mailing Name:	Not reported
Mailing Address:	PO BOX 2448
Mailing City,St,Zip:	SANTA FE SPRINGS, CA 906700000
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Paint sludge
Disposal Method:	Recycler
Tons:	2.2935
Facility County:	Los Angeles

DB1098
NE
< 1/8
0.098 mi.
516 ft.

FOX PHOTO INC
525 W 6TH ST
LOS ANGELES, CA 90014

HAZNET **S102815376**
N/A

Site 12 of 17 in cluster DB

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	1997
Gepaid:	CAL000076840
Contact:	FOX PHOTO INC
Telephone:	8006699699
Mailing Name:	Not reported
Mailing Address:	4955 MARCONI DR.
Mailing City,St,Zip:	ALPHARETTA, GA 300051717
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1265
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000076840
Contact:	FOX PHOTO INC
Telephone:	8006699699
Mailing Name:	Not reported
Mailing Address:	4955 MARCONI DR.

FOX PHOTO INC (Continued) **S102815376**

Mailing City,St,Zip: ALPHARETTA, GA 300051717
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Other inorganic solid waste
Disposal Method: Recycler
Tons: .0055
Facility County: Los Angeles

Year: 1996
Gepaid: CAL000076840
Contact: FOX PHOTO INC
Telephone: 8006699699
Mailing Name: Not reported
Mailing Address: 4955 MARCONI DR.
Mailing City,St,Zip: ALPHARETTA, GA 300051717
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Not reported
Disposal Method: Recycler
Tons: .0000
Facility County: Los Angeles

Year: 1996
Gepaid: CAL000076840
Contact: FOX PHOTO INC
Telephone: 8006699699
Mailing Name: Not reported
Mailing Address: 4955 MARCONI DR.
Mailing City,St,Zip: ALPHARETTA, GA 300051717
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .1000
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000076840
Contact: FOX PHOTO INC
Telephone: 8006699699
Mailing Name: Not reported
Mailing Address: 4955 MARCONI DR.
Mailing City,St,Zip: ALPHARETTA, GA 300051717
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method: Recycler
Tons: .0750
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

DB1099 **WOLF CAMERA #05020** **HAZNET** **S105090332**
NE **525 WEST 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.098 mi.
516 ft. **Site 13 of 17 in cluster DB**

Relative: Higher

Actual: 272 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000140688
Contact:	WOLF CAMERA OF ALPHARETTA GA
Telephone:	6782979653
Mailing Name:	Not reported
Mailing Address:	4955 MARCONI DR
Mailing City,St,Zip:	ALPHARETTA, GA 300050000
Gen County:	Los Angeles
TSD EPA ID:	CAD003963592
TSD County:	Santa Clara
Waste Category:	Other inorganic solid waste
Disposal Method:	Recycler
Tons:	.0025
Facility County:	Los Angeles

DC1100 **TREPTOW PROPERTY MANAGEMENT CO** **EMI** **S106841338**
North **616 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.098 mi.
520 ft. **Site 2 of 4 in cluster DC**

Relative: Higher

Actual: 296 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	76940
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CZ1101 **TULIS HARRY** **EDR Historical Auto Stations** **1009083927**
North **963 WILSHIRE BLVD** **N/A**
< 1/8 **LOS ANGELES, CA**
0.099 mi.
522 ft. **Site 20 of 23 in cluster CZ**

Relative: Higher

Actual: 309 ft.

EDR Historical Auto Stations:

Name:	TULIS HARRY
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

DB1102 **PACIFIC MUTUAL BUILDING** **HIST CORTESE** **S100928629**
NE **523 006TH ST W** **LUST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.099 mi.
523 ft. **Site 14 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900140016

LUST:

Region:	STATE
Global Id:	T0603700543
Latitude:	34.0482412
Longitude:	-118.2542924
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/22/1996
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900140016
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700543
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported
Global Id:	T0603700543
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700543
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

PACIFIC MUTUAL BUILDING (Continued) **S100928629**

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900140016
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Groundwater
Abatement Method Used at the Site:	Remove Free Product
Global ID:	T0603700543
W Global ID:	W0605100582
Staff:	UNK
Local Agency:	19050
Cross Street:	PACIFIC AVE
Enforcement Type:	Not reported
Date Leak Discovered:	Not reported
Date Leak First Reported:	12/21/1987
Date Leak Record Entered:	3/31/1988
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	9/25/1996
Date the Case was Closed:	10/22/1996
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Not reported
Leak Source:	Not reported
Operator:	Not reported
Water System:	YMCA CAMP OF LOS ANGELES 2
Well Name:	Not reported
Approx. Dist To Production Well (ft):	1450.623945762386496081898262
Source of Cleanup Funding:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	9/18/1988
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	Not reported
Post Remedial Action Monitoring Began:	Not reported
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Yes
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	PM REALTY GROUP
RP Address:	523 W 6TH ST, SUITE 218, LOS ANGELES CA 90014
Program:	LUST
Lat/Long:	34.0482412 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported

PACIFIC MUTUAL BUILDING (Continued) **S100928629**

Assigned Name: 2600582-001GEN
Summary: Not reported

CL1103
West
< 1/8
0.099 mi.
524 ft.

CITY OF LOS ANGELES
748 W 10TH PLACE
LOS ANGELES, CA 90012

HAZNET **S104570633**
N/A

Site 5 of 5 in cluster CL

Relative:
Lower

Actual:
242 ft.

HAZNET:

Year: 1999
Gepaid: CAC002140505
Contact: CALI REDEVELOPMENT AGENCY
Telephone: 2139772614
Mailing Name: Not reported
Mailing Address: 354 S SPRING ST STE 600
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: AZ0000278986
TSD County: 0
Waste Category: Not reported
Disposal Method: Not reported
Tons: 22
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002140505
Contact: CALI REDEVELOPMENT AGENCY
Telephone: 2139772614
Mailing Name: Not reported
Mailing Address: 354 S SPRING ST STE 600
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: AZC094062239
TSD County: 99
Waste Category: Not reported
Disposal Method: Recycler
Tons: 66
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002140505
Contact: CALI REDEVELOPMENT AGENCY
Telephone: 2139772614
Mailing Name: Not reported
Mailing Address: 354 S SPRING ST STE 600
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT000646117
TSD County: Kings
Waste Category: Contaminated soil from site clean-up
Disposal Method: Disposal, Land Fill
Tons: 537
Facility County: Los Angeles

Year: 1999
Gepaid: CAC002140505
Contact: CALI REDEVELOPMENT AGENCY

CITY OF LOS ANGELES (Continued) **S104570633**

Telephone:	2139772614
Mailing Name:	Not reported
Mailing Address:	354 S SPRING ST STE 600
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Contaminated soil from site clean-up
Disposal Method:	Not reported
Tons:	72
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAC002140505
Contact:	CALI REDEVELOPMENT AGENCY
Telephone:	2139772614
Mailing Name:	Not reported
Mailing Address:	354 S SPRING ST STE 600
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	AZC094062289
TSD County:	0
Waste Category:	Not reported
Disposal Method:	Recycler
Tons:	44
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

BT1104 **TOW CHAS** **EDR Historical Auto Stations** **1009083920**
NNW **1000 W 8TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.100 mi.
530 ft. **Site 5 of 5 in cluster BT**

Relative: Higher

Actual: 259 ft.

EDR Historical Auto Stations:

Name:	BOOKMEYER HERMAN
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS

Name:	TOW CHAS
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

CC1105 **NIPPON EXPRESS USA INC.** **SWEEPS UST** **S106929919**
WNW **970 FRANCISCO ST** **N/A**
< 1/8 **LOS ANGELES, CA 90000**
0.102 mi.
536 ft. **Site 3 of 3 in cluster CC**

Relative: Lower

Actual: 247 ft.

SWEEPS UST:

Status:	Not reported
Comp Number:	8261
Number:	Not reported
Board Of Equalization:	Not reported

NIPPON EXPRESS USA INC. (Continued) **S106929919**

Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

DB1106 **STANTON, INC** **RCRA-SQG** **1000322662**
NE **530 W 6TH ST, STE 407** **FINDS** **CAD099007890**
< 1/8 **LOS ANGELES, CA 90014**
0.102 mi.
540 ft. **Site 15 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	STANTON, INC
Facility address:	530 W 6TH ST, STE 407 LOS ANGELES, CA 90014
EPA ID:	CAD099007890
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	JONES LANG WOOTTON
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner

STANTON, INC (Continued) **1000322662**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency: 03/07/1986
Facility name: STANTON, INC
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002666053

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DB1107 **TOBANC ASSOCIATES LTD** **HAZNET** **S102810670**
NE **530 W 6TH STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.102 mi.
540 ft. **Site 16 of 17 in cluster DB**

Relative: Higher

Actual: 272 ft.

HAZNET:

Year:	1999
Gepaid:	CAL000023392
Contact:	TOBANC ASSOCIATES LTD
Telephone:	2136274365
Mailing Name:	Not reported
Mailing Address:	530 W 6TH ST STE 710
Mailing City,St,Zip:	LOS ANGELES, CA 900141211
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99

TOBANC ASSOCIATES LTD (Continued) **S102810670**

Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 37.0832
Facility County: Los Angeles

Year: 1998
Gepaid: CAL000023392
Contact: TOBANC ASSOCIATES LTD
Telephone: 2136274365
Mailing Name: Not reported
Mailing Address: 530 W 6TH ST STE 710
Mailing City,St,Zip: LOS ANGELES, CA 900141211
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 32.8692
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000023392
Contact: TOBANC ASSOCIATES LTD
Telephone: 2136274365
Mailing Name: Not reported
Mailing Address: 530 W 6TH ST STE 710
Mailing City,St,Zip: LOS ANGELES, CA 900141211
Gen County: Los Angeles
TSD EPA ID: CAD067786749
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 25.2840
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000023392
Contact: TOBANC ASSOCIATES LTD
Telephone: 2136274365
Mailing Name: Not reported
Mailing Address: 530 W 6TH ST STE 710
Mailing City,St,Zip: LOS ANGELES, CA 900141211
Gen County: Los Angeles
TSD EPA ID: CAD981388952
TSD County: Shasta
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .0700
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000023392
Contact: TOBANC ASSOCIATES LTD
Telephone: 2136274365
Mailing Name: Not reported
Mailing Address: 530 W 6TH ST STE 710
Mailing City,St,Zip: LOS ANGELES, CA 900141211

TOBANC ASSOCIATES LTD (Continued) **S102810670**

Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Recycler
Tons:	7.6102
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

DB1108 **RO-MEL MFG INC** **HAZNET** **S103663806**
NE **530 W 6TH ST SUITE 1100** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.102 mi.
540 ft. **Site 17 of 17 in cluster DB**

Relative:
Higher

Actual:
272 ft.

HAZNET:

Year:	1994
Gepaid:	CAL000038293
Contact:	HOFFENBERG RHODA
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	530 W 6TH ST SUITE 1100
Mailing City,St,Zip:	LOS ANGELES, CA 900140000
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Paint sludge
Disposal Method:	Treatment, Incineration
Tons:	.0375
Facility County:	Los Angeles

CJ1109 **CURRENT OCCUPANT** **CA FID UST** **S101585316**
SE **110 E 9TH ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.103 mi.
544 ft. **Site 4 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

CA FID UST:

Facility ID:	19022745
Regulated By:	UTNKA
Regulated ID:	00007905
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	110 E 9TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported

CURRENT OCCUPANT (Continued) **S101585316**

Status: Active

SWEEPS UST:

Status: A
Comp Number: 909
Number: 9
Board Of Equalization: 44-031778
Ref Date: 03-25-93
Act Date: 03-15-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000909-000001
Actv Date: 04-20-88
Capacity: 7500
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 4

Status: A
Comp Number: 909
Number: 9
Board Of Equalization: 44-031778
Ref Date: 03-25-93
Act Date: 03-15-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000909-000002
Actv Date: 04-20-88
Capacity: 7500
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 909
Number: 9
Board Of Equalization: 44-031778
Ref Date: 03-25-93
Act Date: 03-15-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-000909-000003
Actv Date: 04-20-88
Capacity: 7500
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 909
Number: 9

CURRENT OCCUPANT (Continued) **S101585316**

Board Of Equalization:	44-031778
Ref Date:	03-25-93
Act Date:	03-15-94
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-000909-000004
Actv Date:	04-20-88
Capacity:	7500
Tank Use:	M.V. FUEL
Stg:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

CJ1110 **SERVICE STATION 7117** **HIST UST** **U001560744**
SE **110 E 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.103 mi.
544 ft. **Site 5 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HIST UST:

Region:	STATE
Facility ID:	00000007905
Facility Type:	Gas Station
Other Type:	Not reported
Total Tanks:	0004
Contact Name:	CALIFORNIA MART
Telephone:	0000000000
Owner Name:	UNION OIL COMPANY OF CALIFORNI
Owner Address:	3701 WILSHIRE BOULEVARD-SUITE
Owner City,St,Zip:	LOS ANGELES, CA 90010

Tank Num:	001
Container Num:	7117-2
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	7117-1C
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	003
Container Num:	7117-1B
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor, 10

SERVICE STATION 7117 (Continued) **U001560744**

Tank Num:	004
Container Num:	7117-1A
Year Installed:	Not reported
Tank Capacity:	00007500
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

DA1111 **NATIONAL CITY TOWERS LLC** **HAZNET** **S108751593**
ESE **810 S SPRING ST** **N/A**
< 1/8 **LOS ANGELES, CA 90014**
0.103 mi.
546 ft. **Site 6 of 7 in cluster DA**

Relative: **Lower**

Actual: **250 ft.**

HAZNET:

Year:	2006
Gepaid:	CAC002602097
Contact:	SHAWN AFSHANI
Telephone:	2136149999
Mailing Name:	Not reported
Mailing Address:	830 S HILL ST STE 371
Mailing City,St,Zip:	LOS ANGELES, CA 90014
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	25.28
Facility County:	Los Angeles

CJ1112 **BENGHIT ELI** **EDR Historical Cleaners** **1009188882**
ESE **856 S MAIN ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.104 mi.
547 ft. **Site 6 of 19 in cluster CJ**

Relative: **Lower**

Actual: **247 ft.**

EDR Historical Cleaners:

Name:	BENGHIT ELI
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

DD1113 **76 PRODUCTS STATION #1099** **HIST CORTESE** **S105024620**
NE **200 HILL** **N/A**
< 1/8 **LOS ANGELES, CA 90033**
0.104 mi.
547 ft. **Site 1 of 4 in cluster DD**

Relative: **Higher**

Actual: **342 ft.**

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	911060025

DD1114 **LOS ANGELES CITY-TUJUNGA & SHE** **WMUDS/SWAT** **S100839295**
NE **500' E TUJUNGA, 500' N SHERMAN** **N/A**
< 1/8 **LOS ANGELES, CA**
0.105 mi.
556 ft. **Site 2 of 4 in cluster DD**

Relative:
Higher

Actual:
341 ft.

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	Not reported
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	CITY OF LOS ANGELES
Agency Department:	Not reported
Agency Address:	Not reported
Agency City,St,Zip:	Not reported
Agency Contact:	Not reported
Agency Telephone:	Not reported
Land Owner Name:	Not reported
Land Owner Address:	Not reported
Land Owner City,St,Zip:	CA
Land Owner Contact:	Not reported
Land Owner Phone:	Not reported
Region:	4
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	Not reported
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	CITY OF LOS ANGELES
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	LT
Number of WMUDS at Facility:	1
Section Range:	Not reported
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	4 190236NUR
Solid Waste Information ID:	Not reported

DD1115 **LA CO HALL OF ADMINIST.** **HIST CORTESE** **S102432399**
NE **500 TEMPLE ST W** **LUST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.105 mi.
556 ft. **Site 3 of 4 in cluster DD**

Relative:
Higher

Actual:
341 ft.

CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	900120389

LUST:

Region:	STATE
Global Id:	T0603700533
Latitude:	34.056684
Longitude:	-118.246368
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/06/1990
Lead Agency:	LOS ANGELES, CITY OF
Case Worker:	EL
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900120389
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700533
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T0603700533
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700533
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported

Global Id:	T0603700533
Action Type:	Other

LA CO HALL OF ADMINIST. (Continued) **S102432399**

Date: 01/01/1950
Action: Leak Discovery

LUST REG 4:

Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: 900120389
Status: Case Closed
Substance: Diesel
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Soil
Abatement Method Used at the Site: Not reported
Global ID: T0603700533
W Global ID: W0605100649
Staff: UNK
Local Agency: 19050
Cross Street: GRAND
Enforcement Type: Not reported
Date Leak Discovered: 10/9/1986
Date Leak First Reported: 11/10/1987
Date Leak Record Entered: 5/11/1988
Date Confirmation Began: Not reported
Date Leak Stopped: Not reported
Date Case Last Changed on Database: 9/6/1990
Date the Case was Closed: 9/6/1990
How Leak Discovered: Inventory Control
How Leak Stopped: Not reported
Cause of Leak: Not reported
Leak Source: Piping
Operator: SARACCO, STEVE
Water System: DAVE GRIFFITH L A D W P
Well Name: Not reported
Approx. Dist To Production Well (ft): 1525.2275374567153284021524833
Source of Cleanup Funding: Piping
Preliminary Site Assessment Workplan Submitted: Not reported
Preliminary Site Assessment Began: Not reported
Pollution Characterization Began: 11/10/1987
Remediation Plan Submitted: Not reported
Remedial Action Underway: Not reported
Post Remedial Action Monitoring Began: Not reported
Enforcement Action Date: Not reported
Historical Max MTBE Date: Not reported
Hist Max MTBE Conc in Groundwater: Not reported
Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: L.A. COUNTY HALL OF ADMINIST.
RP Address: 500 WEST TEMPLE AVE, LOS ANGELES, CA 90012
Program: LUST
Lat/Long: 34.0573048 / -1
Local Agency Staff: PEJ

LA CO HALL OF ADMINIST. (Continued) **S102432399**

Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	2600649-001GEN
Summary:	Not reported

CG1116 **East** **< 1/8** **0.106 mi.** **562 ft.**

LA UNI SCH DIST, 75TH ST ELEME
142 W 7TH ST
LOS ANGELES, CA 90003

EMI **S106834224** **N/A**

Site 6 of 6 in cluster CG

Relative: Higher

Actual: 256 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	72777
Air District Name:	SC
SIC Code:	8211
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DD1117 **NE** **< 1/8** **0.107 mi.** **565 ft.**

COUNTY LOS ANGELES ISD
222 N HILLS ST
LOS ANGELES, CA 90012

HAZNET **S106085353** **N/A**

Site 4 of 4 in cluster DD

Relative: Higher

Actual: 338 ft.

HAZNET:

Year:	2002
Gepaid:	CAC002412287
Contact:	DIANNA DELEON
Telephone:	3232673138
Mailing Name:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900620000
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Polychlorinated biphenyls and material containing PCBs
Disposal Method:	Recycler
Tons:	0.89
Facility County:	Not reported

DE1118	**CIVIC PARK**	**NPDES**	**S111079830**
NE	**200 N GRAND AVE**	**LOS ANGELES CO. HMS**	**N/A**
< 1/8	**LOS ANGELES, CA 90012**	**HAZNET**	
0.107 mi.			
567 ft.	**Site 1 of 4 in cluster DE**		

Relative: **Higher**

Actual: **388 ft.**

NPDES:

Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	4
Regulatory Measure Id:	402296
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C357613
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/17/2010
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	County of Los Angeles
Discharge Address:	500 West Temple Street Rm 754
Discharge City:	Los Angeles
Discharge State:	California
Discharge Zip:	90012

LOS ANGELES CO. HMS:

Region:	LA
Facility Id:	033002-054555
Facility Type:	Not reported
Facility Status:	OPEN
Area:	2F
Permit Number:	Not reported
Permit Status:	Not reported

HAZNET:

Year:	2010
Gepaid:	CAC002657337
Contact:	ERIKA HUSBY
Telephone:	4258810623
Mailing Name:	Not reported
Mailing Address:	35131 SE CENTER ST
Mailing City,St,Zip:	SNOQUALMIE, WA 98065
Gen County:	Not reported
TSD EPA ID:	AZC950823111
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	12
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002657337
Contact:	ERIKA HUSBY
Telephone:	4258810623
Mailing Name:	Not reported

CIVIC PARK (Continued) **S111079830**

Mailing Address:	35131 SE CENTER ST
Mailing City,St,Zip:	SNOQUALMIE, WA 98065
Gen County:	Not reported
TSD EPA ID:	CAD009007626
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.8
Facility County:	Los Angeles

CJ1119 **SE** **< 1/8** **0.108 mi.** **569 ft.**	**PHILLIPS 1 HOUR PHOTO** **110 E 9TH STREET** **LOS ANGELES, CA 90079** **Site 7 of 19 in cluster CJ**	**RCRA-NonGen** **HAZNET**	**1000289509** **CAD982466377**

Relative: **Lower**

Actual: **245 ft.**

RCRA-NonGen:

Date form received by agency:	06/26/1992
Facility name:	PHILLIPS 1 HOUR PHOTO
Facility address:	110 E 9TH STREET LOS ANGELES, CA 90079
EPA ID:	CAD982466377
Mailing address:	E 9TH STREET LOS ANGELES, CA 90079
Contact:	ENVIRONMENTAL MANAGER
Contact address:	110 E 9TH STREET LOS ANGELES, CA 90079
Contact country:	US
Contact telephone:	(213) 627-9805
Contact email:	Not reported
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	PHILLIP KIM
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

PHILLIPS 1 HOUR PHOTO (Continued) **1000289509**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

HAZNET:

Year:	1998
Gepaid:	CAD981629934
Contact:	PHILIP KIM
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE B265
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1667
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAD981629934
Contact:	PHILIP KIM
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE B265
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAD108040858
TSD County:	Los Angeles
Waste Category:	Metal sludge (Alkaline solution (pH >= 12.5) with metals)
Disposal Method:	Recycler
Tons:	.0600
Facility County:	Los Angeles

Year:	1997
Gepaid:	CAD981629934
Contact:	PHILIP KIM
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE B265
Mailing City,St,Zip:	LOS ANGELES, CA 900790000

PHILLIPS 1 HOUR PHOTO (Continued) **1000289509**

Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .3125
Facility County: Los Angeles

Year: 1996
Gepaid: CAD981629934
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE B265
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .4375
Facility County: Los Angeles

Year: 1995
Gepaid: CAD981629934
Contact: PHILIP KIM
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE B265
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD108040858
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2292
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
4 additional CA_HAZNET: record(s) in the EDR Site Report.

CJ1120 **APPAREL NEWS GROUP** **HAZNET** **S103622497**
SE **110 EAST 9TH ST #A-777** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 8 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HAZNET:
Year: 1995
Gepaid: CAL000071814
Contact: MARTIN WERNICKE
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE A777
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAT000613976
TSD County: Orange

APPAREL NEWS GROUP (Continued) **S103622497**

Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Transfer Station
Tons: .1668
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000071814
Contact: MARTIN WERNICKE
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE A777
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD982524613
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2085
Facility County: Los Angeles

Year: 1994
Gepaid: CAL000071814
Contact: MARTIN WERNICKE
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE A777
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD982524613
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .8089
Facility County: Los Angeles

Year: 1993
Gepaid: CAL000071814
Contact: MARTIN WERNICKE
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE A777
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD982524613
TSD County: Orange
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .3961
Facility County: Los Angeles

CJ1121 **SE** **< 1/8** **0.108 mi.** **569 ft.**	**110 E 9TH ST** **LOS ANGELES, CA** **Site 9 of 19 in cluster CJ**	**CHMIRS**	**S100278873** **N/A**

Relative:
Lower

Actual:
245 ft.

CHMIRS:

OES Incident Number:	8801924
OES notification:	Not reported
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	21-JUN-88
Date Completed:	**21-JUN-88**
Property Use:	500
Agency Id Number:	19105
Agency Incident Number:	284
Time Notified:	1236
Time Completed:	1430
Surrounding Area:	500
Estimated Temperature:	80
Property Management:	P
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	N
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	1
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	ALVIN K BARNHART, AB7044 FS4-B
Report Date:	21-JUN-88
Comments:	Y
Facility Telephone:	213 485-7480
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Not reported
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	88-92
Agency:	Not reported
Incident Date:	Not reported
Admin Agency:	Not reported
Amount:	Not reported

(Continued) **S100278873**

Contained:	Not reported
Site Type:	Not reported
E Date:	Not reported
Substance:	Not reported
Quantity Released:	Not reported
BBLS:	Not reported
Cups:	Not reported
CUFT:	Not reported
Gallons:	Not reported
Grams:	Not reported
Pounds:	Not reported
Liters:	Not reported
Ounces:	Not reported
Pints:	Not reported
Quarts:	Not reported
Sheen:	Not reported
Tons:	Not reported
Unknown:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
Description:	Not reported

CJ1122
SE
< 1/8
0.108 mi.
569 ft.

110 E 9TH ST
LOS ANGELES, CA

Site 10 of 19 in cluster CJ

ERNS **8872997**
N/A

Relative:
Lower

Actual:
245 ft.

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

CJ1123
SE
< 1/8
0.108 mi.
569 ft.

CHIROPRACTIC CARE CENTER
110 E 9TH ST STE 311
LOS ANGELES, CA 90079

Site 11 of 19 in cluster CJ

HAZNET **S103956240**
N/A

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000181287
Contact:	DR JORGE CHAPARRO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE 311
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAL000121946
TSD County:	Marin
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.0175
Facility County:	Los Angeles

CJ1124 **FREDERICK ATKINS CALIFORNIA** **HAZNET** **S103965086**
SE **110 EAST 9TH STREET, #A529** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 12 of 19 in cluster CJ**

Relative: **Lower**

Actual: **245 ft.**

HAZNET:

Year:	1997
Gepaid:	CAL000076034
Contact:	CALIFORNIA MART
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A529
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.1876
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAL000076034
Contact:	CALIFORNIA MART
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A529
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.0667
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAL000076034
Contact:	CALIFORNIA MART
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A529
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.0667
Facility County:	Los Angeles

CJ1125 **MNM PUBLISHING CORP** **HAZNET** **S103977969**
SE **110 EAST 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 13 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	2000
Gepaid:	CAL000156948
Contact:	MARTIN WERNICKE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A777
Mailing City,St,Zip:	LOS ANGELES, CA 900791777
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.1251
Facility County:	Los Angeles

Year:	2000
Gepaid:	CAL000156948
Contact:	MARTIN WERNICKE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A777
Mailing City,St,Zip:	LOS ANGELES, CA 900791777
Gen County:	Los Angeles
TSD EPA ID:	CAD093459485
TSD County:	Fresno
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.1251
Facility County:	Los Angeles

Year:	1999
Gepaid:	CAL000156948
Contact:	MARTIN WERNICKE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A777
Mailing City,St,Zip:	LOS ANGELES, CA 900791777
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	0.8757
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000156948
Contact:	MARTIN WERNICKE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A777
Mailing City,St,Zip:	LOS ANGELES, CA 900791777

MNM PUBLISHING CORP (Continued) **S103977969**

Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.7089
Facility County:	Los Angeles
Year:	1997
Gepaid:	CAL000156948
Contact:	MARTIN WERNICKE
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A777
Mailing City,St,Zip:	LOS ANGELES, CA 900791777
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.8757
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

CJ1126 **CAROUSEL PRINTERS INC** **HAZNET** **S103954988**
SE **110 E NINTH ST,# B-249** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 14 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	1998
Gepaid:	CAL000098020
Contact:	JERRY L SCHULTZ
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE B249
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	.2293
Facility County:	Los Angeles
Year:	1996
Gepaid:	CAL000098020
Contact:	JERRY L SCHULTZ
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE B249
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAD981402522
TSD County:	Kern

CAROUSEL PRINTERS INC (Continued) **S103954988**

Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2293
Facility County: Los Angeles

Year: 1996
Gepaid: CAL000098020
Contact: JERRY L SCHULTZ
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE B249
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Not reported
Tons: .2293
Facility County: Los Angeles

Year: 1995
Gepaid: CAL000098020
Contact: JERRY L SCHULTZ
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE B249
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .1668
Facility County: Los Angeles

Year: 1994
Gepaid: CAL000098020
Contact: JERRY L SCHULTZ
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE B249
Mailing City,St,Zip: LOS ANGELES, CA 900790000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Kern
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: .2293
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
additional CA_HAZNET: detail in the EDR Site Report.

CJ1127 **JAMESON CALIFORNIA MARKET LLC** **HAZNET** **S110371863**
SE **110 E 9TH ST STE A727** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 15 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	2009
Gepaid:	CAC002646880
Contact:	CHRIS WILLETT
Telephone:	2136303675
Mailing Name:	Not reported
Mailing Address:	110 E 9TH ST STE A727
Mailing City,St,Zip:	LOS ANGELES, CA 900791727
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	48
Facility County:	Los Angeles

CJ1128 **CALIFORIA MART** **FINDS** **1006824491**
SE **110 E 9TH ST** **EMI** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 16 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

FINDS:

Registry ID: 110013830827

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

EMI:

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	11642
Air District Name:	SC
SIC Code:	5699
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CALIFORIA MART (Continued) **1006824491**

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	11642
Air District Name:	SC
SIC Code:	5699
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	11642
Air District Name:	SC
SIC Code:	5699
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	11642
Air District Name:	SC
SIC Code:	5699
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	11642
Air District Name:	SC
SIC Code:	5699

CALIFORIA MART (Continued) **1006824491**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CJ1129
SE
< 1/8
0.108 mi.
569 ft.

PHILIPS 1 HOUR PHOTO
110 E 9TH ST SUITE B-265
LOS ANGELES, CA 90079

RCRA-SQG **1000289508**
FINDS **CAD981629934**

Site 17 of 19 in cluster CJ

Relative:
Lower

Actual:
245 ft.

RCRA-SQG:

Date form received by agency:	06/26/1992
Facility name:	PHILIPS 1 HOUR PHOTO
Facility address:	110 E 9TH ST SUITE B-265 CALIFORNIA MART LOS ANGELES, CA 90079
EPA ID:	CAD981629934
Mailing address:	E 9TH ST SUITE B-265 CALIFORNIA MART LOS ANGELES, CA 90079
Contact:	PHILIP KIM
Contact address:	110 E 9TH ST SUITE B-265 CALIFORNIA MART LOS ANGELES, CA 90079
Contact country:	US
Contact telephone:	(213) 627-9803
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	PHILIP KIM
Owner/operator address:	110 E 9TH ST STE B 265 CAL MRT LOS ANGELES, CA 90079
Owner/operator country:	Not reported
Owner/operator telephone:	(213) 627-9803
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212

PHILIPS 1 HOUR PHOTO (Continued) **1000289508**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002730457

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

CJ1130 **DR J KHORSANDI** **HAZNET** **S108205325**
SE **110 E 9TH ST STE B225** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.108 mi.
569 ft. **Site 18 of 19 in cluster CJ**

Relative:
Lower

Actual:
245 ft.

HAZNET:
Year: 2005
Gepaid: CAC002594883
Contact: EUGENE KIM/MGR
Telephone: 2136303673
Mailing Name: Not reported
Mailing Address: 110 E 9TH ST STE A727
Mailing City,St,Zip: LOS ANGELES, CA 90079
Gen County: Los Angeles
TSD EPA ID: AZC950823111
TSD County: 99
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 0.02
Facility County: Not reported

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

DC1131 **JOHNSON JOHNSON** **EDR Historical Cleaners** **1009187293**
North **610 S FIGUEROA ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.109 mi.
574 ft. **Site 3 of 4 in cluster DC**

Relative: Higher
Actual: 298 ft.

EDR Historical Cleaners:
Name: JOHNSON JOHNSON
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

1132 **DISTRIBUTING STATION 9** **HIST UST** **U001560608**
WNW **926 FRANCISCO ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.109 mi.
578 ft.

Relative: Lower
Actual: 251 ft.

HIST UST:
Region: STATE
Facility ID: 00000064820
Facility Type: Other
Other Type: WATER/ELECTRIC UTILI
Total Tanks: 0001
Contact Name: D.K. MCKAY
Telephone: 2134816611
Owner Name: DEPT. OF WATER AND POWER
Owner Address: 111 N. HOPE STREET
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: 0071/MAIN
Year Installed: 1956
Tank Capacity: 00002865
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: Not reported
Leak Detection: None

DF1133 **YEMEN M H** **EDR Historical Cleaners** **1009187896**
NNE **617 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.110 mi.
582 ft. **Site 1 of 7 in cluster DF**

Relative: Higher
Actual: 274 ft.

EDR Historical Cleaners:
Name: YEMEN M H
Year: 1924
Type: CLOTHES CLEANERS PRESSERS AND DYERS

1134 **CALIFORNIA MART/CJVS** **HAZNET** **S103954309**
SSE **127 EAST OLYMPIC BLVD.** **N/A**
< 1/8 **LOS ANGELES, CA 90079**
0.111 mi.
588 ft.

Relative:
Lower

Actual:
241 ft.

HAZNET:

Year:	1995
Gepaid:	CAC001208376
Contact:	CORPORATION
Telephone:	2136303600
Mailing Name:	Not reported
Mailing Address:	110 EAST 9TH ST.
Mailing City,St,Zip:	LOS ANGELES, CA 900790000
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	6.7424
Facility County:	Los Angeles

CJ1135 **GERTZMAN SAML** **EDR Historical Cleaners** **1009189731**
SE **111 E 9TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.115 mi.
605 ft. **Site 19 of 19 in cluster CJ**

Relative:
Lower

Actual:
244 ft.

EDR Historical Cleaners:

Name:	GETZMAN SAML
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	GERTZMAN SAML
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS
Name:	GERTZMAN SAML
Year:	1937
Type:	CLOTHES PRESSERS AND CLEANERS

CM1136 **CHMIRS** **S105647946**
WNW **916 SOUTH FRANCISCO STREET** **N/A**
< 1/8 **LOS ANGELES, CA**
0.115 mi.
606 ft. **Site 3 of 3 in cluster CM**

Relative:
Lower

Actual:
251 ft.

CHMIRS:

OES Incident Number:	97-5107
OES notification:	12/24/199704:28:23 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported

(Continued) **S105647946**

Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1997
Agency:	LA City Fire
Incident Date:	12/20/199712:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Oil Field
E Date:	Not reported
Substance:	Bleach
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	1
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0

(Continued) **S105647946**

Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Resident mixed bleach, ammonia and hot water at hospice. Several members complained of respiratory difficulty.

DG1137 **CAPITAL & COUNTIES USA,INC** **FINDS** **1011908126**
North **800 WEST 6TH ST SUITE 880** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.116 mi.
614 ft. **Site 1 of 3 in cluster DG**

Relative:
Higher

Actual:
288 ft.

FINDS:

Registry ID: 110037253441

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

DG1138 **PACIFIC FINANCIAL CENTER** **HAZNET** **S103672658**
North **800 W 6TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.116 mi.
614 ft. **Site 2 of 3 in cluster DG**

Relative:
Higher

Actual:
288 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002653805
Contact:	NATHAN UNG
Telephone:	2136830500
Mailing Name:	Not reported
Mailing Address:	800 W 6TH ST 6TH FL
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Not reported
TSD EPA ID:	AZC950823111
TSD County:	Not reported
Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.4
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002653805
Contact:	NATHAN UNG

PACIFIC FINANCIAL CENTER (Continued) **S103672658**

Telephone: 2136830500
Mailing Name: Not reported
Mailing Address: 800 W 6TH ST 6TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.8
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002653805
Contact: NATHAN UNG
Telephone: 2136830500
Mailing Name: Not reported
Mailing Address: 800 W 6TH ST 6TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 1.2
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002653805
Contact: NATHAN UNG
Telephone: 2136830500
Mailing Name: Not reported
Mailing Address: 800 W 6TH ST 6TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

Year: 2010
Gepaid: CAC002653805
Contact: NATHAN UNG
Telephone: 2136830500
Mailing Name: Not reported
Mailing Address: 800 W 6TH ST 6TH FL
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Not reported
TSD EPA ID: AZC950823111
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To

PACIFIC FINANCIAL CENTER (Continued) **S103672658**

Include On-Site Treatment And/Or Stabilization)
Tons: 0.4
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
16 additional CA_HAZNET: record(s) in the EDR Site Report.

DG1139 **REAL PROPERTY WEST INC, PAC FI** **EMI** **S106838081**
North **800 W. 6TH ST.** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.116 mi.
614 ft. **Site 3 of 3 in cluster DG**

Relative:
Higher

Actual:
288 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	71863
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DA1140 **LAMAS MAX** **EDR Historical Cleaners** **1009185752**
ESE **809 S MAIN ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.117 mi.
616 ft. **Site 7 of 7 in cluster DA**

Relative:
Lower

Actual:
249 ft.

EDR Historical Cleaners:

Name:	LAMAS MAX
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS

CT1141 **LA CITY, TRANS DEPT** **EMI** **S106834084**
NE **200 N. SPRING ST., RM. 1200 C.** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.119 mi.
629 ft. **Site 2 of 8 in cluster CT**

Relative:
Higher

Actual:
310 ft.

EMI:

Year:	1987
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	6512

LA CITY, TRANS DEPT (Continued) **S106834084**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	4
Reactive Organic Gases Tons/Yr:	4
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DF1142 **DR HUBBS** **HAZNET** **S103961402**
NNE **609 S GRAND AVE, #609** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.119 mi.
630 ft. **Site 2 of 7 in cluster DF**

Relative:
Higher

Actual:
274 ft.

HAZNET:

Year:	2005
Gepaid:	CAL000089018
Contact:	--
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE STE 609
Mailing City,St,Zip:	LOS ANGELES, CA 900173849
Gen County:	Los Angeles
TSD EPA ID:	CAD980884183
TSD County:	Sacramento
Waste Category:	Unspecified solvent mixture
Disposal Method:	Transfer Station
Tons:	0.04
Facility County:	Not reported
Year:	2001
Gepaid:	CAL000089018
Contact:	--
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE STE 609
Mailing City,St,Zip:	LOS ANGELES, CA 900173849
Gen County:	Los Angeles

DR HUBBS (Continued) **S103961402**

TSD EPA ID:	Not reported
TSD County:	Sacramento
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Disposal, Other
Tons:	0.02
Facility County:	Not reported

Year:	2001
Gepaid:	CAL000089018
Contact:	--
Telephone:	--
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE STE 609
Mailing City,St,Zip:	LOS ANGELES, CA 900173849
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Not reported
Tons:	0.02
Facility County:	Not reported

Year:	1999
Gepaid:	CAL000089018
Contact:	DR HUBBS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE STE 609
Mailing City,St,Zip:	LOS ANGELES, CA 900173849
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Transfer Station
Tons:	0.0417
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAL000089018
Contact:	DR HUBBS
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE STE 609
Mailing City,St,Zip:	LOS ANGELES, CA 900173849
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Transfer Station
Tons:	.0208
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

DF1143 **NNE** **< 1/8** **0.119 mi.** **630 ft.**

GRAND PACIFIC LOFTS INC
609 S GRAND AVE
LOS ANGELES, CA 90017

Site 3 of 7 in cluster DF

HAZNET **S108208120** **N/A**

Relative: **Higher**

Actual: **274 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002596132
Contact:	ERIC SHOMOS/GENERAL CONTRACTOR
Telephone:	2133003801
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Not reported
Tons:	0.12
Facility County:	Not reported

DF1144 **NNE** **< 1/8** **0.119 mi.** **630 ft.**

ISSAC SHOMOS
609 S GRAND AVE
LOS ANGELES, CA 90017

Site 4 of 7 in cluster DF

HAZNET **S108209679** **N/A**

Relative: **Higher**

Actual: **274 ft.**

HAZNET:

Year:	2005
Gepaid:	CAC002587327
Contact:	ISSAC SHOMOS
Telephone:	2133005001
Mailing Name:	Not reported
Mailing Address:	609 S GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	6.74
Facility County:	Not reported

DF1145 **NNE** **< 1/8** **0.119 mi.** **630 ft.**

VISTA REALTY
609 S GRAND AVE
LOS ANGELES, CA 90017

Site 5 of 7 in cluster DF

HAZNET **S104567784** **N/A**

Relative: **Higher**

Actual: **274 ft.**

HAZNET:

Year:	2002
Gepaid:	CAC002557452
Contact:	CURT SCHROEDER
Telephone:	2138926306
Mailing Name:	Not reported
Mailing Address:	517 FOOTHILL
Mailing City,St,Zip:	BEVERLY HILLS, CA 90210

VISTA REALTY (Continued) **S104567784**

Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 15.67
Facility County: Not reported

Year: 2002
Gepaid: CAL000261992
Contact: ROB MCRITCHIE
Telephone: 2138526306
Mailing Name: Not reported
Mailing Address: 700 S FLOWER ST STE 1100
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Laboratory waste chemicals
Disposal Method: Recycler
Tons: 0.07
Facility County: Not reported

Year: 2002
Gepaid: CAL000261992
Contact: ROB MCRITCHIE
Telephone: 2138526306
Mailing Name: Not reported
Mailing Address: 700 S FLOWER ST STE 1100
Mailing City,St,Zip: LOS ANGELES, CA 90017
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Laboratory waste chemicals
Disposal Method: Transfer Station
Tons: 0.00
Facility County: Not reported

Year: 1999
Gepaid: CAC001432592
Contact: VISTA REALTY
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 609 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900170000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.417
Facility County: Los Angeles

CH1146 **SSW** **< 1/8** **0.120 mi.** **633 ft.**

SOMMERS L O
211 W 12TH ST
LOS ANGELES, CA

EDR Historical Auto Stations — **1009079998** **N/A**

Site 4 of 5 in cluster CH

Relative: Lower
Actual: 242 ft.

EDR Historical Auto Stations:

Name:	SOMMERS L O
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS
Name:	SOMMERS L O
Year:	1933
Type:	AUTOMOBILE REPAIRING
Name:	SOMMERS L O
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	HUNT A F
Year:	1942
Type:	AUTOMOBILE REPAIRING
Name:	SOMMERS L O
Year:	1942
Type:	AUTOMOBILE REPAIRING

CH1147 **SSW** **< 1/8** **0.120 mi.** **633 ft.**

MORWAY STEPH
217 W 12TH ST
LOS ANGELES, CA

EDR Historical Auto Stations — **1009079434** **N/A**

Site 5 of 5 in cluster CH

Relative: Lower
Actual: 243 ft.

EDR Historical Auto Stations:

Name:	MORWAY STEPH
Year:	1933
Type:	AUTOMOBILE REPAIRING

CZ1148 **NNW** **< 1/8** **0.120 mi.** **633 ft.**

BERNARD SICHEL RELIANCE GROUP
1000 WILSHIRE BLVD
LOS ANGELES, CA 90017

CA FID UST **SWEEPS UST** — **S101586509** **N/A**

Site 21 of 23 in cluster CZ

Relative: Higher
Actual: 302 ft.

CA FID UST:

Facility ID:	19052891
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	1000 WILSHIRE BLVD
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900170000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported

BERNARD SICHEL RELIANCE GROUP (Continued) **S101586509**

NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	Not reported
Comp Number:	6555
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CZ1149 **LEHMAN DAVIS** — **EDR Historical Auto Stations** — **1009083844**
NNW **1000 WILSHIRE BLVD** — **N/A**
< 1/8 **LOS ANGELES, CA**
0.120 mi.
633 ft. **Site 22 of 23 in cluster CZ**

Relative:
Higher

Actual:
302 ft.

EDR Historical Auto Stations:

Name:	LEHMAN DAVIS
Year:	1937
Type:	GASOLINE AND OIL SERVICE STATIONS
Name:	SPITZ ISADORE
Year:	1942
Type:	GASOLINE AND OIL SERVICE STATIONS

CZ1150 **SUMITOMO LIFE REALTY (N.Y.), I** — **EMI** — **S106840214**
NNW **1000 WILSHIRE BLVD, SUITE 550** — **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.120 mi.
633 ft. **Site 23 of 23 in cluster CZ**

Relative:
Higher

Actual:
302 ft.

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	72986
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

SUMITOMO LIFE REALTY (N.Y.), I (Continued) **S106840214**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	72986
Air District Name:	SC
SIC Code:	6552
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

DH1151 **TIMPE A M** **EDR Historical Cleaners** **1009191558**
SSW **225 W 12TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.120 mi.
634 ft. **Site 1 of 3 in cluster DH**

Relative:
Lower

Actual:
243 ft.

EDR Historical Cleaners:

Name:	TIMPE A M
Year:	1937
Type:	CLEANERS GARMENTS CURTAINS AND DRAPERIES

DH1152 **CAIN EARL** **EDR Historical Auto Stations** **1009079484**
SSW **225 W 12TH ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.120 mi.
634 ft. **Site 2 of 3 in cluster DH**

Relative:
Lower

Actual:
243 ft.

EDR Historical Auto Stations:

Name:	CAIN EARL
Year:	1933
Type:	AUTOMOBILE REPAIRING

CT1153 **NE** **< 1/8** **0.120 mi.** **634 ft.**	**PLANNING DEPT LA CITY OF** **200 N SPRING ST ROOM 1021** **LOS ANGELES, CA 90012** **Site 3 of 8 in cluster CT**	**RCRA-SQG** **FINDS** **HAZNET**	**1000317626** **CAD982519480**

Relative:
Higher

Actual:
310 ft.

RCRA-SQG:

Date form received by agency:	03/30/1989
Facility name:	PLANNING DEPT LA CITY OF
Facility address:	200 N SPRING ST ROOM 1021 LOS ANGELES, CA 90012
EPA ID:	CAD982519480
Mailing address:	200 N SPRING ST ROOM 703 LOS ANGELES, CA 90012
Contact:	ENVIRONMENTAL MANAGER
Contact address:	200 N SPRING ST ROOM 1021 LOS ANGELES, CA 90012
Contact country:	US
Contact telephone:	(213) 485-3734
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CITY OF LOS ANGELES
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Municipal
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Municipal
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No

PLANNING DEPT LA CITY OF (Continued) **1000317626**

Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110002840052

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

HAZNET:

Year:	1996
Gepaid:	CAD982519480
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	200 N SPRING ST ROOM 703
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT000613976
TSD County:	Orange
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Transfer Station
Tons:	.0625
Facility County:	Los Angeles

CT1154	**LA CITY, TRANS DEPT**	**FINDS**	**1006825668**
NE	**200 N SPRING ST.**	**EMI**	**N/A**
< 1/8	**LOS ANGELES, CA 90012**		
0.120 mi.			
634 ft.	**Site 4 of 8 in cluster CT**		

Relative: **Higher**

Actual: **310 ft.**

FINDS:

Registry ID: 110013846990

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

EMI:

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621

LA CITY, TRANS DEPT (Continued) **1006825668**

Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0
Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	13298
Air District Name:	SC
SIC Code:	9621
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CT1155		**ERNS**	**92275504**
NE	**200 N. SPRING ST**		**N/A**
< 1/8	**LOS ANGELES, CA 90012**		
0.120 mi.			
634 ft.	**Site 5 of 8 in cluster CT**		

Relative:
Higher

Click this hyperlink while viewing on your computer to access additional ERNS detail in the EDR Site Report.

Actual:
310 ft.

CT1156 **CITY HALL** **RCRA-LQG** **1007199481**
NE **200 NORTH SPRING STREET** **CAD981575954**
< 1/8 **LOS ANGELES, CA 90012**
0.120 mi.
634 ft. **Site 6 of 8 in cluster CT**

Relative: **Higher**

Actual: **310 ft.**

RCRA-LQG:

Date form received by agency:	03/29/2002
Facility name:	CITY HALL
Facility address:	200 NORTH SPRING STREET LOS ANGELES, CA 90012
EPA ID:	CAD981575954
Mailing address:	419 SOUTH SPRING STREET 12TH FLOOR LOS ANGELES, CA 90013
Contact:	SHARI H KUROKI
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	(213) 473-7748
Contact email:	SKUROKI@GSD.LACITY.ORG
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

CT1157 **CITY HALL** **FINDS** **1014674470**
NE **200 NORTH SPRING STREET** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.120 mi.
634 ft. **Site 7 of 8 in cluster CT**

Relative:
Higher

Actual:
310 ft.

FINDS:

Registry ID: 110041974502

Environmental Interest/Information System
HAZARDOUS WASTE BIENNIAL REPORTER

CT1158 **LOS ANGELES CITY HALL** **CA FID UST** **1000102065**
NE **200 N SPRING ST** **UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012** **HIST UST**
0.120 mi. **SWEEPS UST**
634 ft. **Site 8 of 8 in cluster CT** **HAZNET**
EMI

Relative:
Higher

Actual:
310 ft.

CA FID UST:

Facility ID:	19018780
Regulated By:	UTNKA
Regulated ID:	00047106
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2134852357
Mail To:	Not reported
Mailing Address:	200 N MAIN STREET-ROOM
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

Facility ID:	19022020
Regulated By:	UTNKA
Regulated ID:	00047104
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2134852357
Mail To:	Not reported
Mailing Address:	200 N MAIN STREET-ROOM
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

UST:

LOS ANGELES CITY HALL (Continued) **1000102065**

Facility ID: 24334
Latitude: 34.05401
Longitude: -118.24344

HIST UST:

Region: STATE
Facility ID: 00000047104
Facility Type: Other
Other Type: YARD
Total Tanks: 0004
Contact Name: DAVE FERM
Telephone: 2134852357
Owner Name: LOS ANGELES CITY
Owner Address: 200 N. MAIN ST
Owner City,St,Zip: LOS ANGELES, CA 90012

Tank Num: 001
Container Num: #1
Year Installed: 1974
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: 1/4" inches
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: #2
Year Installed: 1974
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: 1/4" inches
Leak Detection: Stock Inventor

Tank Num: 003
Container Num: #3
Year Installed: 1984
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: Not reported
Tank Construction: 1/4 inches
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: #4
Year Installed: 1928
Tank Capacity: 00000000
Tank Used for: WASTE
Type of Fuel: Not reported
Tank Construction: 6 inches
Leak Detection: Not reported

SWEEPS UST:

Status: A
Comp Number: 2455
Number: 4

LOS ANGELES CITY HALL (Continued) **1000102065**

Board Of Equalization: Not reported
Ref Date: 09-21-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002455-000001
Actv Date: 02-10-93
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: 4

Status: A
Comp Number: 2455
Number: 4
Board Of Equalization: Not reported
Ref Date: 09-21-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002455-000002
Actv Date: 02-10-93
Capacity: 10000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 2455
Number: 4
Board Of Equalization: Not reported
Ref Date: 09-21-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported
Swrcb Tank Id: 19-050-002455-000003
Actv Date: 02-10-93
Capacity: 10000
Tank Use: CHEMICAL
Stg: P
Content: UNKNOWN
Number Of Tanks: Not reported

Status: A
Comp Number: 2455
Number: 4
Board Of Equalization: Not reported
Ref Date: 09-21-93
Act Date: 03-18-94
Created Date: 02-29-88
Tank Status: A
Owner Tank Id: Not reported

LOS ANGELES CITY HALL (Continued) **1000102065**

Swrcb Tank Id:	19-050-002455-000004
Actv Date:	02-10-93
Capacity:	10
Tank Use:	CHEMICAL
Stg:	P
Content:	UNKNOWN
Number Of Tanks:	Not reported

HAZNET:

Year:	2006
Gepaid:	CAD981575954
Contact:	L MOORE CITY OF LA DEPT OF GEN
Telephone:	2139783798
Mailing Name:	Not reported
Mailing Address:	111 E 1ST ST ROOM 600
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Tank bottom waste
Disposal Method:	Recycler
Tons:	0.2
Facility County:	Los Angeles

Year:	2005
Gepaid:	CAD981575954
Contact:	L MOORE CITY OF LA DEPT OF GEN
Telephone:	2139783798
Mailing Name:	Not reported
Mailing Address:	111 E 1ST ST ROOM 600
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD980675276
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Treatment, Tank
Tons:	0.2
Facility County:	Not reported

Year:	2004
Gepaid:	CAD981575954
Contact:	L MOORE CITY OF LA DEPT OF GEN
Telephone:	2139783798
Mailing Name:	Not reported
Mailing Address:	111 E 1ST ST ROOM 600
Mailing City,St,Zip:	LOS ANGELES, CA 900120000
Gen County:	Los Angeles
TSD EPA ID:	CAD980675276
TSD County:	Kern
Waste Category:	Other inorganic solid waste
Disposal Method:	Treatment, Tank
Tons:	0.2
Facility County:	Not reported

Year:	2003
Gepaid:	CAD981575954
Contact:	SHARI KUROKI MGMT ANALYST

LOS ANGELES CITY HALL (Continued) **1000102065**

Telephone: 2139783798
Mailing Name: Not reported
Mailing Address: 111 E 1ST ST ROOM 600
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.27
Facility County: Los Angeles

Year: 2003
Gepaid: CAD981575954
Contact: SHARI KUROKI MGMT ANALYST
Telephone: 2139783798
Mailing Name: Not reported
Mailing Address: 111 E 1ST ST ROOM 600
Mailing City,St,Zip: LOS ANGELES, CA 900120000
Gen County: Los Angeles
TSD EPA ID: CAD981402522
TSD County: Los Angeles
Waste Category: Photochemicals/photoprocessing waste
Disposal Method: Recycler
Tons: 0.12
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
74 additional CA_HAZNET: record(s) in the EDR Site Report.

EMI:
Year: 1990
County Code: 19
Air Basin: SC
Facility ID: 28201
Air District Name: SC
SIC Code: 9199
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 1
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

Year: 1995
County Code: 19
Air Basin: SC
Facility ID: 28201
Air District Name: SC
SIC Code: 9199
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported

LOS ANGELES CITY HALL (Continued) **1000102065**

Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	4
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers & Smllr Tons/Yr:	0

CO1159
SSW
< 1/8
0.120 mi.
634 ft.

SKLAR ISAAC
159 W 12TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009189552**
N/A

Site 11 of 13 in cluster CO

Relative:
Lower

Actual:
242 ft.

EDR Historical Cleaners:

Name:	SKLAR ISEDORE
Year:	1929
Type:	CLOTHES PRESSERS CLEANERS AND REPAIRERS
Name:	SKLAR ISAAC
Year:	1933
Type:	CLOTHES PRESSERS AND CLEANERS

DI1160
SW
< 1/8
0.120 mi.
635 ft.

WILKINSON J E
315 W 12TH ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009080190**
N/A

Site 1 of 3 in cluster DI

Relative:
Lower

Actual:
243 ft.

EDR Historical Auto Stations:

Name:	WILKINSON J E
Year:	1924
Type:	AUTOMOBILE REPAIRING
Name:	WILKINSON J E
Year:	1929
Type:	AUTOMOBILE REPAIRING AND SERVICE STATIONS
Name:	WILKINSON J E
Year:	1933
Type:	AUTOMOBILE REPAIRING
Name:	WILKINSON J E
Year:	1937
Type:	AUTOMOBILE REPAIRING
Name:	WILKINSON J E
Year:	1942
Type:	AUTOMOBILE REPAIRING

DJ1161 **NE** **< 1/8** **0.120 mi.** **636 ft.**	**SOUTHERN CALIFORNIA GAS COMPANY** **555 WEST 5TH STREET** **LOS ANGELES, CA 90013** **Site 1 of 12 in cluster DJ**	**WDS** **CHMIRS** **HAZNET**	**S103988706** **N/A**

Relative:
Higher

Actual:
284 ft.

CA WDS:

Facility ID: 40 00U000051
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAG990002 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 4
Facility Telephone: 2132445812
Facility Contact: Karen Wong
Agency Name: SOUTHERN CALIFORNIA GAS CO.
Agency Address: Not reported
Agency City,St,Zip: 0
Agency Contact: Not reported
Agency Telephone: Not reported
Agency Type: Private
SIC Code: 4932
SIC Code 2: Not reported
Primary Waste: Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type: Inert/Influent or Solid Wastes that do not contain soluble pollutants or organic wastes and have little adverse impact on water quality. Such wastes could cause turbidity and siltation. Uncontaminated soils, rubble and concrete are examples of this category.
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: No reclamation requirements associated with this facility.
POTW: The facility is not a POTW.
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

CHMIRS:

OES Incident Number: 05-7433
OES notification: 12/25/200511:22:00 AM
OES Date: Not reported
OES Time: Not reported
Incident Date: Not reported
Date Completed: Not reported
Property Use: Not reported

SOUTHERN CALIFORNIA GAS COMPANY (Continued) **S103988706**

Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	NRC
Incident Date:	12/25/200512:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Residence
E Date:	Not reported
Substance:	Natural Gas
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0.000000
Grams:	0
Pounds:	0
Liters:	0

SOUTHERN CALIFORNIA GAS COMPANY (Continued) **S103988706**

Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	POTENTIAL RELEASE: NRC report advises of a potential release of materials from a house line due to a fire.

HAZNET:

Year:	1996
Gepaid:	CAC001142088
Contact:	SOUTHERN CALIF GAS COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	PO BOX 3249
Mailing City,St,Zip:	LOS ANGELES, CA 900511249
Gen County:	Los Angeles
TSD EPA ID:	CAT000625137
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Disposal, Other
Tons:	.0050
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000732944
Contact:	SOUTHERN CALIF GAS COMPANY
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	P O BOX 3249
Mailing City,St,Zip:	LOS ANGELES, CA 900511249
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Transfer Station
Tons:	.3336
Facility County:	Los Angeles

DJ1162 **SOUTHERN CALIFORNIA GAS CO** **RCRA-LQG** **1009216614**
NE **555 W FIFTH ST** **HAZNET** **CAR000170159**
< 1/8 **LOS ANGELES, CA 90013** **HWT**
0.120 mi.
636 ft. **Site 2 of 12 in cluster DJ**

Relative:
Higher

Actual:
284 ft.

RCRA-LQG:

Date form received by agency:	01/06/2006
Facility name:	SOUTHERN CALIFORNIA GAS CO
Facility address:	555 W FIFTH ST LOS ANGELES, CA 90013
EPA ID:	CAR000170159
Contact:	BO ITH
Contact address:	555 W FIFTH ST

SOUTHERN CALIFORNIA GAS CO (Continued) **1009216614**

	LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	562-806-4216
Contact email:	BITH@SEMPRAUTILITIES.COM
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	MAGUIRE PROPERTIES
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1991
Owner/Op end date:	Not reported

Owner/operator name:	MAGUIRE PROPERTIES
Owner/operator address:	333 S GRAND AVE NO 400
	LOS ANGELES, CA 90071
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1991
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

SOUTHERN CALIFORNIA GAS CO (Continued) **1009216614**

Hazardous Waste Summary:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code: D018
Waste name: BENZENE

Violation Status: No violations found

HAZNET:
Year: 2006
Gepaid: CAR000170159
Contact: BO ITH
Telephone: 5628064216
Mailing Name: Not reported
Mailing Address: 555 W FIFTH ST
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAT080013552
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: Recycler
Tons: 2.91
Facility County: Los Angeles

HWT:
Reg Num: 739
Expiration Date: 06/30/2012

DJ1163 **THE GAS COMPANY TOWER** **WDS** **U003780071**
NE **555 W 5TH ST** **UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 3 of 12 in cluster DJ**

Relative:
Higher

Actual:
284 ft.

CA WDS:
Facility ID: Los Angeles River 196400050
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAG994004 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 4
Facility Telephone: 2136228700
Facility Contact: Mike Henenfent
Agency Name: MAGUIRE PARTNERS
Agency Address: Not reported
Agency City,St,Zip: 0
Agency Contact: Not reported
Agency Telephone: Not reported

THE GAS COMPANY TOWER (Continued) **U003780071**

Agency Type:	Private
SIC Code:	154
SIC Code 2:	Not reported
Primary Waste:	Drilling Muds
Primary Waste Type:	Nonhazardous Solid Wastes/Influent or Solid Wastes that contain nonhazardous putrescible and non putrescible solid, semisolid, and liquid wastes (E.G., garbage, trash, refuse, paper, demolition and construction wastes, manure, vegetable or animal solid and semisolid waste).
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	0
Complexity:	Not reported

UST:

Facility ID:	23542
Latitude:	34.04987
Longitude:	-118.25341

DJ1164
NE
< 1/8
0.120 mi.
636 ft.

SOUTHERN CALIFORNIA GAS CO
555 W FIFTH ST (GT)
LOS ANGELES, CA 90013

HAZNET **S109431894**
N/A

Site 4 of 12 in cluster DJ

Relative:
Higher

Actual:
284 ft.

HAZNET:

Year:	2010
Gepaid:	CAR000170159
Contact:	JIM SCRUGGS
Telephone:	8586533104
Mailing Name:	Not reported
Mailing Address:	6875 CONSOLIDATED WAY SD1373
Mailing City,St,Zip:	SAN DIEGO, CA 921212602
Gen County:	Not reported
TSD EPA ID:	CAT000625137
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.225
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000170159
Contact:	JIM SCRUGGS
Telephone:	8586533104
Mailing Name:	Not reported
Mailing Address:	6875 CONSOLIDATED WAY SD 1373
Mailing City,St,Zip:	SAN DIEGO, CA 921212602
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics

SOUTHERN CALIFORNIA GAS CO (Continued) **S109431894**

Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.005
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000170159
Contact:	JIM SCRUGGS
Telephone:	8586533104
Mailing Name:	Not reported
Mailing Address:	6875 CONSOLIDATED WAY SD 1373
Mailing City,St,Zip:	SAN DIEGO, CA 921212602
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.05
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000170159
Contact:	JIM SCRUGGS
Telephone:	8586533104
Mailing Name:	Not reported
Mailing Address:	6875 CONSOLIDATED WAY SD 1373
Mailing City,St,Zip:	SAN DIEGO, CA 921212602
Gen County:	Los Angeles
TSD EPA ID:	CAT000646117
TSD County:	Kings
Waste Category:	Other inorganic solid waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.0425
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAR000170159
Contact:	JIM SCRUGGS
Telephone:	8586533104
Mailing Name:	Not reported
Mailing Address:	6875 CONSOLIDATED WAY SD 1373
Mailing City,St,Zip:	SAN DIEGO, CA 921212602
Gen County:	Los Angeles
TSD EPA ID:	CAD008302903
TSD County:	Los Angeles
Waste Category:	Unspecified alkaline solution
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.005
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

DJ1165 **THE GAS COMPANY TOWER** **FINDS** **1011907804**
NE **555 W 5TH STREET STE700** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 5 of 12 in cluster DJ**

Relative: **Higher**

Actual: **284 ft.**

FINDS:

Registry ID: 110037255608

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

DJ1166 **MAGUIRE PROPERTIES-555 WEST FIFTH, LLC** **HAZNET** **S108213026**
NE **555 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 6 of 12 in cluster DJ**

Relative: **Higher**

Actual: **284 ft.**

HAZNET:

Year:	2008
Gepaid:	CAL000092444
Contact:	MIKE BROOKS, SENIOR OPTNS MGR
Telephone:	2136228700
Mailing Name:	MAGUIRE PARTNERS-555 WEST FIFTH, LL
Mailing Address:	555 WEST 5TH ST STE 750
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1
Facility County:	Los Angeles

Year:	2008
Gepaid:	CAL000092444
Contact:	MIKE BROOKS, SENIOR OPTNS MGR
Telephone:	2136228700
Mailing Name:	MAGUIRE PARTNERS-555 WEST FIFTH, LL
Mailing Address:	555 WEST 5TH ST STE 750
Mailing City,St,Zip:	LOS ANGELES, CA 900130000
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.285
Facility County:	Los Angeles

Year:	2008

MAGUIRE PROPERTIES-555 WEST FIFTH, LLC (Continued) **S108213026**

Gepaid: CAL000092444
Contact: MIKE BROOKS, SENIOR OPTNS MGR
Telephone: 2136228700
Mailing Name: MAGUIRE PARTNERS-555 WEST FIFTH, LL
Mailing Address: 555 WEST 5TH ST STE 750
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.09
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000092444
Contact: MIKE BROOKS, SENIOR OPTNS MGR
Telephone: 2136228700
Mailing Name: MAGUIRE PARTNERS-555 WEST FIFTH, LL
Mailing Address: 555 WEST 5TH ST STE 750
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.35
Facility County: Los Angeles

Year: 2008
Gepaid: CAL000092444
Contact: MIKE BROOKS, SENIOR OPTNS MGR
Telephone: 2136228700
Mailing Name: MAGUIRE PARTNERS-555 WEST FIFTH, LL
Mailing Address: 555 WEST 5TH ST STE 750
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Unspecified aqueous solution
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.06
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

DJ1167	**SOUTHERN CALIFORNIA GAS CO**	**FINDS**	**1008152872**
NE	**555 W. 5TH ST**	**HAZNET**	**N/A**
< 1/8	**LOS ANGELES, CA 90013**		
0.120 mi.			
636 ft.	**Site 7 of 12 in cluster DJ**		

Relative: **Higher**

Actual: **284 ft.**

FINDS:

Registry ID: 110018967313

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

GREENHOUSE GAS REPORTER

HAZNET:

Year: 2003
Gepaid: CAT000625137
Contact: RALPH Y. KOMAI/PRINCIPAL ENVIR SPCI
Telephone: 2132445860
Mailing Name: Not reported
Mailing Address: PO BOX 513249
Mailing City,St,Zip: LOS ANGELES, CA 900511249
Gen County: Los Angeles
TSD EPA ID: CAD044429835
TSD County: Los Angeles
Waste Category: Off-specification, aged or surplus organics
Disposal Method: Not reported
Tons: 0.2
Facility County: Los Angeles

Year: 2003
Gepaid: CA0981422017
Contact: RALPH Y. KOMAI/PRINCIPAL ENVIR SPCI
Telephone: 2132445860
Mailing Name: Not reported
Mailing Address: PO BOX 513249
Mailing City,St,Zip: LOS ANGELES, CA 900511249
Gen County: Not reported
TSD EPA ID: CAT000625137
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Disposal, Other
Tons: 0.45
Facility County: Los Angeles

Year: 2003
Gepaid: CAT000625137

SOUTHERN CALIFORNIA GAS CO (Continued) **1008152872**

Contact:	RALPH Y. KOMAI/PRINCIPAL ENVIR SPCI
Telephone:	2132445860
Mailing Name:	Not reported
Mailing Address:	PO BOX 513249
Mailing City,St,Zip:	LOS ANGELES, CA 900511249
Gen County:	Los Angeles
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Other inorganic solid waste
Disposal Method:	Not reported
Tons:	0.01
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAT000625137
Contact:	RALPH Y. KOMAI/PRINCIPAL ENVIR SPCI
Telephone:	2132445860
Mailing Name:	Not reported
Mailing Address:	PO BOX 513249
Mailing City,St,Zip:	LOS ANGELES, CA 900511249
Gen County:	Los Angeles
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.04
Facility County:	Los Angeles

Year:	2003
Gepaid:	CAT000625137
Contact:	RALPH Y. KOMAI/PRINCIPAL ENVIR SPCI
Telephone:	2132445860
Mailing Name:	Not reported
Mailing Address:	PO BOX 513249
Mailing City,St,Zip:	LOS ANGELES, CA 900511249
Gen County:	Los Angeles
TSD EPA ID:	CAD980887418
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	0.62
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
24 additional CA_HAZNET: record(s) in the EDR Site Report.

DJ1168 **SOUTHERN CALIFORNIA GAS CO** **RCRA-NonGen** **1008402357**
NE **555 W 5TH ST** **CAP000164673**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 8 of 12 in cluster DJ**

Relative:
Higher

Actual:
284 ft.

RCRA-NonGen:

Date form received by agency:	08/12/2005
Facility name:	SOUTHERN CALIFORNIA GAS CO
Facility address:	555 W 5TH ST LOS ANGELES, CA 90013
EPA ID:	CAP000164673

SOUTHERN CALIFORNIA GAS CO (Continued) **1008402357**

Contact:	BO ITH
Contact address:	555 W 5TH ST LOS ANGELES, CA 90013
Contact country:	US
Contact telephone:	562-506-4216
Contact email:	BITH@SEMPRAUTILITIES.COM
EPA Region:	09
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	MAGUIRE PROPERTIES
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/1991
Owner/Op end date:	Not reported

Owner/operator name:	MAGUIRE PROPERTIES
Owner/operator address:	333 S GRAND AVE NO 400 LOS ANGELES, CA 90071
Owner/operator country:	US
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/1991
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT

SOUTHERN CALIFORNIA GAS CO (Continued) **1008402357**

WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

Waste code:	D018
Waste name:	BENZENE
Violation Status:	No violations found

DJ1169 **SOUTHERN CALIFORNIA GAS CENTER** **CA FID UST** **S101586219**
NE **555 W 5TH ST** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90012**
0.120 mi.
636 ft. **Site 9 of 12 in cluster DJ**

Relative:
Higher

Actual:
284 ft.

CA FID UST:

Facility ID:	19041593
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	633 W 5TH ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900120000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	7863
Number:	1
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-16-94
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

DJ1170 **MAGUIRE THOMAS PARTNERS-FIFTH & GRAND** **HAZNET** **S102004104**
NE **555 W 5TH ST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 10 of 12 in cluster DJ**

Relative:
Higher

Actual:
284 ft.

HAZNET:

Year:	2002
Gepaid:	CAL000092444
Contact:	MARGUERITE ANASTASSIOU
Telephone:	2136228700
Mailing Name:	Not reported
Mailing Address:	555 W 5TH ST STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900131084
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Paint sludge
Disposal Method:	Recycler
Tons:	0.56
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000092444
Contact:	MARGUERITE ANASTASSIOU
Telephone:	2136228700
Mailing Name:	Not reported
Mailing Address:	555 W 5TH ST STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900131084
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Not reported
Tons:	0.10
Facility County:	Not reported

Year:	2002
Gepaid:	CAL000092444
Contact:	MARGUERITE ANASTASSIOU
Telephone:	2136228700
Mailing Name:	Not reported
Mailing Address:	555 W 5TH ST STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900131084
Gen County:	Los Angeles
TSD EPA ID:	Not reported
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Disposal, Land Fill
Tons:	0.07
Facility County:	Not reported

Year:	2001
Gepaid:	CAL000092444
Contact:	MARGUERITE ANASTASSIOU
Telephone:	2136228700
Mailing Name:	Not reported
Mailing Address:	555 W 5TH ST STE 700
Mailing City,St,Zip:	LOS ANGELES, CA 900131084

MAGUIRE THOMAS PARTNERS-FIFTH & GRAND (Continued) **S102004104**

Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Not reported
Tons: 0
Facility County: Not reported

Year: 2001
Gepaid: CAL000092444
Contact: MARGUERITE ANASTASSIOU
Telephone: 2136228700
Mailing Name: Not reported
Mailing Address: 555 W 5TH ST STE 700
Mailing City,St,Zip: LOS ANGELES, CA 900131084
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Treatment, Tank
Tons: 0.15
Facility County: Not reported

Click this hyperlink while viewing on your computer to access
34 additional CA_HAZNET: record(s) in the EDR Site Report.

DJ1171 **SOUTHERN CALIFORNIA GAS CO** **WDS** **S105557859**
NE **555 WEST 5TH STREET GT16G3** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.120 mi.
636 ft. **Site 11 of 12 in cluster DJ**

Relative: Higher

Actual: 284 ft.

CA WDS:
Facility ID: 50 00U000052
Facility Type: Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAG990002 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 0
Facility Telephone: 2132445815
Facility Contact: RON GREEN
Agency Name: SOUTHERN CALIFORNIA GAS CO
Agency Address: PO BOX 3429 MAIL LOCATION 17G3
Agency City,St,Zip: LOS ANGELES 900511249
Agency Contact: RON GREEN
Agency Telephone: 2132445815
Agency Type: Private
SIC Code: 0
SIC Code 2: Not reported
Primary Waste: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported

SOUTHERN CALIFORNIA GAS CO (Continued) **S105557859**

POTW:	The facility is not a POTW.
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

DJ1172		**CHMIRS**	**S108403480**
NE	**555 W. 5TH STREET**		**N/A**
< 1/8	**LOS ANGELES, CA**		
0.120 mi.			
636 ft.	**Site 12 of 12 in cluster DJ**		

Relative: Higher

Actual: 284 ft.

CHMIRS:

OES Incident Number:	05-3310
OES notification:	6/2/200505:33:25 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported

(Continued) **S108403480**

Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2005
Agency:	Magure Properties
Incident Date:	5/31/200512:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Other
E Date:	Not reported
Substance:	Diesel
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	25
Grams:	0
Pounds:	0
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	A company taking soil samples damaged a fill line.

1173 **WNW** **< 1/8** **0.120 mi.** **636 ft.**	**LOS ANGELES ARENA COMPANY** **901 OLYMPIC BLVD** **LOS ANGELES, CA 90017**	**HAZNET**	**S104566781** **N/A**

Relative:
Lower

Actual:
245 ft.

HAZNET:

Year:	1999
Gepaid:	CAC001383800
Contact:	DONALD EERGES
Telephone:	2139960122
Mailing Name:	Not reported
Mailing Address:	865 S FIGUEROA STE 3340
Mailing City,St,Zip:	LOS ANGELES, CA 900170000
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111
TSD County:	99
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	210.7

LOS ANGELES ARENA COMPANY (Continued) **S104566781**

Facility County: Los Angeles

DE1174
NE
< 1/8
0.121 mi.
641 ft.

MUSIC CENTER OPERATING CO
215 N GRAND AVE
LOS ANGELES, CA 90012

HAZNET **S103642028** **N/A**

Site 2 of 4 in cluster DE

Relative: **Higher**

Actual: **388 ft.**

HAZNET:

Year:	1998
Gepaid:	CAC000874944
Contact:	MUSIC CENTER OPERATING CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	3.7083
Facility County:	Los Angeles

Year:	1998
Gepaid:	CAC000874944
Contact:	MUSIC CENTER OPERATING CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Los Angeles
TSD EPA ID:	CAD009007626
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Disposal, Land Fill
Tons:	3.7083
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000874944
Contact:	MUSIC CENTER OPERATING CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	1.0225
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000874944
Contact:	MUSIC CENTER OPERATING CO
Telephone:	0000000000

MUSIC CENTER OPERATING CO (Continued) **S103642028**

Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2
Disposal Method:	Transfer Station
Tons:	.1100
Facility County:	Los Angeles

Year:	1995
Gepaid:	CAC000874944
Contact:	MUSIC CENTER OPERATING CO
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	135 N GRAND AVE
Mailing City,St,Zip:	LOS ANGELES, CA 900123013
Gen County:	Los Angeles
TSD EPA ID:	CAD000088252
TSD County:	Los Angeles
Waste Category:	Liquids with pH <= 2 with metals
Disposal Method:	Transfer Station
Tons:	.0125
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
11 additional CA_HAZNET: record(s) in the EDR Site Report.

DH1175
SSW
< 1/8
0.122 mi.
643 ft.

THOMPSON C H
224 W 12TH ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009079620** **N/A**

Site 3 of 3 in cluster DH

Relative: **Lower**

Actual: **243 ft.**

EDR Historical Auto Stations:

Name:	THOMPSON C H
Year:	1924
Type:	AUTOMOBILE REPAIRING

CO1176
SSW
< 1/8
0.122 mi.
644 ft.

TRANSAMERICA REALTY SERVICES
150 W 12TH ST
LOS ANGELES, CA 90015

CA FID UST **SWEEPS UST** **S101584268** **N/A**

Site 12 of 13 in cluster CO

Relative: **Lower**

Actual: **242 ft.**

CA FID UST:

Facility ID:	19010041
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2130000000
Mail To:	Not reported
Mailing Address:	150 W 12TH ST
Mailing Address 2:	Not reported

TRANSAMERICA REALTY SERVICES (Continued) **S101584268**

Mailing City,St,Zip:	LOS ANGELES 900150000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

SWEEPS UST:

Status:	Not reported
Comp Number:	7466
Number:	Not reported
Board Of Equalization:	Not reported
Ref Date:	Not reported
Act Date:	Not reported
Created Date:	Not reported
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	0

DE1177
NE
< 1/8
0.122 mi.
644 ft.

MUSIC CENTER AHMANSON THEATRE
215 N GRAND AVE
LOS ANGELES, CA 90063

CA FID UST **S101617586**
SWEEPS UST **N/A**

Site 3 of 4 in cluster DE

Relative:
Higher

Actual:
394 ft.

CA FID UST:

Facility ID:	19031721
Regulated By:	UTNKA
Regulated ID:	00020712
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	2132672242
Mail To:	Not reported
Mailing Address:	1100 N EASTERN AVE
Mailing Address 2:	Not reported
Mailing City,St,Zip:	LOS ANGELES 900630000
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

SWEEPS UST:

Status:	A
Comp Number:	1455
Number:	5
Board Of Equalization:	44-011798

MUSIC CENTER AHMANSON THEATRE (Continued) **S101617586**

Ref Date:	03-09-93
Act Date:	03-16-94
Created Date:	02-29-88
Tank Status:	A
Owner Tank Id:	Not reported
Swrcb Tank Id:	19-050-001455-000001
Actv Date:	04-20-88
Capacity:	550
Tank Use:	M.V. FUEL
Stg:	P
Content:	DIESEL
Number Of Tanks:	1

DE1178
NE
< 1/8
0.122 mi.
644 ft.

MUSIC CENTER ALMANSON THEATRE **HIST UST** **U001562347**
215 N GRAND AVE **N/A**
LOS ANGELES, CA 90063

Site 4 of 4 in cluster DE

Relative:
Higher

Actual:
394 ft.

HIST UST:

Region:	STATE
Facility ID:	00000020712
Facility Type:	Other
Other Type:	THEATRE
Total Tanks:	0001
Contact Name:	L.A. COUNTY MECHANICAL DEPARTM
Telephone:	2132672242
Owner Name:	LOS ANGELES COUNTY MECHANICAL
Owner Address:	1100 N. EASTERN AVE.
Owner City,St,Zip:	LOS ANGELES, CA 90063

Tank Num:	001
Container Num:	1
Year Installed:	1969
Tank Capacity:	00000550
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Tank Construction:	Not reported
Leak Detection:	Stock Inventor

DK1179
SSE
< 1/8
0.123 mi.
648 ft.

ROBERT NAM **HAZNET** **S109931244**
1048 S LOS ANGELES ST **N/A**
LOS ANGELES, CA 90015

Site 1 of 2 in cluster DK

Relative:
Lower

Actual:
241 ft.

HAZNET:

Year:	2008
Gepaid:	CAC002634816
Contact:	ROBERT NAM
Telephone:	2134270445
Mailing Name:	Not reported
Mailing Address:	2595 W PICO BLVD
Mailing City,St,Zip:	LOS ANGELES, CA 900064011
Gen County:	Los Angeles
TSD EPA ID:	AZC950823111

ROBERT NAM (Continued) **S109931244**

TSD County: 99
Waste Category: Asbestos containing waste
Disposal Method: Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons: 17.6
Facility County: Los Angeles

DL1180
ENE
< 1/8
0.123 mi.
649 ft.

ROSSLYN HOTEL VALET SHOP
121 W 5TH ST
LOS ANGELES, CA

EDR Historical Cleaners **1009192088**
N/A

Site 1 of 2 in cluster DL

Relative:
Higher

Actual:
265 ft.

EDR Historical Cleaners:
Name: ROSSLYN HOTEL VALET SHOP
Year: 1937
Type: CLOTHES PRESSERS AND CLEANERS

DL1181
ENE
< 1/8
0.123 mi.
650 ft.

ROSSLYN HOTEL
112 W 5TH
LOS ANGELES, CA 90013

HAZNET **S104572384**
N/A

Site 2 of 2 in cluster DL

Relative:
Higher

Actual:
265 ft.

HAZNET:
Year: 1999
Gepaid: CAC002218505
Contact: LUCY WANG
Telephone: 2136243311
Mailing Name: Not reported
Mailing Address: 112 W 5TH
Mailing City,St,Zip: LOS ANGELES, CA 900130000
Gen County: Los Angeles
TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 2.0227
Facility County: Los Angeles

DI1182
SSW
< 1/8
0.124 mi.
653 ft.

KNASTER TRUST
1200 SOUTH OLIVE ST
LOS ANGELES, CA 90015

HAZNET **S103973613**
N/A

Site 2 of 3 in cluster DI

Relative:
Lower

Actual:
243 ft.

HAZNET:
Year: 1996
Gepaid: CAC001138496
Contact: KNASTER TRUST
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 1201 SOUTH OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles

KNASTER TRUST (Continued) **S103973613**

TSD EPA ID: CAD009007626
TSD County: Los Angeles
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 58.9960
Facility County: Los Angeles

DI1183 **SIDNEY AND LINDA KASTNER TRUST** **HAZNET** **S104569560**
SSW **1200 S OLIVE ST** **N/A**
< 1/8 **LOS ANGELES, CA 90015**
0.124 mi.
653 ft. **Site 3 of 3 in cluster DI**

Relative:
Lower

Actual:
243 ft.

HAZNET:
Year: 1999
Gepaid: CAC002112032
Contact: SIDNEY AND LINDA KASTNER TRUST
Telephone: 2137491923
Mailing Name: Not reported
Mailing Address: 1201 S OLIVE ST
Mailing City,St,Zip: LOS ANGELES, CA 900150000
Gen County: Los Angeles
TSD EPA ID: CAD000088252
TSD County: Los Angeles
Waste Category: Contaminated soil from site clean-up
Disposal Method: Transfer Station
Tons: 6.7424
Facility County: Los Angeles

CO1184 **RICHARDS COWAN** **EDR Historical Auto Stations** **1009080021**
SSW **1201 S BROADWAY** **N/A**
< 1/8 **LOS ANGELES, CA**
0.124 mi.
653 ft. **Site 13 of 13 in cluster CO**

Relative:
Lower

Actual:
241 ft.

EDR Historical Auto Stations:
Name: ASSELIN ANDRE
Year: 1929
Type: AUTOMOBILE REPAIRING AND SERVICE STATIONS

Name: RICHARDS COWAN
Year: 1933
Type: GASOLINE AND OIL SERVICE STATIONS

DF1185 **MICROPRINT** **RCRA-SQG** **1000367961**
NNE **605 SOUTH GRAND AVE** **FINDS** **CAD982461980**
< 1/8 **LOS ANGELES, CA 90017**
0.124 mi.
654 ft. **Site 6 of 7 in cluster DF**

Relative:
Higher

Actual:
275 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: MICROPRINT
Facility address: 605 SOUTH GRAND AVE
LOS ANGELES, CA 90017

MICROPRINT (Continued) **1000367961**

EPA ID:	CAD982461980
Mailing address:	SOUTH GRAND AVE
	LOS ANGELES, CA 90017
Contact:	Not reported
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	KRISHNA COPY CENTER INC
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	(415) 555-1212
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

MICROPRINT (Continued) **1000367961**

FINDS:

Registry ID: 110002816007

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DF1186 **AVERILL MORGAN CO** **EDR Historical Cleaners** **1009188756**
NNE **605 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA**
0.124 mi.
654 ft. **Site 7 of 7 in cluster DF**

Relative:
Higher

Actual:
275 ft.

EDR Historical Cleaners:

Name:	AVERILL MORGAN CO
Year:	1924
Type:	CLOTHES CLEANERS PRESSERS AND DYERS

CU1187 **PARAGON PARKING INC** **HAZNET** **S100928131**
ENE **426 S SPRING** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.124 mi.
655 ft. **Site 7 of 7 in cluster CU**

Relative:
Higher

Actual:
270 ft.

HAZNET:

Year:	2003
Gepaid:	CAC002572306
Contact:	RICHARD DANE
Telephone:	2136894818
Mailing Name:	Not reported
Mailing Address:	800 W 6TH ST STE 160
Mailing City,St,Zip:	LOS ANGELES, CA 90017
Gen County:	Los Angeles
TSD EPA ID:	AZC980823111
TSD County:	Los Angeles
Waste Category:	Asbestos containing waste
Disposal Method:	Not reported
Tons:	1.68
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAC000796904
Contact:	SPRING STREET ASSOCIATES
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	777 S MAIN ST
Mailing City,St,Zip:	ORANGE, CA 926680000
Gen County:	Los Angeles
TSD EPA ID:	IRC957100891
TSD County:	99

PARAGON PARKING INC (Continued) **S100928131**

Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: .2107
Facility County: Los Angeles

1188
WSW
< 1/8
0.124 mi.
656 ft.

PLUECK H J
514 W 12TH ST
LOS ANGELES, CA

EDR Historical Auto Stations **1009084585**
N/A

Relative:
Lower

Actual:
242 ft.

EDR Historical Auto Stations:
Name: PLUECK H J
Year: 1942
Type: AUTOMOBILE REPAIRING

DM1189
NE
< 1/8
0.125 mi.
658 ft.

CALIFORNIA PLAZA
300 S GRAND AVE
LOS ANGELES, CA 90071

Site 1 of 8 in cluster DM

HAZNET **S103650672**
N/A

Relative:
Higher

Actual:
397 ft.

HAZNET:
Year: 2010
Gepaid: CAL000026462
Contact: DEACT NON-DELIV. PER 95 FEES -
Telephone: --
Mailing Name: Not reported
Mailing Address: 300 S GRAND AVE
Mailing City,St,Zip: LOS ANGELES, CA 900710000
Gen County: Not reported
TSD EPA ID: CAL000282598
TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.2085
Facility County: Los Angeles

Year: 1999
Gepaid: CAD982430506
Contact: METROPOLITAN LIFE INSURANCE CO
Telephone: 2136872004
Mailing Name: Not reported
Mailing Address: 300 S GRAND AVE STE 2665
Mailing City,St,Zip: LOS ANGELES, CA 900713136
Gen County: Los Angeles
TSD EPA ID: CAT080033681
TSD County: Los Angeles
Waste Category: Unspecified oil-containing waste
Disposal Method: Recycler
Tons: 0.0417
Facility County: Los Angeles

Year: 1996
Gepaid: CAD982430506

CALIFORNIA PLAZA (Continued) **S103650672**

Contact:	METROPOLITAN LIFE INSURANCE CO
Telephone:	2136872004
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE 2665
Mailing City,St,Zip:	LOS ANGELES, CA 900713136
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Recycler
Tons:	.0050
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAD982430506
Contact:	METROPOLITAN LIFE INSURANCE CO
Telephone:	2136872004
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE 2665
Mailing City,St,Zip:	LOS ANGELES, CA 900713136
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Paint sludge
Disposal Method:	Recycler
Tons:	.8428
Facility County:	Los Angeles

Year:	1996
Gepaid:	CAD982430506
Contact:	METROPOLITAN LIFE INSURANCE CO
Telephone:	2136872004
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE 2665
Mailing City,St,Zip:	LOS ANGELES, CA 900713136
Gen County:	Los Angeles
TSD EPA ID:	CAD008252405
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	2.2518
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

DM1190
NE **300 S. GRAND AVE**
< 1/8 **LOS ANGELES, CA**
0.125 mi.
658 ft. **Site 2 of 8 in cluster DM**

CHMIRS **S105661882**
N/A

Relative:
Higher

Actual:
397 ft.

CHMIRS:

OES Incident Number:	99-1835
OES notification:	4/26/199909:29:13 PM
OES Date:	Not reported
OES Time:	Not reported
Incident Date:	Not reported

(Continued) **S105661882**

Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
Special Studies 1:	Not reported
Special Studies 2:	Not reported
Special Studies 3:	Not reported
Special Studies 4:	Not reported
Special Studies 5:	Not reported
Special Studies 6:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA/DOT/PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Comments:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Contractor
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1999
Agency:	LA City FD
Incident Date:	4/26/199912:00:00 AM
Admin Agency:	Los Angeles City Fire Department
Amount:	Not reported
Contained:	Yes
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	Halon 1301
Quantity Released:	Not reported
BBLS:	0
Cups:	0
CUFT:	0
Gallons:	0
Grams:	0

(Continued) **S105661882**

Pounds:	1600
Liters:	0
Ounces:	0
Pints:	0
Quarts:	0
Sheen:	0
Tons:	0
Unknown:	0
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
Description:	Fire or overheating in computer room which caused discharge of halon system, which then went into exhaust system and was evacuated to atmosphere Building was unoccupied at time

---

DM1191 **CALIFORNIA PLAZA** **HAZNET** **S108200302**
NE **300 S GRAND AVE** **N/A**
< 1/8 **LOS ANGELES, CA 90071**
0.125 mi.
658 ft. **Site 3 of 8 in cluster DM**

Relative:
Higher

Actual:
397 ft.

HAZNET:

Year:	2004
Gepaid:	CAC002576554
Contact:	GINO MESINAS/MEN AT WORK
Telephone:	3103239297
Mailing Name:	Not reported
Mailing Address:	13119 S BROADWAY ST
Mailing City,St,Zip:	LOS ANGELES, CA 90076
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Recycler
Tons:	0.45
Facility County:	Not reported

DM1192 **METROPOLITAN STUCTURE WEST** **RCRA-SQG** **1000455475**
NE **300 S GRAND** **FINDS** **CAD982430506**
< 1/8 **LOS ANGELES, CA 90071**
0.125 mi.
658 ft. **Site 4 of 8 in cluster DM**

Relative:
Higher

Actual:
397 ft.

RCRA-SQG:

Date form received by agency:	08/21/1990
Facility name:	METROPOLITAN STUCTURE WEST
Facility address:	300 S GRAND LOS ANGELES, CA 90071
EPA ID:	CAD982430506
Mailing address:	300 S GRAND STE SECOND THOUSAN LOS ANGELES, CA 90071
Contact:	ENVIRONMENTAL MANAGER
Contact address:	300 S GRAND LOS ANGELES, CA 90071
Contact country:	US
Contact telephone:	(213) 687-2004

METROPOLITAN STUCTURE WEST (Continued) **1000455475**

Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: GRAND AVENUE ASSOC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002810165

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

METROPOLITAN STUCTURE WEST (Continued) **1000455475**

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

DM1193
NE
< 1/8
0.125 mi.
658 ft.

ONE CALIFORNIA PLAZA
300 S GRAND AVE
LOS ANGELES, CA 90071

WDS **U003780794**
UST **N/A**

Site 5 of 8 in cluster DM

Relative:
Higher

Actual:
397 ft.

CA WDS:

Facility ID:	Los Angeles River 196000193
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAG994004 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	2136872000
Facility Contact:	Karl Breitenbach
Agency Name:	MAGUIRE PROPERTIES
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	6511
SIC Code 2:	Not reported
Primary Waste:	Miscellaneous (Includes wastes from dewatering, recreational lake overflow, swimming pool wastes, water ride wastewater, ground water seepage and other wastes of this type)
Primary Waste Type:	Designated/Influent or Solid Wastes that pose a significant threat to water quality because of their high concentrations (E.G., BOD, Hardness, TRF, Chloride). 'Manageable' hazardous wastes (E.G., inorganic salts and heavy metals) are included in this category.
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	No reclamation requirements associated with this facility.
POTW:	The facility is not a POTW.
Treat To Water:	0
Complexity:	Not reported

UST:

Facility ID:	24351
Latitude:	34.05383
Longitude:	-118.25042

DM1194 **MAGUIRE PROPERTIES** **HAZNET** **S108213024**
NE **300 S GRAND AVE STE LT-30** **N/A**
< 1/8 **LOS ANGELES, CA 90071**
0.125 mi.
658 ft. **Site 6 of 8 in cluster DM**

Relative:
Higher

Actual:
397 ft.

HAZNET:

Year:	2010
Gepaid:	CAC002588316
Contact:	MIKE BROOKS
Telephone:	2136872289
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE LT-30
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.009
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002588316
Contact:	MIKE BROOKS
Telephone:	2136872289
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE LT-30
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.0895
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002588316
Contact:	MIKE BROOKS
Telephone:	2136872289
Mailing Name:	Not reported
Mailing Address:	300 S GRAND AVE STE LT-30
Mailing City,St,Zip:	LOS ANGELES, CA 90071
Gen County:	Not reported
TSD EPA ID:	NVT330010000
TSD County:	Not reported
Waste Category:	Unspecified aqueous solution
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.7
Facility County:	Los Angeles

Year:	2010
Gepaid:	CAC002588316
Contact:	MIKE BROOKS
Telephone:	2136872289

MAGUIRE PROPERTIES (Continued) **S108213024**

Mailing Name: Not reported
Mailing Address: 300 S GRAND AVE STE LT-30
Mailing City,St,Zip: LOS ANGELES, CA 90071
Gen County: Not reported
TSD EPA ID: CAD008364432
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.014
Facility County: Los Angeles

Year: 2005
Gepaid: CAC002588316
Contact: MIKE BROOKS
Telephone: 2136872289
Mailing Name: Not reported
Mailing Address: 300 S GRAND AVE STE LT-30
Mailing City,St,Zip: LOS ANGELES, CA 90071
Gen County: Los Angeles
TSD EPA ID: CAD028409019
TSD County: Los Angeles
Waste Category: Unspecified solvent mixture
Disposal Method: Transfer Station
Tons: 0.18
Facility County: Not reported

Click this hyperlink while viewing on your computer to access additional CA_HAZNET: detail in the EDR Site Report.

DM1195 **BUNKER HILL ASSOCIATES** **CA FID UST** **S101583917**
NE **300 S GRAND AVE** **SWEEPS UST** **N/A**
< 1/8 **LOS ANGELES, CA 90013**
0.125 mi.
658 ft. **Site 7 of 8 in cluster DM**

Relative: Higher

Actual: 397 ft.

CA FID UST:
Facility ID: 19007341
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 2130000000
Mail To: Not reported
Mailing Address: 300 S GRAND AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: LOS ANGELES 900130000
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

SWEEPS UST:
Status: A

BUNKER HILL ASSOCIATES (Continued) **S101583917**

Comp Number:	6522
Number:	3
Board Of Equalization:	Not reported
Ref Date:	03-09-93
Act Date:	03-09-93
Created Date:	02-29-88
Tank Status:	Not reported
Owner Tank Id:	Not reported
Swrcb Tank Id:	Not reported
Actv Date:	Not reported
Capacity:	Not reported
Tank Use:	Not reported
Stg:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

DM1196 **NE** **< 1/8** **0.125 mi.** **658 ft.**	**ONE CALIFORNIA PLAZA** **300 SOUTH GRAND AVENUE** **LOS ANGELES, CA 90071** **Site 8 of 8 in cluster DM**	**NPDES** **ENF**	**S109693294** **N/A**

Relative: **Higher**

Actual: **397 ft.**

NPDES:

Npdes Number:	CAG994004
Facility Status:	Historical
Agency Id:	396828
Region:	4
Regulatory Measure Id:	193297
Order No:	R4-2003-0111
Regulatory Measure Type:	Enrollee
Place Id:	246726
WDID:	4B196000193
Program Type:	NPDES
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/31/1995
Expiration Date Of Regulatory Measure:	01/01/2011
Termination Date Of Regulatory Measure:	02/23/2010
Discharge Name:	Maguire Properties
Discharge Address:	555 West 5th Street
Discharge City:	Los Angeles
Discharge State:	CA
Discharge Zip:	90013

ENF:

Region:	4
Facility Id:	246726
Agency Name:	Maguire Properties
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0538420
Place Longitude:	-118.25044
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported

ONE CALIFORNIA PLAZA (Continued) **S109693294**

SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	5.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000193
Reg Measure Id:	193297
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	04/19/2010
Effective Date:	08/31/1995
Expiration/Review Date:	01/01/2011
Termination Date:	02/23/2010
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	15 - WDR’s pending rescission
Direction/Voice:	Passive
Enforcement Id(EID):	355262
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	10/15/2008
Adoption/Issuance Date:	10/15/2008
Achieve Date:	Not reported
Termination Date:	03/12/2009
ACL Issuance Date:	Not reported

ONE CALIFORNIA PLAZA (Continued) **S109693294**

EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 10/15/08 for failure to file NOI for coverage under Order R4-2008-0032.
Description:	NOV sent 10/15/08 for failure to file NOI or ROWD for coverage under Order R4-2008-0032. NOI received 3/12/09.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4
Facility Id:	246726
Agency Name:	Maguire Properties
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0538420
Place Longitude:	-118.25044
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	5.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000193
Reg Measure Id:	193297
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor

ONE CALIFORNIA PLAZA (Continued) **S109693294**

Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	04/19/2010
Effective Date:	08/31/1995
Expiration/Review Date:	01/01/2011
Termination Date:	02/23/2010
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	15 - WDR’s pending rescission
Direction/Voice:	Passive
Enforcement Id(EID):	338090
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	11/26/2007
Adoption/Issuance Date:	11/26/2007
Achieve Date:	Not reported
Termination Date:	11/26/2007
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 11/26/07 for 17 overdue DMRs & no flow measuring device.
Description:	NOV sent 11/26/07 for 17 overdue DMRs & no flow measuring device.
Program:	NPDES
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	0
Initial Assessed Amount:	0
Liability $ Amount:	0
Project $ Amount:	0
Liability $ Paid:	0
Project $ Completed:	0
Total $ Paid/Completed Amount:	0

Region:	4
Facility Id:	246726
Agency Name:	Maguire Properties
Place Type:	Facility
Place Subtype:	Not reported
Facility Type:	All other facilities
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.0538420
Place Longitude:	-118.25044
SIC Code 1:	Not reported
SIC Desc 1:	Not reported
SIC Code 2:	Not reported

ONE CALIFORNIA PLAZA (Continued) **S109693294**

SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	5.00000000
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Designated miscellaneous
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	NPDES
# Of Programs:	1
WDID:	4B196000193
Reg Measure Id:	193297
Reg Measure Type:	Enrollee
Region:	4
Order #:	R4-2003-0111
Npdes# CA#:	CAG994004
Major-Minor:	Minor
Npdes Type:	OTH
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	1000
Status:	Historical
Status Date:	04/19/2010
Effective Date:	08/31/1995
Expiration/Review Date:	01/01/2011
Termination Date:	02/23/2010
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	Y
Individual/General:	I
Fee Code:	15 - WDR’s pending rescission
Direction/Voice:	Passive
Enforcement Id(EID):	358032
Region:	4
Order / Resolution Number:	SWB-2008-4-0057
Enforcement Action Type:	Admin Civil Liability
Effective Date:	07/15/2009
Adoption/Issuance Date:	07/15/2009
Achieve Date:	Not reported
Termination Date:	08/11/2009
ACL Issuance Date:	12/10/2008

ONE CALIFORNIA PLAZA (Continued) **S109693294**

EPL Issuance Date:	Not reported
Status:	Historical
Title:	Expedited Payment Letter for Maguire Properties
Description:	Mandatory Minimum Penalty Amount Owed for Reporting Violations (7 Late Reporting Violations + 0 Deficient Reporting Violations) $3,000 = $21,000
Program:	NPDES
Latest Milestone Completion Date:	08/11/2009
# Of Programs1:	1
Total Assessment Amount:	21000
Initial Assessed Amount:	21000
Liability $ Amount:	21000
Project $ Amount:	0
Liability $ Paid:	21000
Project $ Completed:	0
Total $ Paid/Completed Amount:	21000

DK1197 **KELLEY BROS** **EDR Historical Auto Stations** **1009080493**
SSE **1041 S LOS ANGELES ST** **N/A**
< 1/8 **LOS ANGELES, CA**
0.125 mi.
659 ft. **Site 2 of 2 in cluster DK**

Relative:
Lower

Actual:
240 ft.

EDR Historical Auto Stations:

Name:	KELLEY BROS
Year:	1924
Type:	AUTOMOBILE REPAIRING

DC1198 **HERTZ RENT-A-CAR (FORMER)** **LUST** **S100928354**
North **1055 006TH ST W** **N/A**
< 1/8 **LOS ANGELES, CA 90017**
0.125 mi.
660 ft. **Site 4 of 4 in cluster DC**

Relative:
Higher

Actual:
298 ft.

LUST:

Region:	STATE
Global Id:	T0603700587
Latitude:	34.0537608
Longitude:	-118.2613886
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/13/1997
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Worker:	YR
Local Agency:	LOS ANGELES, CITY OF
RB Case Number:	900170070
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LUST:

Global Id:	T0603700587
Contact Type:	Regional Board Caseworker

HERTZ RENT-A-CAR (FORMER) (Continued) **S100928354**

Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported
Global Id:	T0603700587
Contact Type:	Local Agency Caseworker
Contact Name:	ELOY LUNA
Organization Name:	LOS ANGELES, CITY OF
Address:	200 North Main Street, Suite 1780
City:	LOS ANGELES
Email:	eloy.luna@lacity.org
Phone Number:	Not reported

LUST:

Global Id:	T0603700587
Action Type:	Other
Date:	01/01/1950
Action:	Leak Reported
Global Id:	T0603700587
Action Type:	Other
Date:	01/01/1950
Action:	Leak Discovery

LUST REG 4:

Region:	4
Regional Board:	04
County:	Los Angeles
Facility Id:	900170070
Status:	Case Closed
Substance:	Gasoline
Substance Quantity:	Not reported
Local Case No:	Not reported
Case Type:	Groundwater
Abatement Method Used at the Site:	GTEDVE
Global ID:	T0603700587
W Global ID:	W0607701254
Staff:	UNK
Local Agency:	19050
Cross Street:	Not reported
Enforcement Type:	Not reported
Date Leak Discovered:	11/8/1989
Date Leak First Reported:	11/8/1989
Date Leak Record Entered:	3/4/1990
Date Confirmation Began:	Not reported
Date Leak Stopped:	Not reported
Date Case Last Changed on Database:	5/28/1997
Date the Case was Closed:	6/13/1997
How Leak Discovered:	Not reported
How Leak Stopped:	Not reported
Cause of Leak:	Other Cause
Leak Source:	Not reported

HERTZ RENT-A-CAR (FORMER) (Continued) **S100928354**

Operator:	Not reported
Water System:	UNOCAL - JIM SCOTT
Well Name:	Not reported
Approx. Dist To Production Well (ft):	711.74950919894502220224627222
Source of Cleanup Funding:	Not reported
Preliminary Site Assessment Workplan Submitted:	Not reported
Preliminary Site Assessment Began:	Not reported
Pollution Characterization Began:	Not reported
Remediation Plan Submitted:	Not reported
Remedial Action Underway:	11/8/1989
Post Remedial Action Monitoring Began:	10/1/1991
Enforcement Action Date:	Not reported
Historical Max MTBE Date:	Not reported
Hist Max MTBE Conc in Groundwater:	Not reported
Hist Max MTBE Conc in Soil:	Not reported
Significant Interim Remedial Action Taken:	Not reported
GW Qualifier:	Not reported
Soil Qualifier:	Not reported
Organization:	Not reported
Owner Contact:	Not reported
Responsible Party:	THE HERTZ CORPORATION
RP Address:	225 BRAE BLVD, PARK RIDGE, NJ 07656-0713
Program:	LUST
Lat/Long:	34.0537608 / -1
Local Agency Staff:	PEJ
Beneficial Use:	Not reported
Priority:	Not reported
Cleanup Fund Id:	Not reported
Suspended:	Not reported
Assigned Name:	3901254-001GEN
Summary:	FORMER GN CASE. PRECLOSURE LETTER SENT JULY 15, 1996. 5/28/97 - RPT OF WELL ABANDONMENT ALSO CASE #900170010

Count: 21 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LOS ANGELES	92278072		LA TOFC RAMP YARD		ERNS
CISCO GROVE	S101617159	CISCO GROVE STATION	CISCO GRV OFF-RAMP I	90014	FID,SWEEPS UST
LOS ANGELES	S102058052	SHELL OIL #204-2928-0538	1695 W PACIFIC COAST HWY		HMS LOS ANGELES
LOS ANGELES	S102798959	1X MOUNTAINS RECRTN & CONCV AUTHOR	LA TUNA CANYON ROAD & HWY 210	00000	HAZNET
LOS ANGELES	S102801764	UNOCAL SO CAL. DIV. PIPE LINE	SO. IMPERIAL HWY, E. OF BLOOM-	00000	HAZNET
LOS ANGELES	S102804827	BARNARD TRANSPORTATION	I-5 HWY AND HWY 118 AT THE PAX	00000	HAZNET
HOLT	S103678454	SFPP LP (HOLT STIE)	COOK INLET RD N OF HWY 4	90017	HAZNET
LOS ANGELES	S103679782	MURPHY INDUSTRIAL COATINGS INC	RTE 10 AT 10/60 SEPERATION	00000	HAZNET
LOS ANGELES	S103679783	MURPHY IND COATING LOS ANGELES	RTE 134 & PASS ST OC LA RVR BR	00000	HAZNET
LOS ANGELES	S105083391	PACIFIC RIM TRANSPORTATION INC	VAN NUYS OFF RAMP WB 101 FREEW	00000	HAZNET
LOS ANGELES	S106841797	UNOCAL - OIL & GAS DIVISION	STERNS RD/HWY 118		EMI
	S107532211		28.15 MI.MARKER ON ANGELES CRE		CDL
LOS ANGELES	S108740844	BLU AUTOBODY GROUP INC	731 W PACIFIC COAST HWY		HMS LOS ANGELES
CASTAIC	S110737476	WILLIAM E WARNE POWER PLANT	HIGHWAY 99 @ PYRAMID LAKE	91310	NPDES,ENF
LOS ANGELES	S110986828	LA CO B&H WILL RODGERS BEACH	17940 W PACIFIC COAST HWY		HMS LOS ANGELES
LOS ANGELES	S111214334	BRADLEY WEST CNSTRUCTION TRAFFIC M	MAIN STREET AND IMPERIAL HIGHW	90012	NPDES
LOS ANGELES	S111216802	VMC BIG ROCK EXPANSION	0 INTER 155TH HWY 138	90065	NPDES
CISCO GROVE	U001560571	CISCO GROVE STATION	CISCO GROVE OFF-RAMP I-80	90014	HIST UST
BREA	U001560714	G & L LEASE	IMPERIAL HIGHWAY	90017	SLIC REGION 2,HIST UST
	U001560735	NAIM FAHEL	STAR ROUTE #2, P.O.BOX 114	90017	HIST UST
SULPHUR MOUNTAIN	U001560746	SULPHUR CREST	OFF HIGHWAY 150	90017	HIST UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 5

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 04/05/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 04/05/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 40

Source: EPA
Telephone: N/A
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/27/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/12/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/28/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 07/05/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 08/19/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 132

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 30

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 06/14/2012
Date Data Arrived at EDR: 06/14/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 06/14/2012
Date Data Arrived at EDR: 06/14/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 103

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/14/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 14

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-5092
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Quarterly

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 103

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 02/28/2012
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 76

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 42

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 02/17/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 42

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 05/10/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/02/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 93

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 05/07/2012
Date Data Arrived at EDR: 05/08/2012
Date Made Active in Reports: 05/23/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/14/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/12/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/01/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/28/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 24

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 05/01/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 05/09/2012
Date Data Arrived at EDR: 05/10/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 15

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

Other Ascertainable Records

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/15/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/15/2012
Number of Days to Update: 41

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/29/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 94

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/08/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 01/25/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 36

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/14/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 92

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/13/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/05/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/29/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/29/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 07/15/2011	Telephone: 301-415-7169
Date Made Active in Reports: 09/13/2011	Last EDR Contact: 06/11/2012
Number of Days to Update: 60	Next Scheduled EDR Contact: 09/24/2012
	Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/10/2012	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/12/2012	Telephone: 202-343-9775
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 04/10/2012
Number of Days to Update: 49	Next Scheduled EDR Contact: 07/23/2012
	Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011	Source: EPA
Date Data Arrived at EDR: 12/13/2011	Telephone: (415) 947-8000
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 06/12/2012
Number of Days to Update: 79	Next Scheduled EDR Contact: 09/24/2012
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009	Source: EPA/NTIS
Date Data Arrived at EDR: 03/01/2011	Telephone: 800-424-9346
Date Made Active in Reports: 05/02/2011	Last EDR Contact: 06/01/2012
Number of Days to Update: 62	Next Scheduled EDR Contact: 09/10/2012
	Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/23/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

UIC: UIC Listing

A listing of underground control injection wells.

Date of Government Version: 12/09/2011
Date Data Arrived at EDR: 02/29/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 35

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 69

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 01/19/2012
Date Data Arrived at EDR: 01/19/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 33

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/16/2011
Number of Days to Update: 28

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 06/22/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/29/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/22/2012
Date Data Arrived at EDR: 02/24/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 40

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: N/A

FINANCIAL ASSURANCE 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 05/04/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 05/04/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/24/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/02/2012
Number of Days to Update: 20

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/12/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 05/24/2012
Date Data Arrived at EDR: 06/05/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 03/31/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 28

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/18/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Varies

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/09/2010
Date Data Arrived at EDR: 08/11/2010
Date Made Active in Reports: 08/20/2010
Number of Days to Update: 9

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: 09/10/2012
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/11/2012
Date Data Arrived at EDR: 04/12/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 26

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/12/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/14/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/03/2012
Date Data Arrived at EDR: 04/04/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 34

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List

List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/28/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 41

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/07/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/29/2012
Date Data Arrived at EDR: 05/29/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 23

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 31

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/24/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 04/26/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 23

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 03/16/2012
Date Data Arrived at EDR: 04/16/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 22

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/10/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 01/13/2012
Date Data Arrived at EDR: 01/24/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 05/08/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites

Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: No Update Planned

ORANGE COUNTY:

List of Industrial Site Cleanups

Petroleum and non-petroleum spills.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 25

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 06/21/2012
Number of Days to Update: 34

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/17/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 7

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/19/2012
Date Made Active in Reports: 04/04/2012
Number of Days to Update: 16

Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 31

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/23/2012
Date Data Arrived at EDR: 04/24/2012
Date Made Active in Reports: 05/24/2012
Number of Days to Update: 30

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/25/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 04/16/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 22

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/09/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2012
Date Data Arrived at EDR: 04/17/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 21

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/09/2012
Next Scheduled EDR Contact: 07/23/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/01/2012
Date Data Arrived at EDR: 03/01/2012
Date Made Active in Reports: 03/27/2012
Number of Days to Update: 26

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 39

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/29/2012
Date Data Arrived at EDR: 03/30/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 39

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/09/2012
Date Data Arrived at EDR: 04/09/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 29

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/17/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 43

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/18/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/05/2012
Date Data Arrived at EDR: 03/07/2012
Date Made Active in Reports: 03/27/2012
Number of Days to Update: 20

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 06/04/2012
Next Scheduled EDR Contact: 09/17/2012
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 05/15/2012
Date Data Arrived at EDR: 05/15/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 10

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/15/2012
Next Scheduled EDR Contact: 08/27/2012
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks

A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

Underground Storage Tanks

Underground storage tank sites located in Solano county.

Date of Government Version: 03/19/2012
Date Data Arrived at EDR: 03/22/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 47

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/15/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/05/2011
Date Data Arrived at EDR: 04/06/2011
Date Made Active in Reports: 05/12/2011
Number of Days to Update: 36

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/15/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 03/12/2012
Date Data Arrived at EDR: 03/13/2012
Date Made Active in Reports: 04/03/2012
Number of Days to Update: 21

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/11/2012
Next Scheduled EDR Contact: 09/24/2012
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 02/03/2012
Date Data Arrived at EDR: 02/22/2012
Date Made Active in Reports: 03/29/2012
Number of Days to Update: 36

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 10/22/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/21/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 05/04/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 21

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/30/2012
Next Scheduled EDR Contact: 08/13/2012
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/21/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 48

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/27/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2012
Date Data Arrived at EDR: 03/30/2012
Date Made Active in Reports: 05/08/2012
Number of Days to Update: 39

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/21/2012
Next Scheduled EDR Contact: 10/08/2012
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/21/2012
Date Data Arrived at EDR: 05/22/2012
Date Made Active in Reports: 05/31/2012
Number of Days to Update: 9

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/22/2012
Next Scheduled EDR Contact: 09/03/2012
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/17/2012
Next Scheduled EDR Contact: 07/30/2012
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 36

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/09/2012
Next Scheduled EDR Contact: 08/20/2012
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 04/27/2012
Date Made Active in Reports: 06/05/2012
Number of Days to Update: 39

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/23/2012
Next Scheduled EDR Contact: 08/06/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 07/02/2012
Next Scheduled EDR Contact: 10/01/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

LA Streetcar
Broadway and Pico Blvd
Los Angeles, CA 90015

Inquiry Number: 3178038.4
October 06, 2011

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:
Aerial Photography October 06, 2011

Target Property:
Broadway and Pico Blvd
Los Angeles, CA 90015

Year	***Scale***	***Details***	***Source***
1927	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1927	Fairchild
1938	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1938	Laval
1947	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1947	Fairchild
1956	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1956	Fairchild
1965	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1965	Fairchild
1976	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1976	Teledyne
1989	Aerial Photograph. Scale: 1"=1000'	Flight Year: 1989	USGS
1994	Aerial Photograph. Scale: 1"=604'	/Composite DOQQ - acquisition dates: 1994	EDR
2005	Aerial Photograph. Scale: 1"=604'	Flight Year: 2005	EDR

INQUIRY #: 3178038.4

YEAR: 1927

= 1000'

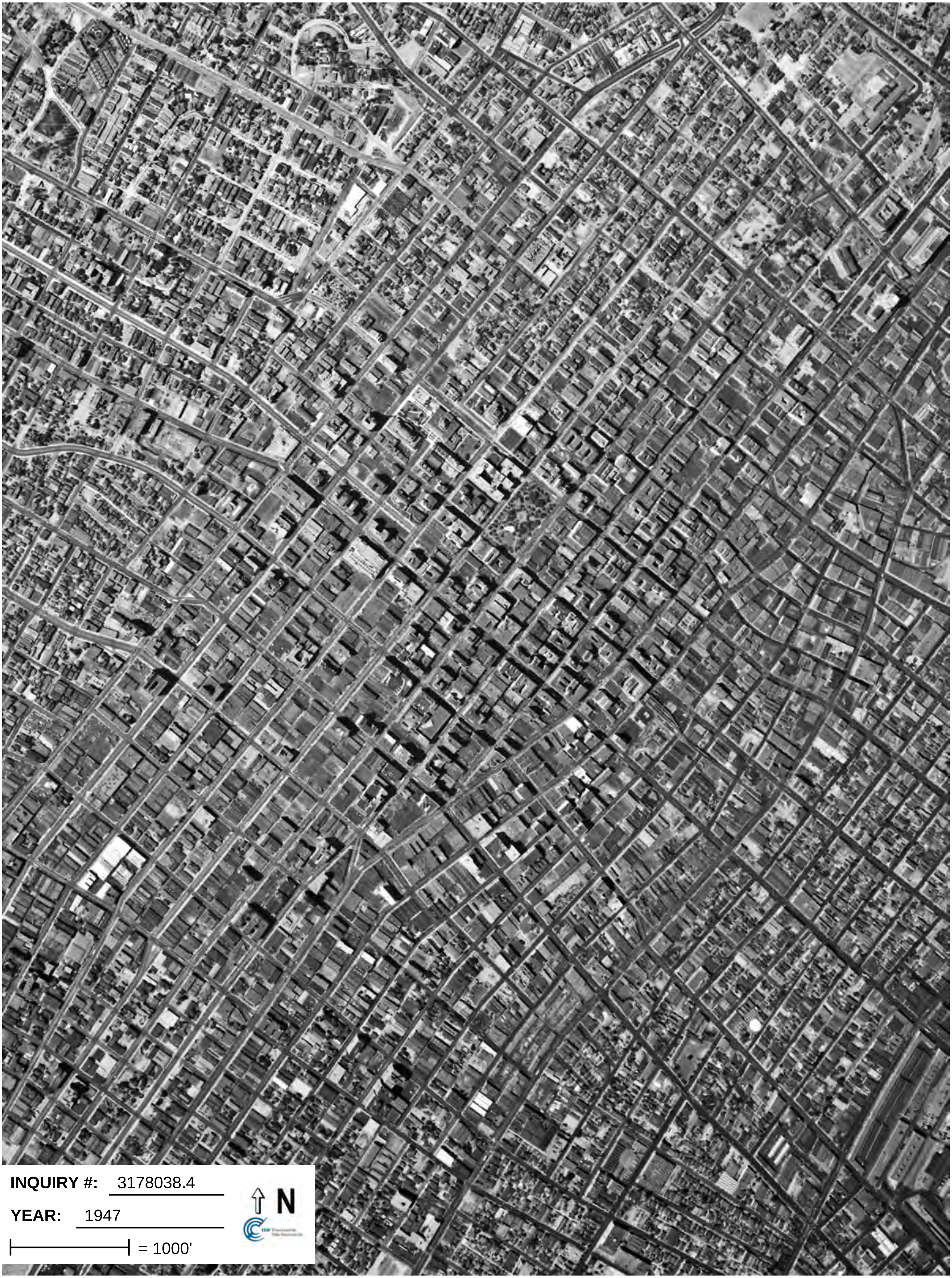
N

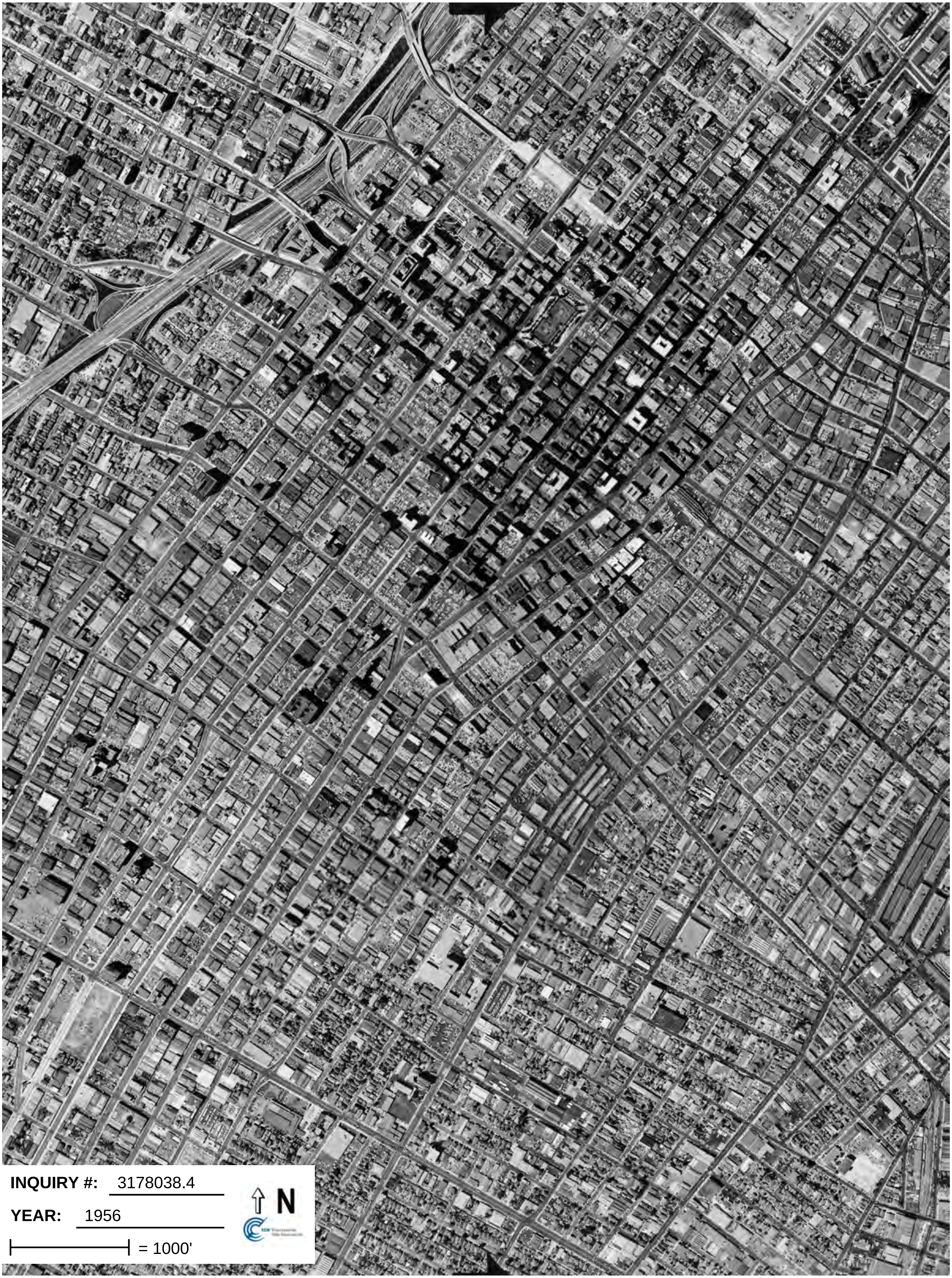
INQUIRY #: 3178038.4

YEAR: 1938

= 1000'

N


INQUIRY #: 3178038.4
YEAR: 1947
= 1000'
N

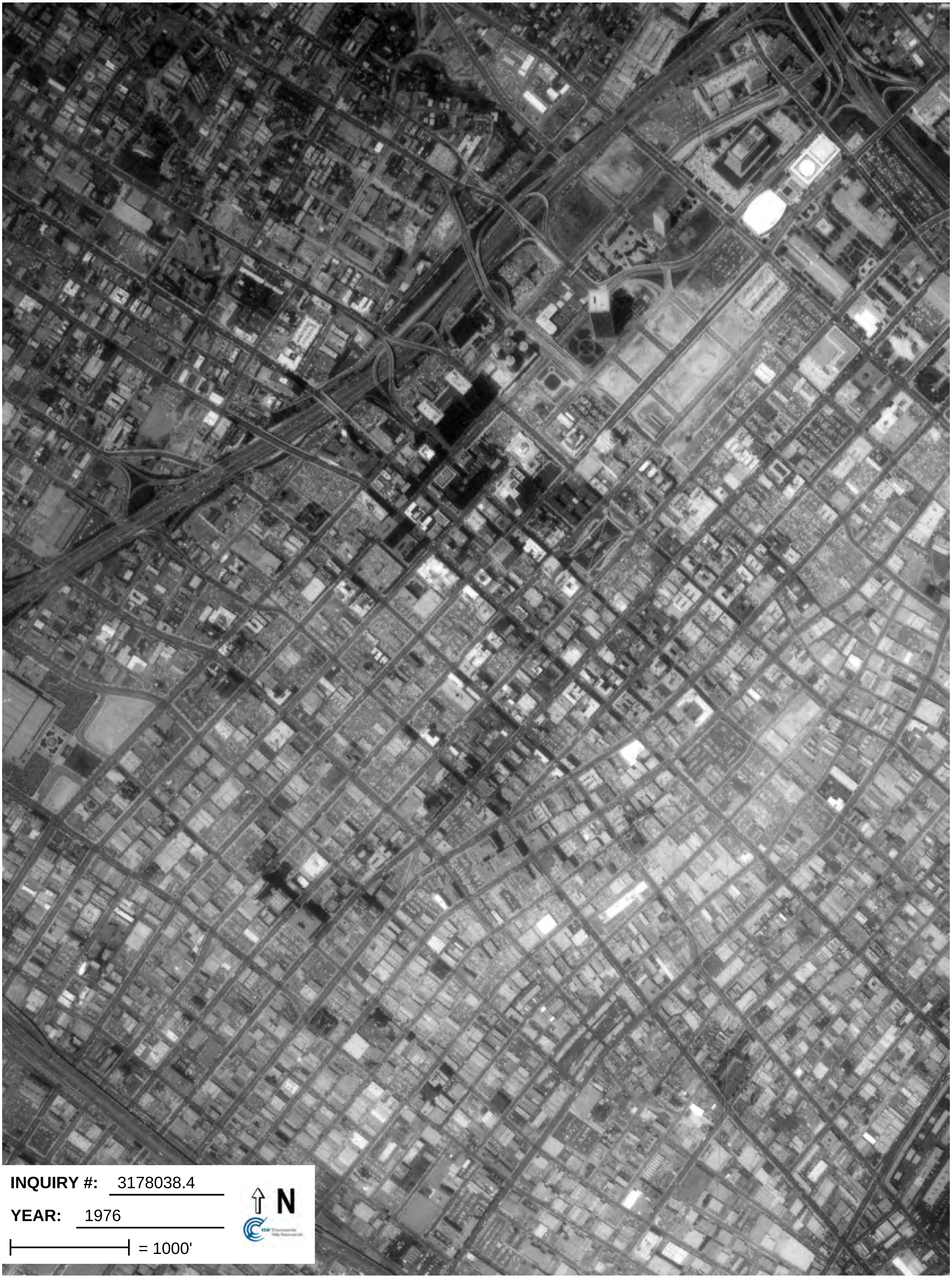

INQUIRY #: 3178038.4
YEAR: 1956
= 1000'
N

INQUIRY #: 3178038.4

YEAR: 1965

= 1000'

N


INQUIRY #: 3178038.4
YEAR: 1976
= 1000'
N

INQUIRY #: 3178038.4

YEAR: 1989

= 1000'

N


INQUIRY #: 3178038.4
YEAR: 1994
= 604'
N


INQUIRY #: 3178038.4
YEAR: 2005
= 604'
N

Appendix G
Archaeological Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles and Paleontology Correspondence

ARCHAEOLOGICAL RESOURCES TECHNICAL REPORT FOR THE RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

PREPARED FOR:

City of Los Angeles Department of Public Works
Bureau of Engineering
1149 S. Broadway, Suite 700
Los Angeles, CA 90015-2213

PREPARED BY:

ICF International
601 W. Fifth Street, Suite 900
Los Angeles, CA 90071
Contact: Mark Robinson
213.312.1800

January 2016

ICF International. 2016. *Archaeological Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles.* January. (ICF 00646.11.) Los Angeles, CA. Prepared for City of Los Angeles, Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

List of Tables ... iii
List of Figures ... iii
List of Acronyms and Abbreviations ... iv

Summary ... S-1
Introduction ... 1
Project Description ... 2
Introduction ... 2
Project Alternatives ... 5
Alternative 1 – No Project Alternative ... 5
Alternative 2 – 7th Street with Grand Avenue Extension ... 5
Alternative 3 – 7th Street without Grand Avenue Extension ... 5
Alternative 4 – 9th Street with Grand Avenue Extension ... 5
Alternative 5 – 9th Street without Grand Avenue Extension ... 5
Elements of the Streetcar Alternatives ... 6
Vehicles ... 6
Platforms ... 6
Support Facilities ... 6
Overhead Contact System ... 6
Traction Power Substations ... 7
Maintenance and Storage Facility ... 7
Signaling ... 8
Potential Layover Locations ... 8
Construction Activities ... 8
Regulatory Setting ... 10
Section 106 of the National Historic Preservation Act ... 10
National Register Criteria for Evaluation ... 11
California Environmental Quality Act ... 11
State Health and Safety Code Section 7050.5 and California Public Resources Code, Section 5097.9 ... 12
Los Angeles Municipal Code ... 12
Los Angeles CEQA Thresholds ... 13
Archaeological Resources ... 13
Setting ... 14

Area of Potential Effect 14
Environmental Setting 14
Prehistoric Human Occupation 14
Native American Ethnographic Background 16
Historical Background 17
Methods 18
Literature and Records Search 18
Sacred Lands Files Search 19
Field Survey 22
Results and Recommendations 23
Professional Qualifications 24
References Cited 25

Appendix A Native American Correspondence

Tables

1 Summary of Native American Contacts 20

Figures

1 Regional Location Map 3

2 Proposed Downtown Los Angeles Streetcar Route 4

3 Preliminary Area of Potential Effects 15

Acronyms and Abbreviations

AC	alternating current
ADA	Americans with Disabilities Act
APE	Area of Potential Effect
B.P.	before present
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Los Angeles
CRHR	California Register of Historical Resources
DASH	Downtown Area Short Hop
DC	direct current
EIR	Environmental Impact Report
FTA	Federal Transit Administration
Greenbook	*Standard Specification for Public Works Construction*
HSC	Health and Safety Code
ICF	ICF International
LABOE	City of Los Angeles, Department of Public Works, Bureau of Engineering
LADOT	Los Angeles Department of Transportation
LAMC	Los Angeles Municipal Code
LASI	Los Angeles Streetcar Inc.
Metro	Los Angeles County Metropolitan Transportation Authority
mph	miles per hour
MSF	maintenance and storage facility
MWD	Metropolitan Water District
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OCS	overhead contact system
PRC	Public Resources Code
Project	Restoration of Historic Streetcar Service in Downtown Los Angeles
SCCIC	South Central Coastal Information Center
SHPO	State Historic Preservation Officer
TPSS	traction power substations
U.S.C.	United States Code

Summary

The Restoration of Historic Streetcar Service in Downtown Los Angeles (Project) consists of the construction and operation of a streetcar line in downtown Los Angeles, California along a 3.8-mile loop.

The project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide an alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street.

The route would traverse an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would travel through several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center. This dense urban area is the region's largest employment center and one of the region's largest tourist destinations, and it has a rapidly growing residential population. Streetcar stops would be located approximately every block in the north/south direction and approximately every other block in the east/west direction. Figure 1 depicts the regional location of the Project.

This Archaeological Resources Technical Report was prepared for the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) for the proposed Project. It presents the results of an archaeological resources study conducted by ICF International (ICF) to meet standards outlined in the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA).

The City of Los Angeles (City) is the lead agency for the Project under CEQA. The project is being sponsored with the cooperation of the LABOE, the Los Angeles Department of Transportation (LADOT), the Los Angeles County Metropolitan Transportation Authority (Metro), and Los Angeles Streetcar Inc. (LASI). Funding assistance is also being sought from the Federal Transit Administration (FTA).

A cultural resources records search was conducted to identify archaeological sites located within the Project's Area of Potential Effect (APE) and within a 0.25-mile buffer around the APE. The records search was conducted by the South Central Coastal Information Center (SCCIC) on August 20, 2012. Results of the records search indicate that 19 cultural resource studies have been conducted within the project APE. The entire APE, consisting of a 7th Street Alternative and a 9th Street Alternative, has been previously surveyed and one archaeological resource, 19-003129, is recorded within the APE. The site is located outside of the proposed alignment and does not overlap proposed project work areas. Four additional archaeological sites (19-002741, 19-003097, 19-003347, and 19-004114) are recorded within a 0.25-mile radius of the APE. As these sites are located outside of the proposed project work areas, they would not be affected by the proposed Project.

A search of the Native American Heritage Commission's (NAHC) Sacred Lands Files was requested for the project (see Appendix A). Results of the search indicate the presence of Native American sacred places and/or sites in the vicinity of the APE, specifically a prehistoric Native American cemetery found during construction of the Metropolitan Water District (MWD) Headquarters. This area is 0.42 mile northeast of the APE, outside of all proposed project activities, and would not be affected by the Project. The NAHC provided a list of 10 tribes and individuals who may have knowledge of cultural resources in or near the APE and recommended contacting the people on the list. Letters were sent by the FTA to these 10 contacts on July 1, 2013. Follow-up phone calls were made on August 20 and August 27, 2013. Details of this contact effort are provided in Appendix A.

A review of aerial maps indicates that the APE has been heavily altered by the construction and urbanization of downtown Los Angeles and the natural ground surface is not visible. Because the natural ground surface is not visible, an archaeological field survey was not conducted. However, a historical resources survey was conducted and the results of that survey can be found in the Project's *Historic Resources Technical Report*. The lack of archaeological resources identified within the APE does not preclude the possibility of identifying subsurface archaeological material during construction activities. However, due to the heavy subsurface disturbance caused by previous construction—including the construction and installation of utilities, roads, and skyscrapers—the likelihood of encountering intact, subsurface archaeological material is low. If cultural materials are discovered during construction, ICF recommends that all earth-moving activity within and around the immediate discovery area be diverted until a qualified archaeologist can assess the nature and significance of the find. If the resources are determined to be significant, further treatment may include avoidance or data recovery activities.

If human remains are discovered, California Health and Safety Code (HSC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner shall be contacted. Pursuant to Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendant. Further provisions of PRC 5097.98 are to be followed as applicable.

Introduction

ICF conducted an archaeological resources study for Project's APE in compliance with NHPA and CEQA. This report discusses the findings of that study. The study included an archaeological resources records search and NAHC Sacred Lands File search. An Environmental Impact Report (EIR) will be prepared to analyze five project alternatives: a No Project Alternative, and four possible streetcar routes for the Project.

The five Alternatives are:

- No Project
- 7th Street Alternative with Grand Avenue Extension
- 7th Street Alternative without Grand Avenue Extension
- 9th Street Alternative with Grand Avenue Extension
- 9th Street Alternative without Grand Avenue Extension

The City is the lead agency for the Project under CEQA. The project is being sponsored with the cooperation of LABOE, LADOT, Metro, and LASI. Funding assistance is also being sought from the FTA.

Introduction

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along an up to 3.8-mile route. The project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The Project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center.

Figure 1 depicts the regional location of the Project. Figure 2 shows the Project's routing within downtown Los Angeles.

Figure 1. Regional Location Map

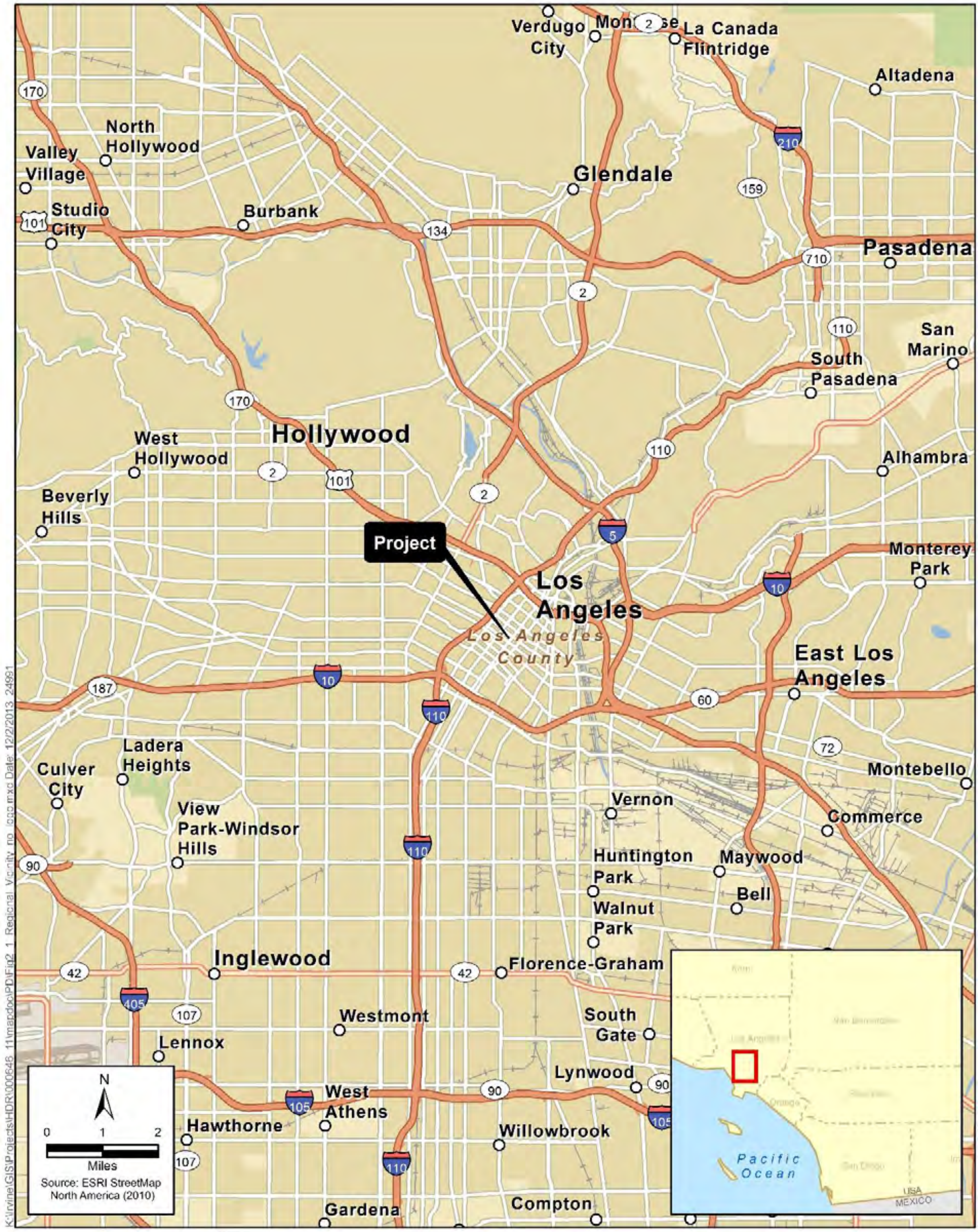
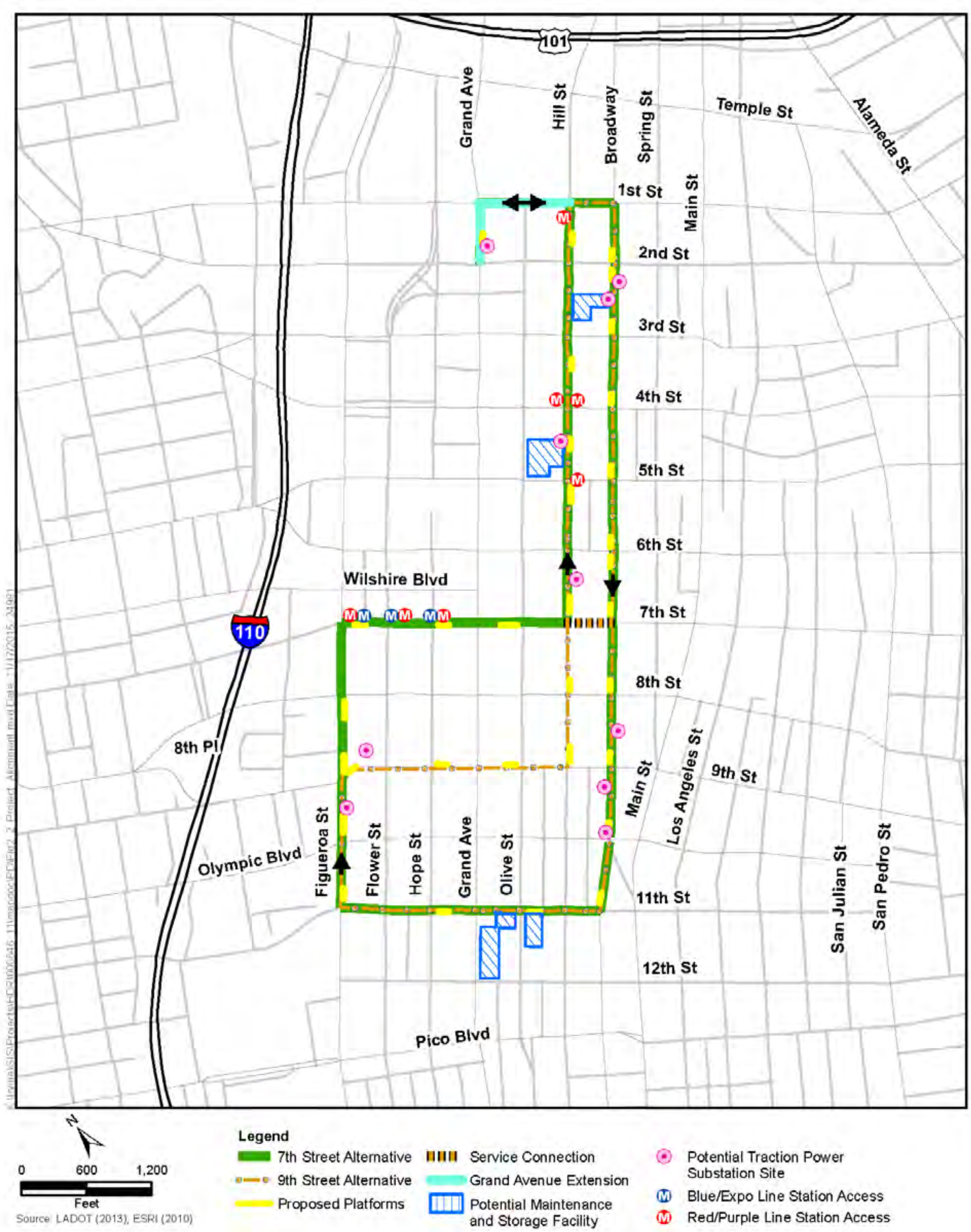


Figure 2. Proposed Downtown Los Angeles Streetcar Route



The track and roadway configuration would allow for a mixed flow of vehicles and a fleet of electrically powered streetcars. Power to the streetcar vehicles would be provided by approximately five traction power substations (TPSSs) and an overhead contact system (OCS). A maintenance and storage facility (MSF) site would also be constructed as part of the Project.

Project Alternatives

Five project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative.

Alternative 1 – No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the project study area that would remain if the proposed Project would not occur.

Alternative 2 – 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

Alternative 3 – 7th Street without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the Project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

Alternative 5 – 9th Street without Grand Avenue Extension

Alternative 5 would follow the same alignment as Alternative 3, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

Elements of the Streetcar Alternatives

A brief overview of the elements common to all build alternatives of the Project is presented below.

Vehicles

The Project's operating plan calls for 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate on the system. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 80 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. Examples of similar streetcars can be found in Portland, Oregon; both Tacoma and Seattle, Washington; Tucson, Arizona; Dallas, Texas; Atlanta, Georgia; and Charlotte, North Carolina. The streetcars would be designed with low floors to be compliant with the Americans with Disabilities Act (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 miles per hour (mph) on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks.

Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by buses operated by Metro, LADOT Downtown Area Short Hop (DASH), and other regional operators. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to shorter lengths. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

Support Facilities

Overhead Contact System

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site specific and be made based upon engineering design and aesthetic considerations. Either of these configurations could use decorative poles chosen to be consistent with the streetscape along the project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or 7th Streets, 9th or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide direct current (DC) power for the streetcars; the final number and placement will be determined by further project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial alternating current (AC) power to 750-volt DC power for the streetcars.

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible.

Maintenance and Storage Facility

The Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

Four sites are currently being considered as a potential location for the MSF: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets. All four candidate sites are currently being used as parking lots. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for the MSF site would be required. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and secure storage of streetcar vehicles.

Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. "Line-of-sight" operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary where the streetcar would require a special traffic signal phase to maneuver so as to avoid conflicts with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have separate transit signals. Where they are needed, operation of transit signals would be separated from the normal traffic signals in order to not confuse the general public.

Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue north of 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles would have operator cabs on both ends of the cars so that they would be able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential second layover sites. Should Alternative 3 or 5 be ultimately selected, two of these locations may be needed. At each of these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

Construction Activities

Construction activities associated with the Project would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include: (a) pavement removal, (b) utility relocation, (c) excavation, (d) construction of track drains, (e) installation of concrete track slab and rails, (f) construction of station platforms, (g) installation of special track work units, (h) reconstruction of ramps and sidewalks, (i) paving, and (j) striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations.

Laydown and storage area(s) for construction would be established near the project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have currently been identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th and 9th Streets. These should be regarded as example sites; other locations within the study area may become available and could also be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the Project alignment.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with Los Angeles Municipal Code (LAMC) 41.40(a). To expedite construction, certain construction activities may be permitted to occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. Construction activities will be required to follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; *California Manual on Uniform Traffic Control Devices*; and all City bureaus' design manuals, special provisions, and standard plans, including the latest *Standard Specification for Public Works Construction* (Greenbook); the LABOE's Brown Book; the *Work Area Traffic Control Handbook*; and any FTA requirements.

Section 106 of the National Historic Preservation Act

The NHPA of 1966, as amended (16 United States Code [U.S.C.] 470 et seq.), is the primary federal legislation that outlines the federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 Code of Federal Regulations (CFR) Part 800 describe the process that the federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking would have on historic properties. An undertaking is defined as a "project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency (Section 301(7) 16 U.S.C. 470w(7)).

Cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Those cultural resources that are listed on, or are eligible for inclusion in, the National Register of Historic Places (NRHP) are referred to as *historic properties*. The criteria for NRHP eligibility are outlined at 36 CFR Part 60. Other applicable federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act.

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the APE, determine if historic properties are present within the APE, and assess the effects the undertaking would have on historic properties. Section 106 requires consultation with Indian Tribes concerning the identification of sites of religious or cultural significance and with individuals or groups who are entitled, or requested, to be consulting parties. The regulations at 36 CFR Part 800.5 require federal agencies to apply the criterion of adverse effect to the historic properties identified within the APE. The criterion of adverse effect, defined at 36 CFR Part 800.5(a)(1), states:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Officer (SHPO) to provide an opportunity to comment on, and concur with, the eligibility determinations. If the undertaking would result in adverse effects on historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, archaeological site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archaeology, engineering, and culture:

(A) be associated with events that have made a significant contribution to the broad patterns of history;

(B) be associated with the lives of people significant in our past;

(C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction;

(D) have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in history or prehistory in order to be considered for listing under Criterion A. The specific association of the property, itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties, especially archaeological sites that have the potential to answer, in whole or in part, important research questions about human history or prehistory that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to prehistory and history (National Register Bulletin 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

California Environmental Quality Act

The proposed Project is governed by CEQA. In accordance with PRC §21084.1, the proposed Project would have a significant adverse environmental impact if it "causes a substantial or potentially substantial adverse change in the significance of a historical resource." As defined under state law in Title 14 California Code of Regulations (CCR) §4850, a historical resource is "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or which is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California." An historical resource is further defined under CCR §15064.5 as a "resource listed in, or determined eligible for listing in the California Register of Historical Resources (CRHR)." A resource shall be considered by the lead state agency to be historically significant under CEQA if it meets any of the following criteria for listing on the CRHR.

(A) The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) The resource is associated with the lives of persons important in our past;

(C) The resource embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or

(D) The resource has yielded, or may be likely to yield, information important in prehistory or history.

In addition, properties listed in or determined eligible for listing in the NRHP are automatically listed in the CRHR. Therefore, all historic properties under federal preservation law are automatically considered historical resources under CEQA. CCR §15064.5 (c) specifies further details regarding assessment of archaeological sites, including those that do not meet the CRHR criteria above. These sites may still be evaluated to be a "unique archaeological resource" under PRC Section 21083.2, however, this rarely happens in practice.

State Health and Safety Code Section 7050.5 and California Public Resources Code, Section 5097.9

Archaeological sites containing human remains shall be treated in accordance with the provisions of HSC Section 7050.5 and PRC Section 5097.9. Under HSC 7050.5, if human remains are discovered, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area of the discovery shall be protected, and consultation and treatment shall occur as prescribed by law. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

Los Angeles Municipal Code

The Project is located within the City of Los Angeles. City statutes and guidelines specify how historical resources, including archaeological resources, are to be managed in the context of projects such as the proposed project. Briefly, archival and field surveys must be conducted, and identified historical resources must be inventoried and evaluated in prescribed ways.

The City designates local landmarks, which it calls Historic-Cultural Monuments, and local historic districts, which it calls Historic Preservation Overlay Zones, through Ordinance Number 175891, Section 12.20.3, of the LAMC. Historic-Cultural Monuments and historic districts located within the APE are discussed in the Project's *Historic Resources Technical Report*.

Los Angeles CEQA Thresholds

The City of Los Angeles has developed thresholds for determining impact significance pursuant to CEQA (Section 21068; State CEQA Guidelines Section 15064) and has published those thresholds in the *L.A. CEQA Thresholds Guide* (2006). These thresholds (City Thresholds) are to be used to determine the significance of potential impacts resulting from or associated with the proposed Project. The *L.A. CEQA Thresholds Guide* (2006) states that the following impact significance factors shall apply to archaeological resources.

Archaeological Resources

A project would normally have a significant impact on archaeological resources if it could disturb, damage, or degrade an archaeological resource or its setting that is found to be important under the criteria of CEQA because it:

- Is associated with an event or person of recognized importance in California or American prehistory or of recognized scientific importance in prehistory;
- Can provide information that is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions;
- Has a special or particular quality, such as the oldest, best, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or
- Involves important research questions that historical research has shown can be answered only with archaeological methods.

Area of Potential Effect

This study focused on identifying archaeological resources within the Project's APE (Figure 3). The project APE consists of the area of direct impact of the four build alternatives, and parcels surrounding the alternatives that may have direct or indirect effects from project construction. The APE includes alternative MSF sites and TPSS locations as described in the *Project Description*. The vertical APE includes the depth of all ground-disturbing activities. These ground disturbing activities would extend to a depth of approximately 3–5 feet below ground surface in most areas, and a maximum depth of 30 feet below the ground's surface in limited areas for underground TPSS facilities and utility relocation.

Environmental Setting

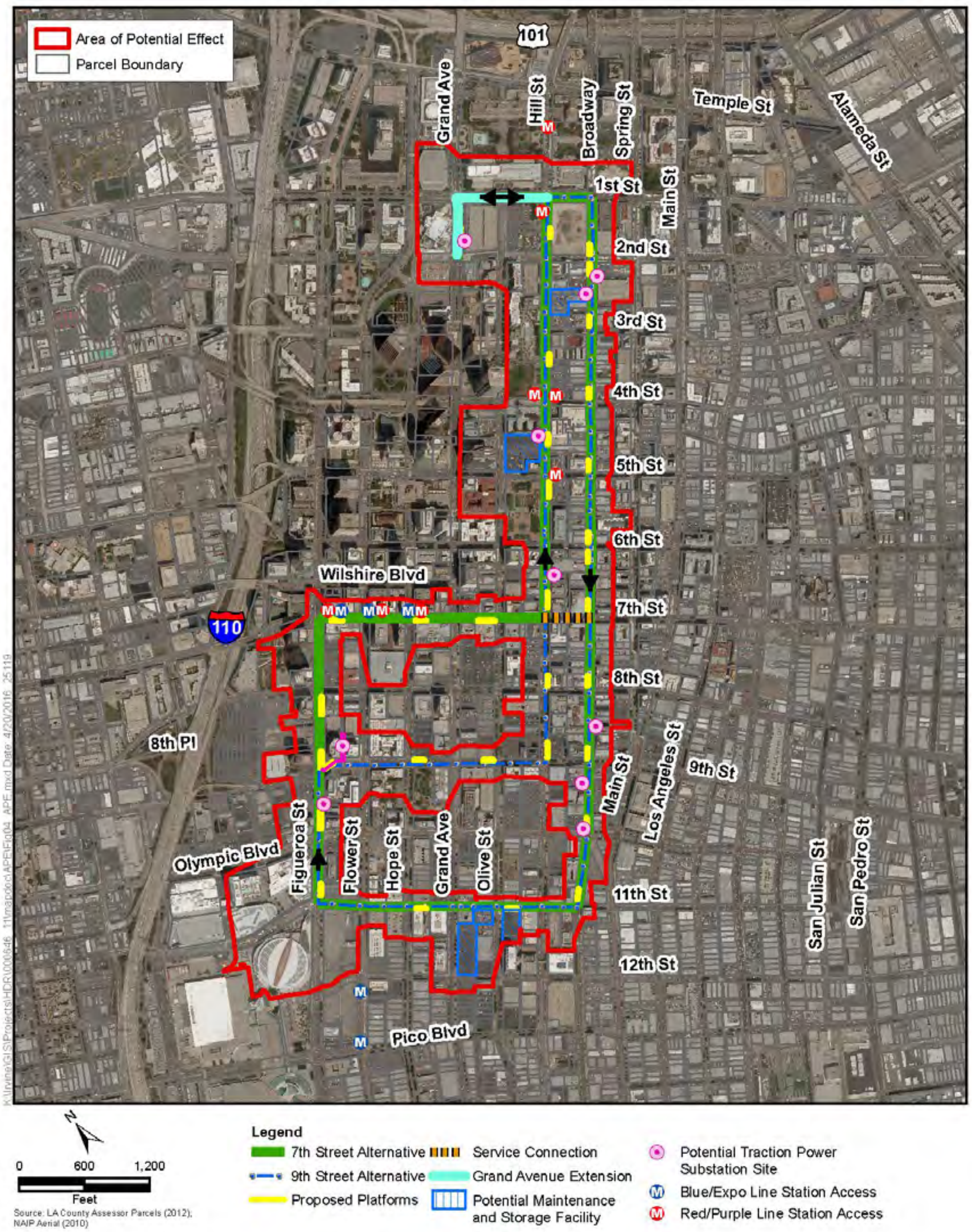
The Project is located in the heart of downtown Los Angeles, an area noted for its skyscrapers and dense urban development. This area is the region's largest employment center and a major tourist destination. The APE traverses the following areas in downtown Los Angeles, from north to south: the Civic Center, Bunker Hill, the Historic Core, the Jewelry District, the Financial Core, South Park, Fashion District, and LA Live/Convention Center, all of which are located within the Central City Community Plan, the land use element of the General Plan for the downtown area of the City. The proposed 3.8-mile project alignment, which would run along 1st Street, Broadway, 11th Street, Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street, would cover an area of mostly commercial land uses. Within the Civic Center district, many land uses are government-owned office buildings for city, state, and federal employees. In addition, there is a high concentration of historic buildings in and around the project alignment.

The natural ground surface within the APE has been completely altered by dense urbanization, including the construction of buildings, roads, and utilities. The natural ground surface is not visible within the APE and therefore was not surveyed for archaeological resources. The lack of archaeological resources on the surface does not preclude the possibility that subsurface archaeological resources may exist within the APE. However, due to heavy alteration of the ground surface, the likelihood of encountering intact prehistoric archaeological deposits is low. Remnants of built resources are more likely to be encountered in the APE, but most of these found in the past have proved to be insignificant and not eligible for the NRHP or CRHR.

Prehistoric Human Occupation

The prehistoric human occupation of southern California is divided chronologically into four temporal phases or horizons (Moratto 1984). Horizon I, or the Early Man Horizon, began at the first appearance of people in the region, at least 12,000 years ago, and continued until about 5,000 B.C. Although little is known about these people, it is assumed that they were semi-nomadic and subsisted primarily on game.

Figure 3. Preliminary Area of Potential Effects



Horizon II, also known as the Millingstone Horizon or Encinitas Tradition, began around 5,000 B.C. and continued until about 1,500 B.C. The Millingstone Horizon is characterized by widespread use of milling stones (manos and metates), core tools, and few projectile points or bone and shell artifacts. This horizon appears to represent a diversification of subsistence activities and a more sedentary settlement pattern. Archaeological evidence suggests that hunting became less important and that reliance on collecting shellfish and vegetal resources increased (Moratto 1984).

Horizon III, the Intermediate Horizon or Campbell Tradition, began around 1,500 B.C. and continued until about A.D. 600–800. Horizon III is defined by a shift from the use of milling stones to increased use of mortar and pestle, indicating a greater reliance on acorns as a food source. Projectile points become more abundant and, together with faunal remains, indicate increased use of both land and sea mammals (Moratto 1984).

Horizon IV, the Late Horizon, which began around A.D. 600–800 and terminated with the arrival of Europeans, is characterized by dense populations; diversified hunting and gathering subsistence strategies, including intensive fishing and sea mammal hunting; extensive trade networks; use of the bow and arrow; and a general cultural elaboration (Moratto 1984). The Prehistoric Period in California is considered to have ended in 1769, with settlement by the Spanish in San Diego, and the subsequent destruction of the majority Native American population.

Native American Ethnographic Background

The APE lies within Gabrielino/Tongva ethnographic territory. The term Gabrielino refers to Native American groups historically associated with the San Gabriel Mission. Gabrielino territory is not well defined, but is generally believed to incorporate the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers. It includes the entire Los Angeles Basin, the coast between Aliso Creek and Topanga Creek, and the islands of San Clemente, San Nicholas, and Santa Catalina. The ancestors of the Gabrielinos likely arrived in the Los Angeles Basin around 2500 years before present (B.P.) as part of what Kroeber (1925) referred to as the “Shoshonean Wedge.” By 1500 B.P., permanent villages were built in the lowlands along rivers and streams. Over 50 villages may have been occupied simultaneously with populations of between 50 and 200 people per village (Bean and Smith 1978).

Gabrielino houses were primarily domed, semi-subterranean, thatched structures of locally accessible materials including tule, fern, and carrizo. Principal game included deer, rabbit, fish, sea mammals, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, and other birds. Acorns were the most important single food source and villages seem to have been located near water resources necessary for the leaching of acorns. Grass seeds were the next most abundant food source. Seeds were parched, ground, and cooked as a mush in various combinations. Additional food sources included various greens, cactus pods, yucca buds, bulbs, roots, and tubers (Bean and Smith 1978). Tools for food acquisition, storage, and preparation included an inventory made from widely available materials. Hunting tools included shoulder-height bows with fire-hardened wood or stone-tipped arrows, curved throwing sticks, rabbit nets, slings, and traps. Seeds were ground with handstones on shallow basin metates. The same granites were made into mortars and pestles for pounding acorns or small game. Coiled and twined baskets and steatite bowls were used in food gathering, preparation, storage, and serving. Other utensils for food preparation included wooden food paddles, brushes, tongs, tweezers, and wooden digging sticks (Bean and Smith 1978).

Historical Background

The start of the Historic Period in California is considered to begin in 1769 with the Spanish occupation of San Diego. Mission San Gabriel was established in the Los Angeles Basin in 1771, and the Los Angeles pueblo was established as a civilian settlement on September 4, 1781. The Pueblo was located north of the project APE, in what is now the El Pueblo de Los Angeles Historical Monument. Early development of Los Angeles did not encompass the project APE. However, as agricultural development took place surrounding the Pueblo, ditches to convey water, called *zanjas,* were built across open lands, including parts of the APE. The zanjas were in use until 1885, when they were officially abandoned and filled in, replaced by piped water systems.

In 1821, Mexico won independence from Spain and subsequently became a republic. In 1833, the Mexican government secularized the missions. Although secularization was intended to distribute the mission lands to the settlers and native population, few Native Americans received land grants. The large-scale cattle ranchers, or rancheros, claimed the bulk of the resources. These cattle ranches became the driving force in the economy.

At the end of the war between Mexico and the United States in 1848, the Treaty of Guadalupe Hidalgo was signed, giving control of California to the United States. In 1850, California was admitted into the Union. On April 4, 1850, the City was incorporated as a municipality. The history of Los Angeles County through most of the nineteenth and twentieth centuries is one of remarkable urban growth. The motion picture industry and manufacturing sector created numerous jobs and supported new businesses. As a result of the opportunities created by these industries, the population of Los Angeles grew from 102,000 in 1900 to 576,000 in 1920 and 1.2 million by 1930. Today, Los Angeles is a thriving commercial center and the second largest city in the United States, with a population of nearly 4 million people.

A detailed historic background of the APE can be found in the Project's *Historic Resources Technical Report*.

Literature and Records Search

A cultural resources records search was conducted to identify archaeological sites located within the APE and within a 0.25-mile buffer of the APE. The records search was conducted by SCCIC on August 20, 2012, and the NRHP was consulted again in March 2013. The SCCIC, located at California State University Fullerton, is a branch of the California Historical Resources Information Center and maintains the State of California's official records of cultural resource studies and archaeological sites within Los Angeles and Orange Counties. In addition to archaeological site records, the SCCIC maintains copies of the following reference material.

- NRHP
- Historic Property Data Files
- CRHR
- California Historical Landmarks Database
- Los Angeles Historic-Cultural Monuments Inventory

Results of the records search indicate that 19 cultural resource studies have been conducted within the APE. The entire APE has been previously surveyed and one archaeological resource, 19-003129, is recorded within it. Archaeological site 19-003129 contains late nineteenth and early twentieth century residential refuse deposits. The site is located on both sides of North Grand Avenue, approximately 40 feet northeast of the Grand Avenue/1st Street Intersection, within the APE, but outside of the proposed alignment.

Four additional archaeological sites (19-002741, 19-003097, 19-003347, and 19-004114) are recorded within a 0.25-mile radius of the APE. These sites are located outside of the project area, and would not be affected by the proposed Project.

Archaeological site 19-002741 is a buried red brick footing or wall. It is at the corner of 3rd Street and Harlem Place, approximately 365 feet southeast of the APE.

Archaeological site 19-003097 is mid- to late nineteenth century structural remains and associated features, located approximately 405 feet east of the APE, between 1st Street and 2nd Street, southwest of Los Angeles Street.

Archaeological site 19-003347 consists of two areas of early twentieth century granite-top pavement in the vicinity of Werdin Place, approximately 300 feet north of 3rd Street. The pavement was evaluated by Monica Strauss in 2004 and found not eligible for the CRHR due to its lack of integrity (Strauss 2004). The site is approximately 450 feet southeast of the APE.

Archaeological site 19-004114 consists of historic structural foundations and refuse features. The site is located both east and west of Werdin place, north of 3rd Street and east of Main Street. The site is approximately 540 feet southeast of the APE.

A review of historic maps of the Los Angeles Zanja system[1] (Gust and Pritchard-Parker 2004) indicates that the proposed Project would cross several mapped Zanja locations. Specifically, the Project would cross Zanja #8 between 4th and 5th Streets at Hill, and at 9th Street and 11th Street at Hill. The mapped location of Zanja #8R is crossed by the Project at 7th and Flower Street, and Zanja #7 paralleled the Project along Figueroa Street between 7th Street and 11th Street. However, modern development has destroyed all surface traces of these Zanja ditches. Given the shallow nature of these water conveyance features, it is unlikely any trace of them remains buried under modern infrastructure within the APE, especially because much of modern development, location of utilities, and subway construction has occurred in many of these locations much farther below the ground surface (Gust and Pritchard-Parker 2004).

Sacred Lands Files Search

A search of the NAHC's Sacred Lands Files was requested on March 8, 2013 for the 7th Street Alternative and on May 23, 2013 for the 9th Street Alternative (Appendix A). The NAHC sent a letter to ICF on April 3, 2013, summarizing the results of the Sacred Lands search for the 7th Street Alternative. Results of the search indicate the presence of Native American sacred places and/or sites in the vicinity of the APE. The NAHC letter referenced the MWD Headquarters, located 0.42 mile northeast of the APE.

In 1999, a prehistoric Native American cemetery was found within the MWD property and adjacent Union Station parking lot. The remains of 19 individuals, 14 found in primary interments and five as cremations, were recovered during emergency excavations. These remains date to between 1000 B.P. and 130 B.P. Prehistoric artifacts found with these remains were few, but included projectile points, a steatite bowl, a basket fragment, a metate fragment, a stone pipe fragment, a bowl mortar fragment, ceramic vessel fragments, and bone awls and hairpins as well as hundreds of shell, schist, talc and jadeite beads. These burials were found at depths ranging from approximately 1.7 meters to 2.5 meters below the asphalt of the parking lot. These burials may be associated with the ethnohistoric village of *Yaan'ga.* (This site also encompasses an extensive Historic Period component.) Site CA-LAN-1575/H is located 0.42 mile outside of the APE and outside of all proposed project activities, and would not be affected by the Project.

As part of the consultation process, the NAHC recommends that local governments and project developers contact Tribal governments and individuals to determine if any cultural places might be affected by the proposed action. The NAHC provided the following list of 10 Tribes and individuals who may have knowledge of cultural resources in or near the APE and recommended contacting the people on the list.

- LA City/County Native American Indian Commission, Attn: Ron Andrade, Director
- Ti'At Society/Inter-Tribal Council of Pimu, Attn: Cindi M. Alvitre, Chairwoman-Manisar
- Tongva Ancestral Territorial Tribal Nation, Attn: John Tommy Rosas, Tribal Administrator
- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Attn: Anthony Morales, Chairperson
- Gabrielino Tongva Nation, Attn: Sam Dunlap, Cultural Resources Director

[1] The Zanja system was an early system of ditches that conveyed water to citizens for household use and irrigation, and persisted into the nineteenth century (Creason 2013).

- Gabrielino Tongva Indians of California Tribal Council, Attn: Robert F. Dorame, Tribal Chair/Cultural Resources
- Gabrielino-Tongva Tribe, Attn: Bernie Acuna, Co-Chairperson
- Gabrielino-Tongva Tribe, Attn: Linda Candelaria, Co-Chairperson
- Gabrieleno Band of Mission Indians, Attn: Andrew Salas, Chairperson
- Gabrielino-Tongva Tribe, Attn: Conrad Acuna

FTA contacted the Tribes and tribal representatives in writing on July 1, 2013. One response was received via email from Mr. John Tommy Rosas, stating that the FTA letter would be reviewed and further comments provided. Telephone calls were made to eight Native American representatives (one person does not have a phone number in the NAHC listing) on August 20, 2013. Mr. Andy Salas and Mr. Bernie Acuna requested that the original FTA letter be emailed to them, which was done on August 27, 2013. Messages requesting comment were left with the other six Native American representatives. These six individuals were called again on August 27, 2013; voice mails were left for all six requesting a return call if there were any comments or concerns regarding the Project. The details of this contact effort are provided in Table 1. Copies of written and emailed correspondence are provided in Appendix A.

Table 1. Summary of Native American Contacts

Name/Organization	Date & Type of Contact	Response
LA City/County Native American Indian Commission Ron Andrade, Director	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Commission has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Commission has any comments and concerns regarding the proposed project.
Ti'At Society/Inter-Tribal Council of Pimu Cindi M. Alvitre, Chairwoman-Manisar	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Society has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Society has any comments and concerns regarding the proposed project.
Tongva Ancestral Territorial Tribal Nation John Tommy Rosas, Tribal Administrator	Email regarding Project sent July 1, 2013 per request on NAHC contact letter	Response received July 3, 2013, via email. Mr. Rosas stated he would review the FTA letter and reply soon. No further response has been received.

Name/Organization	Date & Type of Contact	Response
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
Gabrielino Tongva Nation Sam Dunlap, Cultural Resources Director	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
Gabrielino Tongva Indians of California Tribal Council Robert F. Dorame, Tribal Chair/Cultural Resources	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
Gabrielino Tongva Tribe Bernie Acuna, Co-Chairperson	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Mr. Acuna called back on August 23, 2013, and requested that the original FTA letter be emailed to him. This was done on August 27, 2013. No further response has been received.
Gabrielino Tongva Tribe Linda Candelaria, Co-Chairperson	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
	Second phone call August 27, 2013	Left a detailed message requesting a return call if the Tribe has any comments and concerns regarding the proposed project.
Gabrieleno Band of Mission Indians Andrew Salas, Chairperson	Initial consultation letter sent July 1, 2013	No response received.
	First phone call August 20, 2013	Contacted Mr. Salas, who requested that the original FTA letter be emailed to him. This was done on August 27, 2013. No further response has been received.

Name/Organization	Date & Type of Contact	Response
Gabrielino Tongva Tribe Conrad Acuna, Co-Chairperson	Initial consultation letter sent July 1, 2013	No response received.
	No follow up phone calls could be made, as the NAHC listing for Conrad Acuna does not include a phone number	–
Source: ICF International 2015		

Field Survey

Because the APE is located within a built environment, an intensive archaeological resources survey was not conducted. Streets were inspected with a windshield survey for evidence of older curbs, pavers, or abandoned rail segments; none were observed. During the archaeological field survey, it was observed that the area is paved and developed, with few open spaces for landscape vegetation. No surficial archaeological resources were observed during the survey. The lack of archaeological resources identified within the project APE does not preclude the possibility of identifying subsurface archaeological material during construction activities. Excavation in city streets often uncovers evidence of previous American-era street development, such as utility conduits, old pavement or curbs, and rails and ties from older street rail systems that have been buried in fill and covered with asphalt. However, these items are now usually fragmentary and no longer associated with their original context; such historical cultural materials are almost always determined to not be significant. In terms of prehistoric resources, the APE has been heavily disturbed by past construction activities, including the construction and installation of utilities, roads, and skyscrapers. Therefore, the likelihood of encountering intact, subsurface prehistoric archaeological material within the APE is low. A historical resources survey was conducted and the results of that survey can be found in the Project's *Historic Resources Technical Report*.

Results and Recommendations

Results of the cultural resources records search conducted at the SCCIC indicate that one archaeological site has been identified within the APE and four additional archaeological sites have been identified within a 0.25-mile radius of the APE. The site within the APE consists of late nineteenth and early twentieth century refuse deposits located approximately 40 feet northeast of the Grand Avenue/1st Street intersection. Although the site is within the APE, it is outside the proposed alignment and it does not overlap any proposed MSF or TPSS locations. Because the site is located outside of proposed project work areas, it would not be affected by proposed project activities.

Four additional sites have been identified within a 0.25-mile radius of the APE. All four sites are outside of the APE and not located within any proposed project work area. Therefore, these sites would not be affected by proposed project activities.

The NAHC was contacted and stated that there are Native American sacred places or sites located within the vicinity of the APE. The letter received from the NAHC referenced prehistoric site CA-LAN-1575, located 0.42 mile northeast of the APE. Site CA-LAN-1575 contains a Native American cemetery. Because CA-LAN-1575 is outside the APE and outside of all proposed project activities, the site would not be affected by the Project. The NAHC recommends that local governments and project developers contact local Tribal governments and individuals, as they may have more information on sacred sites in the vicinity of the project APE. Native Americans were contacted by letter and follow up telephone calls; no comments have been received.

The entire APE has been heavily altered by the construction and urbanization of downtown Los Angeles, and the natural ground surface is not visible. Per standard procedure in such situations, a team of archaeologists drove the alignments and inspected the streets for any evidence of older curbs, pavers, or abandoned rail segments. Because the natural ground surface is not visible, a pedestrian archaeological field survey was not conducted. No resources were observed. The lack of archaeological resources identified within the project APE does not preclude the possibility of identifying subsurface archaeological material during construction activities. Excavation in city streets often uncovers evidence of previous American-era street development, such as utility conduits, old pavement or curbs, and rails and ties from older street rail systems that have been buried in fill and covered with asphalt. However, these items are now usually fragmentary and no longer associated with their original context; such historical cultural materials are almost always determined to not be significant. In terms of prehistoric resources, the APE has been heavily disturbed by past construction activities, including the construction and installation of utilities, roads, and skyscrapers. Therefore, the likelihood of encountering intact, subsurface prehistoric archaeological material within the APE is low.

Due to the lack of known resources in the project APE and a low potential for discovery of significant archaeological resources, the proposed Project would not have an impact on archaeological resources. The ICF survey and research did not result in the identification of any surficial prehistoric or historic archaeological sites or features. Possible archaeological discoveries during the project would be addressed as specified in LABOE's Greenbook (2009).

If any prehistoric or historical cultural materials are discovered during construction, it is required that all earth-moving activity within and around the immediate discovery area be diverted until a qualified archaeologist can assess the nature and significance of the find. If the resource is determined to be significant, further treatment may include avoidance or data recovery activities. If only particular types of historical features, such as abandoned rails, prove to be common in the project work area during excavation and grading, the project archaeologist and project manager should establish that the archaeologist inspect these finds only briefly. For example, during the removal of a length of ties, the archaeologist need only inspect the area once a day. However, if numerous types of discoveries are being made, full-time archaeological monitoring may be necessary to protect the resources and avoid the inefficiency of repeated archaeologist visits.

If human remains are discovered, HSC Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner shall be contacted. Pursuant to PRC Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC who will then notify the Most Likely Descendant. Further provisions of PRC 5097.98 are to be followed as applicable.

Professional Qualifications

Shelly Long prepared this archaeological study report. Long has a Master of Arts degree in Public Archaeology and more than 10 years of experience working on archaeological field projects in Southern California. She meets the Secretary of the Interior's Standards for Professional Qualifications in Archaeology as a Principal Investigator and meets the State Personnel Board Specifications as an Associate Archaeologist.

Mark Robinson reviewed this report. Robinson has a Master of Science degree in Anthropology and over 30 years of experience working in the field of archaeology. He meets the Secretary of the Interior's Standards for Professional Qualifications in Archaeology as a Principal Investigator and meets the State Personnel Board Specifications as an Associate Archaeologist.

References Cited

Bean, L. J., and C. R. Smith

1978 Gabrielino. In *Handbook of North American Indians*, Vol. 8, California, R. F. Heizer (ed.), pp. 538–549. Washington, D.C.: Smithsonian Institution.

Building News

2009 *Greenbook Standard Specifications for Public Works Construction*

Creason, Glen

2013 *CityDig: Map No. 178: The Zanja Madre in 1868.* Los Angeles Magazine CityThink Blog. Available: http://www.lamag.com/citythinkblog/citydig-map-no-178-the-zanja-madre-in-1868/. Accessed: July 15, 2013.

Gust, Sherri and Mari Pritchard-Parker

2004 *Relationship of the Zanja Madre to MTA's Gold Line Property in River Station Yard, City of Los Angeles, California.* Submitted to UltraSystems Environmental, Inc., Irvine, California and Metropolitan Transportation Authority, Los Angeles, California. Prepared by Cogstone Resources Management Inc., Santa Ana, California. Report on file, South Central Coastal Information Center, California State University, Fullerton, California.

Kroeber, Alfred

1925 *Handbook of the Indians of California.* Bulletin 78, American Bureau of Ethnology. Reprinted in 1976. NY: Dover Publications, Inc.

Moratto, Michael J.

1984 *California Archaeology*. Orlando, FL: Academic Press.

Strauss, Monica

2004 *Archaeological Resources Assessment for the Proposed Public Safety Facilities Master Plan Project, City of Los Angeles, California.* Report on File: EDAW, Inc. Los Angeles, California.

Appendix A

Native American Correspondence

Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information
Return to CNAHC Home Page

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Los Angeles Street Car Project

County Los Angeles

USGS Quadrangle

Name Hollywood 7.5 and Los Angeles 7.5""

Township 1S Range 13W Section(s) N/A (unsectioned)

Company/Firm/Agency: ICF International

Contact Person: Shelly Long

Street Address: 601 W. Fifth Street, Suite 900

City: Los Angeles Zip: 90071

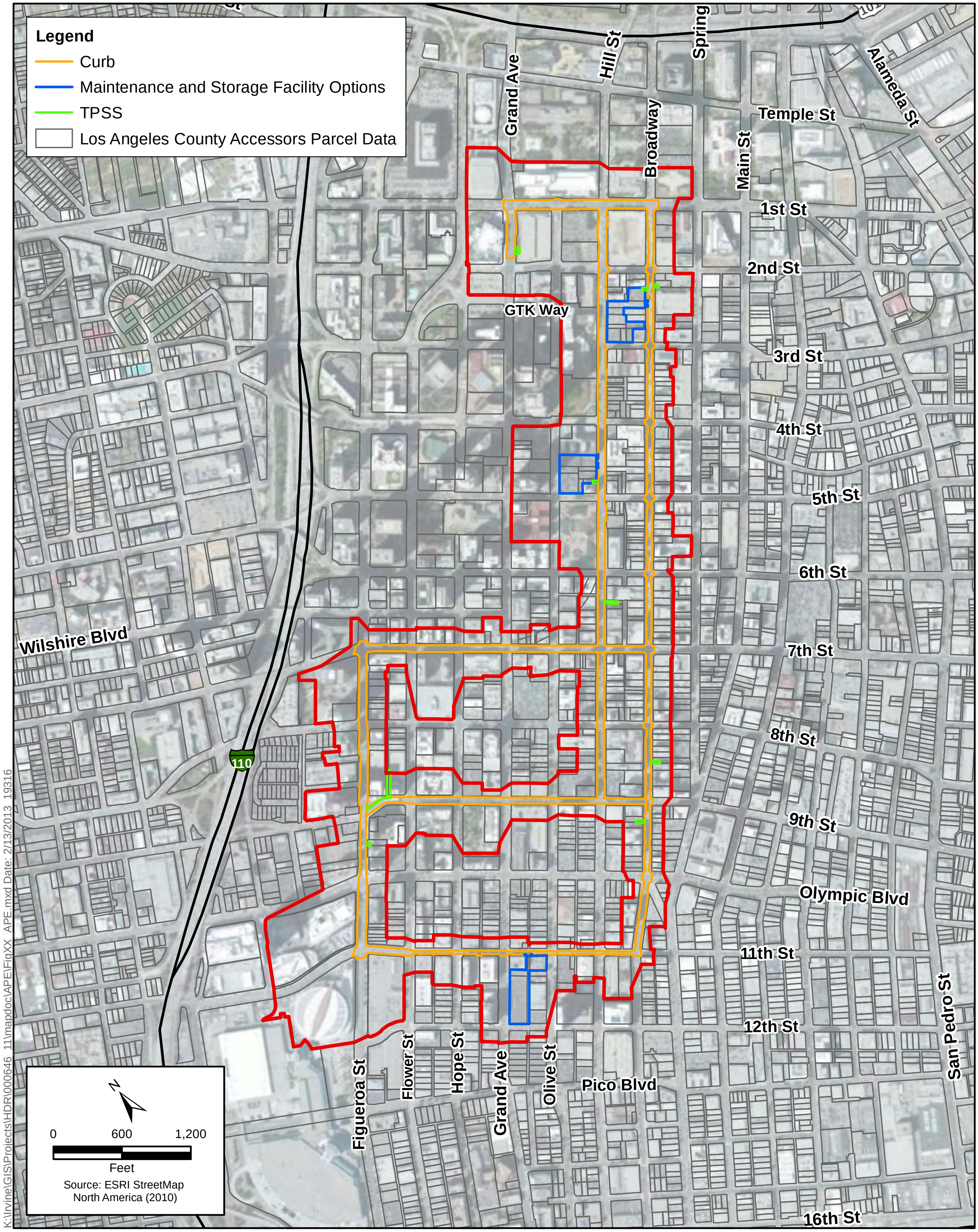
Phone: 818-326-6149 (cell)

Fax: 213-312-1767

Email: MLong@ICFI.com

Project Description:

The Los Angeles Streetcar Project is a 3.8 mile single looped track system that will operate from Grand Avenue at 2nd Street, north to 1st Street, east to Broadway, south to 11th Street, west to Figueroa, then north on Figueroa from 11th Street to 7th Street. It will continue east on 7th Street to Hill Street, where it will turn north to 1st Street, then west to Grand Avenue to 2nd Street to complete the loop.



Restoration of Historic Streetcar Service in Downtown Los Angeles

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
www.nahc.ca.gov
e-mail: ds_nahc@pacbell.net

April 2, 2013

Ms. Michelle Long, M.A., RPA, Archaeologist
ICF INTERNATIONAL
601 West Fifth Street, Suite 900
Los Angeles, CA 90071

Sent by
FAX to: 213-312-1767
No. of Pages: 3

Re: Request for Sacred Lands File Search and Native American Contacts list for the "Los Angeles Street Car Project;" located in the City of Los Angeles (Downtown); Los Angeles County, California

Dear Ms. Long:

A record search of the NAHC Sacred Lands File did indicate the presence of Native American sacred places/site in the area you identified by the USGS coordinates, the Area of Potential Effect (APE) (the area in the vicinity of the Metropolitan Water District Headquarters). Also, the absence of archaeological or cultural resources does not preclude their existence. Other data sources for Native American sacred places/sites should also be contacted. A Native American tribe of individual may be the only sources of presence of traditional cultural places or sites.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, individuals/organization who may have knowledge of cultural resources in or near the project area. As part of the consultation process, the NAHC recommends that local governments and project developers contact the tribal governments and individuals to determine if any cultural places might be impacted by the proposed action. If a response is not received in two weeks of notification the NAHC requests that a follow telephone call be made to ensure that the project information ahs been received.

If you have any questions or need additional information, please contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Enclosures

Native American Contacts
Los Angeles County
April 2, 2013

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Gabrielino Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net

(909) 262-9351 - cell

Ti'At Society/Inter-Tribal Council of Pimu
Cindi M. Alvitre, Chairwoman-Manisar
3094 Mace Avenue, Apt. B Gabrielino
Costa Mesa, , CA 92626
calvitre@yahoo.com
(714) 504-2468 Cell

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
Private Address Gabrielino Tongva
,
tattnlaw@gmail.com
310-570-6567

Gabrielino-Tongva Tribe
Bernie Acuna, Co-Chairperson
P.O. Box 180 Gabrielino
Bonsall , CA 92003
(619) 294-6660-work
(310) 428-5690 - cell
(760) 636-0854- FAX
bacuna1@gabrieinotribe.org

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
P.O. Box 180 Gabrielino
Bonsall , CA 92003
palmsprings9@yahoo.com
626-676-1184- cell
(760) 636-0854 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Los Angeles Historic Street Car Project; located in Downtown Los Angeles; Los Angeles County, Californiafor which a Sacred Lands File search and Native American Contacts list were requested.

Native American Contacts
Los Angeles County
April 2, 2013

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 — Gabrielino
Covina , CA 91723
(626) 926-4131
gabrielenoindians@yahoo.com

Gabrielino-Tongva Tribe
Conrad Acuna,
P.O. Box 180 — Gabrielino
Bonsall , CA 92003

760-636-0854 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Los Angeles Historic Street Car Project; located in Downtown Los Angeles; Los Angeles County, Californiafor which a Sacred Lands File search and Native American Contacts list were requested.

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Ron Andrade, Director
LA City/County Native American Indian Commission
3175 West 6th St, Rm. 403
Los Angeles 90020

RE: Cultural and Historic Resources Consultation for the Restoration of Historic Streetcar Service in Downtown Los Angeles Project

Dear Mr. Andrade:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage

power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
Federal Transit Administration

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. John Tommy Rosas, Tribal Administrator
Tongva Ancestral Territorial Tribal Nation
tattnlaw@gmail.com

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Rosas:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage

power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Salas:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage

power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Ms. Cindi M. Alvitre, Chairwoman-Manisar
Ti'At Society/Inter-Tribal Council of Pimu
3094 Mace Avenue, Apt. B
Costa Mesa, CA 92626

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Ms. Alvitre:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power

substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Anthony Morales, Chairperson
Gabrielino/Tongva San Gabriel Band of Mission
PO Box 693
San Gabriel, CA 91778

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Morales:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power

substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Conrad Acuna
Gabrielino-Tongva Tribe
P.O. Box 180
Bonsall, CA 92003

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Acuna:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power

substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Ms. Linda Candelaria, Co-Chairperson
Gabrielino-Tongva Tribe
P.O. Box 180
Bonsall, CA 92003

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Ms. Candelaria:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage

power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Bernie Acuna, Co-Chairperson
Gabrielino-Tongva Tribe
P.O. Box 180
Bonsall, CA 92003

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Acuna:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power substations (TPSS) and an overhead contact system. The TPSS would convert high voltage

power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
Federal Transit Administration

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Robert F. Dorame, Tribal Chair/Cultural Resources
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

RE: Cultural and Historic Resources Consultation for the Restoration of Historic Streetcar Service in Downtown Los Angeles Project

Dear Mr. Dorame:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power

substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

JUL 1 2013

Mr. Sam Dunlap, Cultural Resources Director
Gabrielino Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

RE: Cultural and Historic Resources Consultation
for the Restoration of Historic Streetcar Service
in Downtown Los Angeles Project

Dear Mr. Dunlap:

The City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) in partnership with the Los Angeles County Metropolitan Transportation Authority (LACMTA) and in coordination with Federal Transit Administration (FTA) are conducting research for the proposed Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project). The Project entails the construction and operation of a streetcar system that would run a fleet of electric-powered vehicles along a one-way loop within existing traffic lanes in Downtown Los Angeles.

The Environmental Impact Report/Environmental Assessment will analyze two build alternatives and a no-build alternative. The Locally Preferred Alternative (LPA) would run within existing traffic lanes on 1st Street, Broadway, 11th Street, South Figueroa Street, Grand Avenue, 7th Street or 9th Street, and Hill Street. The project alignment would begin and terminate on Grand Avenue, one block south of 1st Street. From that point, the streetcar would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar would turn southbound, traveling 1.25 miles south along Broadway, and then turning westbound on 11th Street. The streetcar would then turn north on South Figueroa Street and travel 0.5 miles north to 7th Street where it would turn in the eastbound direction. From 7th Street, the streetcar would turn northbound on Hill Street, continue north back to 1st Street. It would then turn westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue south of 1st Street, by the Disney Concert Hall.

The Project is also considering the 9th Street Alternative, which would follow the same alignment as the LPA but would run eastbound on 9th Street between South Figueroa Street and Hill Street rather than 7th Street. A copy of the Project Location Map is enclosed for your reference. Additional information on the project may be found on the project website at: http://www.metro.net/projects/historic-streetcar-service/.

The streetcar system would run a fleet of electric-powered vehicles using a track and roadway configuration that allow for mixed-flow operations of streetcar vehicles and automobiles. Power for the streetcar system would be provided by a traction power system featuring traction power

substations (TPSS) and an overhead contact system. The TPSS would convert high voltage power to an approximately 600-volt direct current to power the electric trains. The TPSS are approximately 20 feet long, 15 feet wide and 10 feet tall. There would be approximately five TPSS spaced evenly around the 3.8-mile loops, and possibly another TPSS at the maintenance and storage facility. Streetcar stops would typically resemble bus stops with a raised platform along sidewalks. Streetcar stops will be 70 to 120 feet long, and would generally be located along the existing sidewalk or along a sidewalk extension into the traffic lane that meets the streetcar vehicle. Streetcar stops would generally be placed on every block in the north-south direction, and on every other block in the east-west direction.

The Project requires construction of a maintenance and storage facility. Three potential sites for this facility include an approximately 39,800-square-foot site located along Broadway, midblock between 2nd Street and 3rd Street; an approximately 66,600-square-foot site at the northeast corner of 5th Street and Olive Street; and an approximately 30,500-square-foot site at the southeast corner of 11th Street and Grand Avenue.

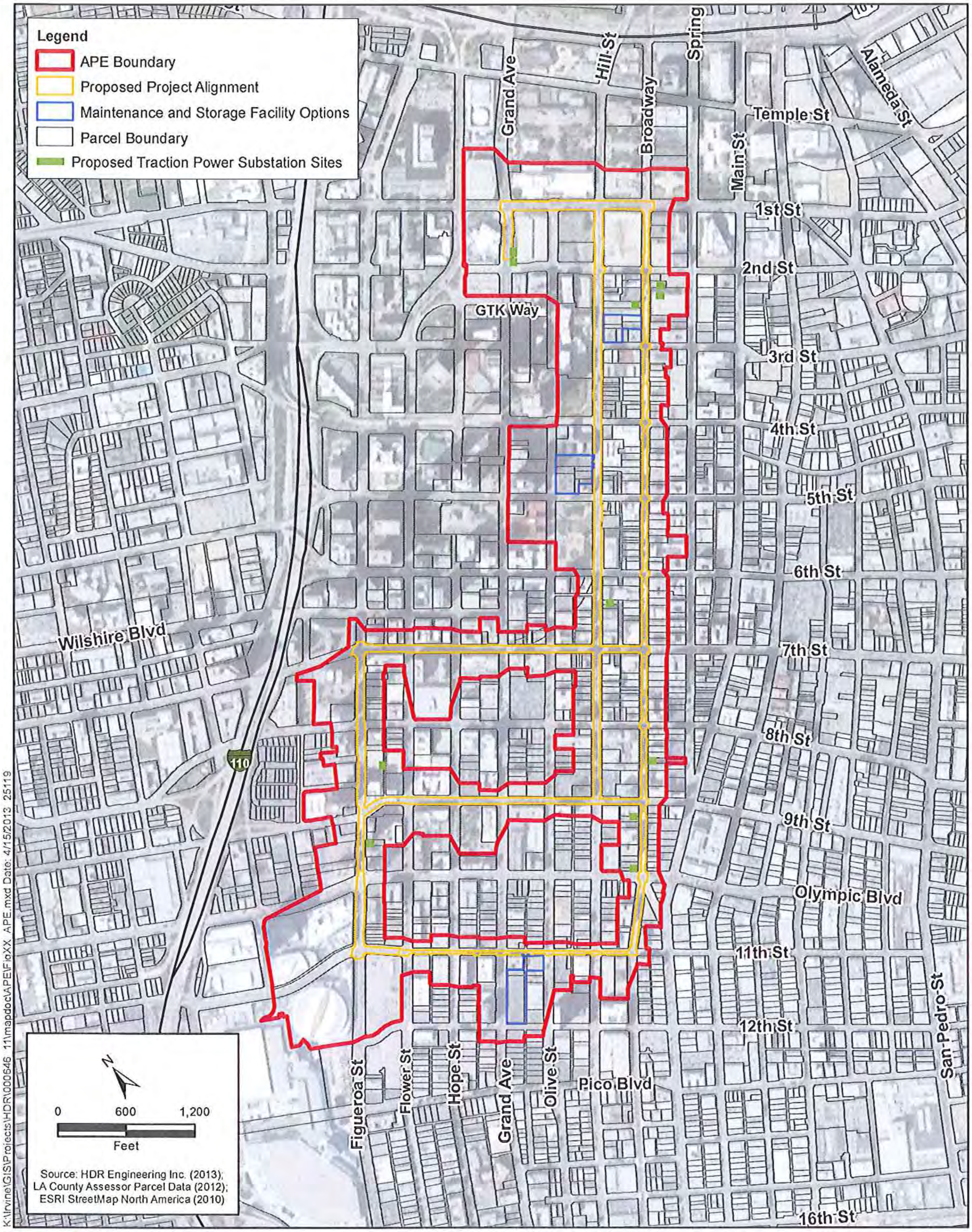
As part of our research, FTA and the City of Los Angeles, Department of Public Works, Bureau of Engineering (LABOE) are contacting interested parties to help identify prehistoric sites, sacred sites, and/or traditional cultural properties located in the vicinity of the Project Area. The Native American Heritage Commission (NAHC) has been contacted regarding the proposed project and recommended that we contact you. Please inform us if you are not the designated representative for such consultation.

If you have any information that would be relevant to this Project and its possible effect on cultural resources, or if you have any questions please contact Ms. Mary Nguyen, Environmental Protection Specialist, at (213) 202-3960, or mary.nguyen@dot.gov.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: Project Location Map



ICF INTERNATIONAL

Restoration of Historic Streetcar Service in Downtown Los Angeles

Appendix H
Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

HISTORIC RESOURCES TECHNICAL REPORT FOR THE RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

PREPARED FOR:

City of Los Angeles Department of Public Works,
Bureau of Engineering
1149 South Broadway, Suite 700
Los Angeles, CA 90015-2213

PREPARED BY:

ICF International
601 West 5th Street, Suite 900
Los Angeles, CA 90071
Contact: Jessica B. Feldman
213.312.1800

February 2016

ICF International. 2016. *Historic Resources Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles.* February. (ICF 00646.11.) Los Angeles, CA. Prepared for the City of Los Angeles Department of Public Works, Bureau of Engineering, Los Angeles, CA.

Contents

List of Tables and Figures ... iii
List of Photos ... iv
List of Acronyms and Abbreviations ... v

Summary ... 7
Overview ... 7
Project Description ... 7
Introduction ... 7
Project Alternatives ... 8
Elements of the Streetcar Alternatives ... 13
Support Facilities ... 13
Construction Activities ... 15

Introduction ... 1
Regulatory Framework ... 1
Federal ... 1
State ... 2
Local ... 3

Environmental Setting ... 5
Historic Context ... 5
Early History of Downtown Los Angeles ... 5
Downtown Development and the Streetcar ... 5
Downtown Neighborhoods ... 6
The Streetcar in Los Angeles ... 16
Current Conditions ... 20

Methodology ... 25
Public Participation ... 41
Responses Received ... 42
Field Survey ... 42

Results and Conclusions ... 47
Proposed Project and Potential Effects ... 47
City of Los Angeles Significance Thresholds ... 47
Overall Assessment ... 47
Findings ... 53

References ... 55

Appendix A SHPO Consultation

Appendix B Public Participation

Appendix C Department of Parks and Recreation 523 Forms – Eligible Properties

Appendix D Department of Parks and Recreation 523 Forms – Ineligible Properties

Appendix E Contributing and Non-Contributing Addresses to the Broadway Theatre and Commercial NRHP Historic District

Appendix F Features of the Broadway Theatre and Commercial District (to come)

Tables

1 Properties Included in the NRHP and Listed in the CRHR 26

2 Properties Previously Determined Eligible for the NRHP and Listed in the CRHR 28

3 Additional Properties Declared by the City of Los Angeles to Be Historic-Cultural Monuments 31

4 Properties Eligible for the NRHP, Pending SHPO Concurrence Pursuant to Section 106 43

5 Traction Power Substation Locations 49

6 Potential MSF Locations 52

Figures

1 Regional Location Map S-9

2 Proposed Downtown Los Angeles Streetcar Route S-11

3 Area of Potential Effect 33

4 National Register Properties and Local Landmarks 35

Photos

Photo 1. Looking south down Broadway at the intersection of 5th Street in 1926. 6

Photo 2. A view of 3rd Street, 3rd Street Tunnel, and Angels Flight (to the left) in 1901. 8

Photo 3. Crowds crossing the intersection of 7th Street and Broadway, looking north on Broadway in 1928. 9

Photo 4. Looking north on Broadway from 7th Street during the Armistice Day parade in 1944. 10

Photo 5. View of Spring Street looking north between 6th and 7th Streets in 1932. 11

Photo 6. A view of the intersection of Broadway and 7th St., looking west on 7th in 1926. 13

Photo 7. Northeast corner of Flower and 7th Streets looking at the south and west elevations of the Roosevelt Building circa 1940. 14

Photo 8. Exterior of the Examiner newspaper building at 1111 South Broadway in 1937. 16

Photo 9. A retired Los Angeles Transit Lines streamliner wearing government Los Angeles Metropolitan Transit Authority's green and white color scheme in 1963. 20

Photo 10. 7th Street, looking east from Figueroa Street, January 25, 2016. 21

Photo 11. Figueroa Street, looking south from Olympic Boulevard, January 25, 2016. 22

Photo 12. Broadway, looking north from 9th Street, January 25, 2016. 23

Photo 13. Hill Street, looking south from 6th Street, January 25, 2016. 24

Acronyms and Abbreviations

AC	alternating current
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHL	California Historic Landmark
City	City of Los Angeles
CPHI	California Points of Historical Interest
CRHR	California Register of Historical Resources
DASH	Downtown Area Short Hop
DC	direct current
DPR	California Department of Parks and Recreation
FTA	Federal Transit Administration
HCM	Historic Cultural Monument
LABOE	City of Los Angeles Department of Public Works, Bureau of Engineering
LACE	Los Angeles Consolidated Electric Railway
LADOT	City of Los Angeles Department of Transportation
LAMC	Los Angeles Municipal Code
LARy	Los Angeles Railway
LASI	Los Angeles Streetcar Inc.
MCL	Metropolitan Coach Lines
Metro	Los Angeles County Metropolitan Transportation Authority
mph	miles per hour
MSF	maintenance and storage facility
NCL	National City Lines
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NRHD	National Register Historic District
NRHP	National Register of Historic Places
OCS	overhead contact system
Project	Restoration of Historic Streetcar Service in Downtown Los Angeles
SHPO	State Historic Preservation Officer
TPSS	traction power substations

This page intentionally left blank.

Overview

From the mid-1870s to the early 1960s, several streetcar companies operated throughout downtown Los Angeles. For more than 60 years, electric streetcars or interurbans, such as the Yellow Cars (Los Angeles Railway) or the Red Cars (Pacific Electric), and the associated catenary wires, poles, and signals were familiar sights along South Broadway, South Hill Street, South Figueroa Street, and the numbered east-west streets. Many buildings along these routes still retain vestiges of the original streetcar era, evidenced by the presence of metal anchor hooks that held the catenary wires embedded in the building façades. Restoration of Historic Streetcar Service in Downtown Los Angeles (Project) proposes to bring back streetcar service to enhance mobility and transit circulation in, and support the growth and revitalization of, downtown Los Angeles.

This technical document delivers an analysis of the Project's impacts, both construction and operation, under the City of Los Angeles thresholds. The first part of this report provides a discussion of the project alternatives, followed by the regulatory framework, and environmental setting for the Project. In order to analyze the potential for adverse effect on historical resources, this report includes a thorough historic context for the project area and identifies historical built resources within the project area. The final section of this document applies the City of Los Angeles significance thresholds for impacts to historical resources.

The City of Los Angeles (City) is the lead agency for the Project under the California Environmental Quality Act (CEQA). The Project is being sponsored with the cooperation of the Los Angeles Bureau of Engineering (LABOE), the Los Angeles Department of Transportation (LADOT), the Los Angeles County Metropolitan Transportation Authority (Metro), and Los Angeles Streetcar Inc. (LASI). Funding assistance is also being sought from the Federal Transit Administration (FTA).

Project Description

Introduction

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along an up to 3.8-mile route. The project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center.

Figure 1 depicts the regional location of the Project. Figure 2 shows the Project's routing within downtown Los Angeles.

The track and roadway configuration would allow for a mixed flow of vehicles and a fleet of electrically powered streetcars. Power to the streetcar vehicles would be provided by approximately five traction power substations (TPSSs) and an overhead contact system (OCS). A maintenance and storage facility (MSF) site would also be constructed as part of the Project.

Project Alternatives

Five project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative.

Alternative 1 – No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the project study area that would remain if the proposed Project would not occur.

Alternative 2 – 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

Alternative 3 – 7th Street without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

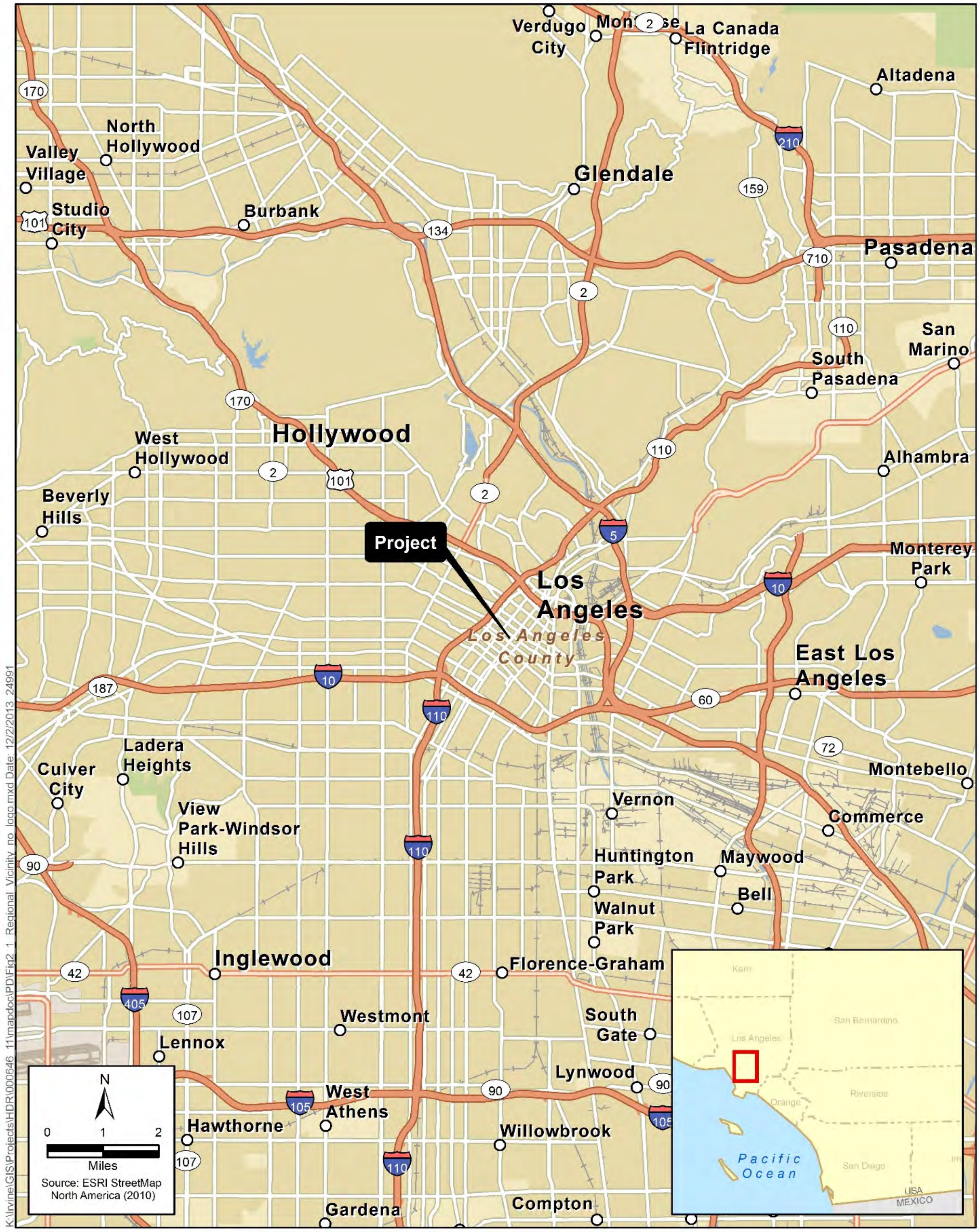
Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

Alternative 5 – 9th Street without Grand Avenue Extension

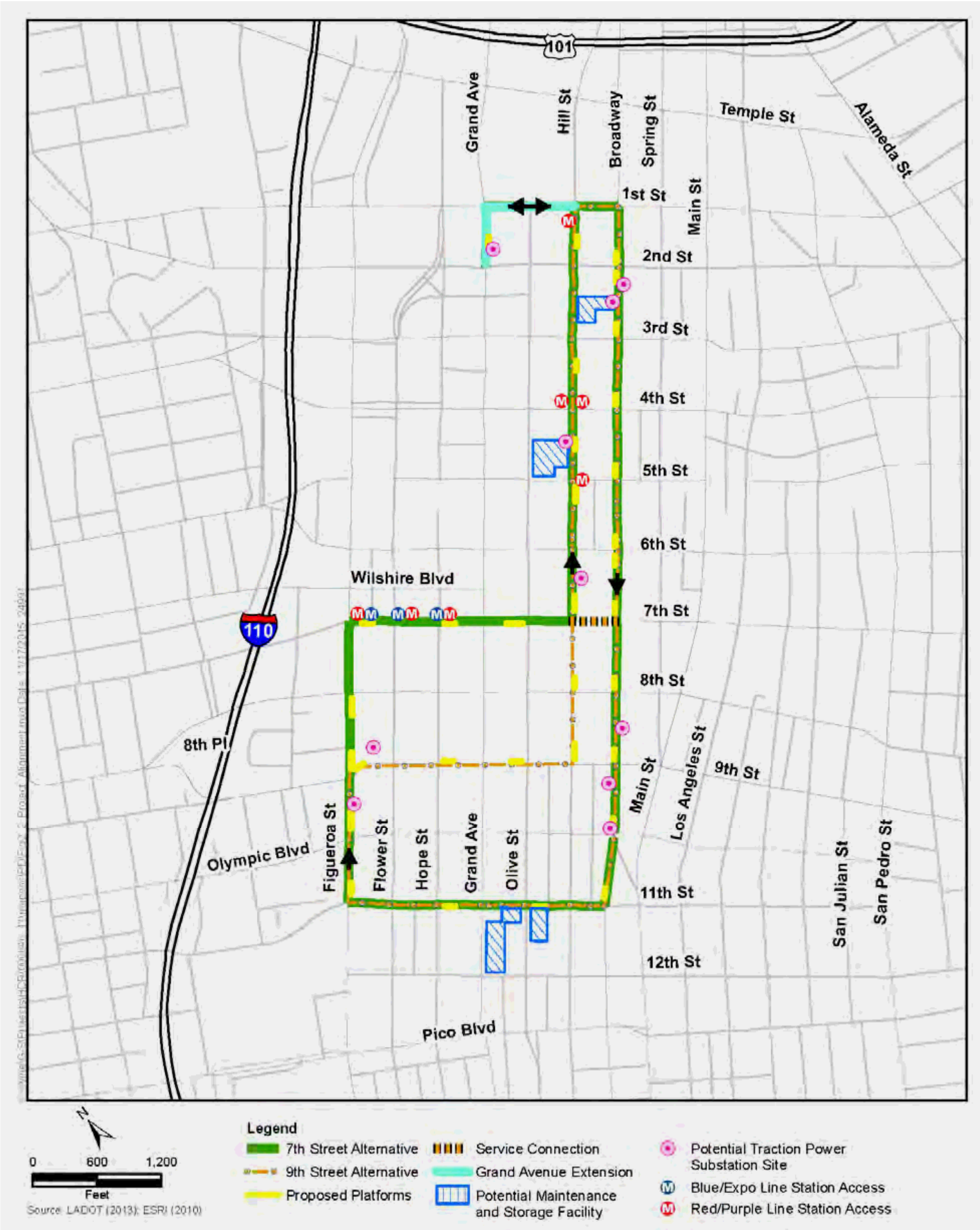
Alternative 5 would follow the same alignment as Alternative 3, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

Figure 1. Regional Location Map



This page intentionally left blank.

Figure 2. Proposed Downtown Los Angeles Streetcar Route



This page intentionally left blank.

Elements of the Streetcar Alternatives

A brief overview of the elements common to all build alternatives of the Project is presented below.

Vehicles

The Project's operating plan calls for 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate on the system. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 80 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. Examples of similar streetcars can be found in Portland, Oregon; both Tacoma and Seattle, Washington; Tucson, Arizona; Dallas, Texas; Atlanta, Georgia; and Charlotte, North Carolina. The streetcars would be designed with low floors to be compliant with the Americans with Disabilities Act (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 miles per hour (mph) on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks.

Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by buses operated by Metro, LADOT Downtown Area Short Hop (DASH), and other regional operators. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to shorter lengths. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

Support Facilities

Overhead Contact System

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site specific and be made based upon engineering design and aesthetic considerations. Either of these configurations could use decorative poles chosen to be consistent with the streetscape along the project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or 7th Streets, 9th or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide direct current (DC) power for the streetcars; the final number and placement will be determined by further project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial alternating current (AC) power to 750-volt DC power for the streetcars.

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible.

Maintenance and Storage Facility

The Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

Four sites are currently being considered as a potential location for the MSF: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets. All four candidate sites are currently being used as parking lots. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for the MSF site would be required. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and secure storage of streetcar vehicles.

Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. "Line-of-sight" operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary where the streetcar would require a special traffic signal phase to maneuver so as to avoid conflicts with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have separate transit signals. Where they are needed, operation of transit signals would be separated from the normal traffic signals in order to not confuse the general public.

Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue north of 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles would have operator cabs on both ends of the cars so that they would be able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential second layover sites. Should Alternative 3 or 5 be ultimately selected, two of these locations may be needed. At each of these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

Construction Activities

Construction activities associated with the Project would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include: (a) pavement removal, (b) utility relocation, (c) excavation, (d) construction of track drains, (e) installation of concrete track slab and rails, (f) construction of station platforms, (g) installation of special track work units, (h) reconstruction of ramps and sidewalks, (i) paving, and (j) striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations.

Laydown and storage area(s) for construction would be established near the project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have currently been identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th and 9th Streets. These should be regarded as example sites; other locations within the study area may become available and could also be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the project alignment.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with Los Angeles Municipal Code (LAMC) 41.40(a). To expedite construction, certain construction activities may be permitted to occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. Construction activities will be required to follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; *California Manual on Uniform Traffic Control Devices;* and all City bureaus' design manuals, special provisions, and standard plans, including the latest *Standard Specification for Public Works Construction*; the LABOE Brown Book; the *Work Area Traffic Control Handbook*; and any FTA requirements.

Regulatory Framework

This section discusses the applicable federal, state, and local regulations that (1) define historic properties and historical resources and (2) provide thresholds for determining effects on historic properties under the National Historic Preservation Act (NHPA) and impacts on historical resources under NEPA and CEQA.

Federal

Section 106 of the National Historic Preservation Act

Section 106 requires federal agencies, or those they fund or permit, to consider the effects of their actions on *historic properties*. These are defined by Advisory Council on Historic Preservation regulations (36 Code of Federal Regulations [CFR] Part 800) for implementing Section 106, as follows.

> *Historic property* means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that meet the NRHP criteria [36 CFR Section 800.16(l)].

The implementing regulations for Section 106 set forth a four-step process for compliance. Initiation of the Section 106 process includes the establishment of an undertaking, identification of the appropriate State Historic Preservation Officer (SHPO), and coordination with other reviews, such as NEPA (36 CFR 800.3). In the second step, the Area of Potential Effects (APE) is established and historic properties are identified. During this step, information from interested parties is sought, and SHPO is consulted regarding the eligibility of historic properties in the APE (36 CFR 800.4). Following this, in step three, the criteria of adverse effect are applied to those properties that have been identified as NRHP-listed or eligible, and SHPO concurrence is obtained (36 CFR 800.5). Finally, adverse effects are resolved in step four, either through avoidance, minimization, or mitigation, resulting in either a change to the proposed Project or the execution of a Memorandum of Agreement (36 CFR 800.6).

As a result of consultation with the SHPO on February 14, 2013, for the purposed of the built environment survey, the preliminary APE would be defined as those parcels adjacent to the corridors described in the project description, including the 7th and 9th Street Alternatives (with or without the Grand Avenue Extension). This would encompass all project components, including proposed maintenance and storage facility options and TPSS.

To determine whether an undertaking could affect NRHP-listed or -eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. For projects involving a federal agency, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must meet the criteria for evaluation set forth in 36 CFR Part 60.4, as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
>
> (c) that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) that have yielded, or may be likely to yield, information important in prehistory or history.

Among other criteria considerations, a property that has achieved significance within the last 50 years is not considered eligible for inclusion in the NRHP unless certain exceptional conditions are met.

State

California Environmental Quality Act

In accordance with Section 21084.1 of CEQA, the proposed Project would have a significant adverse environmental impact if it "causes a substantial or potentially substantial adverse change in the significance of an historical resource."

According to CEQA (Public Resources Code Section 21084.1), *historical resources* include any resource listed or determined eligible for listing in the California Register of Historical Resources (CRHR). Properties listed or determined eligible for listing in the NRHP, such as those identified in the Section 106 process, are automatically listed in the CRHR. Therefore, all *historic properties* under federal preservation law are automatically *historical resources* under state preservation law. Historical resources are also presumed to be significant if they are included in a local register of historical resources or identified as significant in a qualified historical resource survey.

State law in Title 14, California Code of Regulations (CCR) Section 4850, defines *historical resource* as follows:

> Any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California.

For the purposes of CEQA, historical resource is further defined under Public Resources Code Section 15064.5 as a "resource listed, or determined eligible for listing, in the California Register."

Section 15064.5 of the State CEQA Guidelines sets forth the criteria and procedures for determining significant historical resources and the potential effects of a project on such resources. Generally, the lead state agency shall consider a historical resource to be *historically significant* if the resource meets any of the criteria for listing in the CRHR.

The statutes and guidelines specify how historical resources are to be managed in the context of projects such as the proposed Project. Briefly, archival and field surveys must be conducted, and identified historical resources must be inventoried and evaluated in prescribed ways.

California Register of Historical Resources

The NHPA mandated the selection and appointment in each state of a SHPO. Each SHPO is tasked, among other duties, with maintaining an inventory of historic properties. In California, the state legislature established additional duties for the SHPO. These include the maintenance of a CRHR. Established by California Public Resources Code Section 5024.1(a) in 1992, the CRHR serves as "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent feasible, from substantial adverse change." According to California Public Resources Code Section 5024.1(c), the CRHR criteria broadly mirror those of the NRHP. The CRHR criteria are found at California Public Resources Code Section 5024.1(c) as follows:

> An historical resource must be significant at the local, state, or national level, under one or more of the following four criteria:
>
> 1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
> 2. It is associated with the lives of persons important to local, California, or national history; or
> 3. It embodies the distinctive characteristics of a type, period, region, or method or construction, or represents the work of a master, or possesses high artistic values; or
> 4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The minimum age criterion for the CRHR, as with the NRHP, is 50 years. Properties less than 50 years of age may be eligible for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance. In addition to meeting one or more of the historical significance criteria, the resource must possess integrity. Integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance."

There are several ways for resources to be included in the CRHR. A resource can be *listed* in the CRHR based upon a nomination and public consideration process. Additionally, a resource that is subject to a discretionary action by a governmental entity will be evaluated for *eligibility* for the CRHR. As previously stated, properties listed in or formally determined eligible for listing in the NRHP are *automatically* listed in the CRHR.

Local

City of Los Angeles Cultural Heritage Ordinance

The City of Los Angeles maintains a list of all sites, buildings, and structures that have been designated through the Cultural Heritage Ordinance as Historic Cultural Monuments (HCMs).

Historic Cultural Monument

Section 22.171.7 of the Cultural Heritage Ordinance states that an HCM is any site (including significant trees of other plant life located on the site), building or structure of particular historic of cultural significance to the City of Los Angeles, including historic structures or sites in which the broad cultural, economic or social history of the nation, state or community is reflected or exemplified; or which is identified with historic personages or with important events in the main currents of national, state or local history; or which embodies the distinguishing characteristics of an architectural type, specimen, inherently valuable for a study of a period, style, or method of construction; or a notable work of a master builder, designer, or architect whose individual genius influenced his or her age.

Any person may apply for the proposed designation of an HCM and the Cultural Heritage Commission determines whether or not the proposed designation merits consideration. If the Commission recommends approval of the application and it is included in the list of HCMs, no permit for the demolition, substantial alteration, or relocation of an HCM may be issued (Section 22.171.14) unless:

1. The Superintendent of Building or City Engineer determines that the demolition, relocation or substantial alteration is necessary in the interest of the public health, safety or general welfare;
2. The substantial alteration complies with the Secretary of the Interior's Standards for Rehabilitation;
3. The substantial alteration protects and preserves the historic and architectural qualities and the physical characteristics that make the site, building, or structure a designated HCM; and
4. The proposed action is in compliance with CEQA PRC Section 21000 et seq.

The following chapters provide the historic context for the project alignment, a discussion of the methodology for identifying and evaluating properties in the project alignment for NRHP and CRHR eligibility, and the application of the criteria of adverse effects.

Historic Context

Early History of Downtown Los Angeles

While the growth of modern Los Angeles and its downtown dates back to the 1880s, the founding of the city goes back almost a century earlier. On September 4, 1781, Spanish governor of California Don Felipe de Neve, along with a handful of soldiers and families, marched from Mission San Gabriel to what is now the northern end of downtown Los Angeles and founded El Pueblo de Nuestra Senora la Reina de Los Angeles de Porciuncula (the Town of Our Lady the Queen of the Angels of Porciuncula). First families were given plots to cultivate adjacent to a central plaza, which operated as the hub of early community activity and included a small adobe church. The village would remain a small agricultural outpost well into the nineteenth century, with residents engaged mainly in raising grain and cattle. By the outbreak of the Mexican-American War in 1846, the village still only numbered 3,000 residents. In comparison to its northern neighbor San Francisco, which boomed in the early years of the gold rush era, Los Angeles saw little development and gained a reputation as a remote, uncultivated, and lawless town. With the completion of the Southern Pacific Railroad in 1876 and the Santa Fe Railroad in 1885, the city encountered its first land boom and reached a population of 50,000 by 1892, more than doubling in two short years. Land speculation and building construction reached a frenzied pace during this period, almost all of which occurred in the boundaries of the current downtown (Works Progress Administration 1939: 208–213). While early commercial and residential growth first emerged on Main and Temple Streets, it would quickly expand to streets to the south and west. This set the stage for the formation of the earliest neighborhoods and commercial districts. Some of the early growth was intertwined with the introduction of streetcars to the city, particularly in the less established neighborhoods just outside the city's historic core, like Bunker Hill, Lincoln Heights, Boyle Heights, and Angelino Heights (Los Angeles Conservancy 1990).

Downtown Development and the Streetcar

The development of downtown and Greater Los Angeles was inexorably linked to the early transportation systems in the city. Although the historic core of downtown (streets like Temple, Main, Spring, Broadway, and Hill) was not as dependent on streetcar lines for residential growth as outlying areas, the streetcar played an important role in transporting the necessary workers and retail consumers from distant areas to downtown. Early subdivision activity adjacent to the pueblo and Main Street expanded outward along horse car, cable car, and electrified streetcars in the 1870s and 1880s. Cable cars and electric streetcars had the greatest impact on neighborhoods just outside the historic core. Although topography became an early impediment to the development of areas like Bunker Hill, Boyle Heights, and Angelino Heights, the cable and electric streetcars provided the crucial transportation connection to fuel their growth (Los Angeles Conservancy 1990: II-11–II-12).

***Photo 1**. Looking south down Broadway at the intersection of 5th Street in 1926. Streetcars proceed down the center of Broadway. Source: Los Angeles Public Library*

By the mid-1890s, electrified interurban streetcars connected downtown to cities as far as Pasadena and Santa Monica. With a downtown now conveniently accessible to outlying areas, department stores on 7th Street and theaters on Broadway could draw enough people to create a major hub of business, retail, and entertainment activity. After consolidation of the streetcar lines in 1911, the region had a streamlined system that focused on downtown, making it the single most accessible point in Southern California. The completion of the Subway Terminal Building (listed in the NRHP and CRHR, HCM #177) at 417 South Hill Street in 1925 would help shift the center of downtown activity farther to the west from the traditional Main Street corridor. The terminal's completion coincided with the growth of retail stores on 7th Street that were west of Broadway. At the peak of the Pacific Electric's Red Car expansion into the far reaches of Southern California, downtown could be accessed from cities as far east as San Bernardino and Redlands and as far south as Newport Beach in Orange County (Roseman 2004: 7–11).

Downtown Neighborhoods

Bunker Hill and Angels Flight

Of the neighborhoods directly adjacent to the historic core of downtown Los Angeles, Bunker Hill (originally called "Olive Hill") was among the first to have its initial development tied directly to the expansion of the streetcar system in Los Angeles. The modern boundaries of Bunker Hill consist of Temple Street to the north, 5th Street to the south, Olive Street to the east, and the Harbor Freeway to the west (Comer 1996: 16–18).

Early Los Angeles developer Prudent Beaudry purchased the land that constitutes Bunker Hill in 1867 with the intent of creating a residential subdivision. Although some residences dotted the landscape of Bunker Hill prior to the 1880s, the development of the area was hindered by steep topography. The hill proved especially inaccessible to early horse-drawn streetcars, which were prevalent in downtown during the 1870s and 1880s. When cable car technology was introduced to Los Angeles by the late 1880s, streetcars could finally travel the steep terrain of Bunker Hill. By 1889, two cable car enterprises, the Temple Street Cable Railway and the 2nd Street Cable Railroad, both traversed the peripheries of Bunker Hill making the neighborhood more attractive to future development. The Temple Street Cable Railway ran 3 miles from Main Street to the Dayton Heights neighborhood along Temple Street, while the 2nd Street Cable Railroad ran along 2nd Street from Spring Street to Texas Street. Streetscapes, water systems, and other infrastructure improvements also made the area more attractive to investment. Bunker Hill would soon experience an intensive residential building boom, which resulted in a number of fashionable Queen Anne and Eastlake style dwellings at the crown of the hill (Post 1989: 49–52).

The construction of the Angels Flight Railway (listed in the NRHP and CRHR, HCM #4) in 1901 provided a method for traveling the steepest portion of Bunker Hill, near 3rd Street, which had no streetcar access at the time. Although the 3rd Street tunnel was constructed under Bunker Hill in 1901, it did not provide access to the top of the hill. Angels Flight was the inspiration of entrepreneur Colonel J. W. Eddy who aimed to build a short but direct line that connected the residential Bunker Hill neighborhood to the growing business district below. Increased housing density in Bunker Hill, along with development of the commercial core to the east and south of the line, helped ensure strong patronage. Part of the Los Angeles City Council's condition for approval of the Project included an adjacent landscaped park and a stairway that paralleled the line. After opening in December 1901, the railway became an important connection between the residential hillside and the commercial core to the east. Development of Bunker Hill would continue to intensify as stately hotels and apartment buildings would be added to the existing fabric of single-family dwellings (Comer 1996: 35–42).

Beginning in the 1920s, the neighborhood would face a steady deterioration as it became associated with overcrowding, crime, and an aging housing stock. The area was often bypassed by new development in the adjacent flatlands of downtown that had topography more suitable for new construction. Despite extensive redevelopment of Bunker Hill after World War II and the loss of many early buildings, Angels Flight provides a historical link not only to early streetcar expansion in Los Angeles but to the residential character of Bunker Hill that had largely been lost by the middle of the twentieth century (Comer 1996: 85–95).

Photo 2. *A view of 3rd Street, 3rd Street Tunnel, and Angels Flight (to the left) in 1901.*
Source: Los Angeles Public Library

Broadway Theatre and Commercial District

The Broadway Theatre and Commercial District[1] (listed in the CRHR, HCM #2306) was listed on the NRHP on May 9, 1979. The original NRHP district, which encompassed 300 to 939 South Broadway, was expanded on April 12, 2002 to now encompass 242 to 947 South Broadway. A list of the contributors and non-contributors to the Broadway Theatre and Commercial District is located in Appendix D. Character-defining features can be found in Appendix E.

The Broadway District is highly representative of a commercial and entertainment center in downtown Los Angeles that emerged principally in the first quarter of the twentieth century. The area is located on a six-block thoroughfare on Broadway, between 2nd Street and Olympic Boulevard. The area consists of a collection of large office buildings, department stores, and theaters designed in traditional architectural styles, such as Beaux Arts. Construction of the new city hall on Broadway during the 1890s was a primary impetus for changing the neighborhood from a residential to a commercial district. Large business structures, such as the Bradbury Building (1893, National Historic Landmark [NHL], listed in the NRHP and CRHR, HCM #6), the Grand Central Market (1897, National Register Historic District [NRHD] contributor), the Nelson Building (1893, NRHD contributor), and the Jacoby Brothers Store (1900) began to change the Broadway skyline and pulled the downtown business center farther to the south from 3rd Street. The population influx and real estate boom in Los Angeles helped fuel this southward development in downtown as businesses and institutions were in need of available land to expand operations (Roseman 2004: 61–63).

[1] Also known as the Broadway Theater and Commercial District

Photo 3. *Crowds crossing the intersection of 7th Street and Broadway, looking north on Broadway in 1928.*
A Yellow Car is seen in the foreground on Broadway while a Red Car (on the right side) is about to cross Broadway along 7th Street. Source: Los Angeles Public Library

During the first half of the twentieth century, the Los Angeles streetcar system made the district accessible to patrons throughout Los Angeles. By the early 1900s, the Los Angeles Railway Yellow Cars became a familiar sight along Broadway as they carried shoppers, theatergoers, and workers to their desired destinations with regular stops along the route. The interurban Red Cars also played a role by transporting people to Broadway from outlying suburban locations in Southern California. Before the widespread use of automobiles and the development of the freeway system, the streetcars provided an important link between downtown commerce and the greater Los Angeles region (Los Angeles Conservancy 1990: II-25–II-28).

The theaters on Broadway are of particular historical importance because they provided a center for drama, comedy, and vaudeville presentations in Los Angeles before the advent of motion pictures. A number of Broadway's theaters from this period continue to convey cultural and architectural significance. Among the earliest theaters built on Broadway are the Cameo at 528 South Broadway (1910, NRHD contributor, HCM #524), the Arcade at 534 South Broadway (1910, NRHD contributor, HCM #525), and the Palace at 630 South Broadway (1911, NRHD contributor, HCM #449). The modest, Renaissance Revival style Cameo Theatre was the oldest continuously operating theater in California until its closure in 1991. The Arcade was designed in the then ubiquitous Beaux Arts style, while the Palace featured Italian Renaissance influences on its exterior façade (California Office of Historic Preservation 1977a).

Photo 4. *Looking north on Broadway from 7th Street during the Armistice Day parade in 1944.*
Yellow Cars are seen in the center of the street. Source: Los Angeles Public Library

Movie palaces in the district reached an even more elevated level of grandeur with the construction of the Million Dollar Theater at 307 Broadway in 1918. Albert C. Martin designed the richly detailed Churrigueresque style building for the legendary showman Sid Grauman. The theater also helped usher in an era of increasingly grand theaters along Broadway in the 1920s. The 2,190-seat Orpheum (842 South Broadway) was constructed in 1926 in the Beaux Arts style and would play host to many of the biggest names in show business. A year after the construction of the Orpheum, the Gothic-themed United Artist Theatre opened (933 South Broadway, determined eligible for the NRHP, listed in the CRHR, HCM #523). The building was the product of the prolific Los Angeles-based architects Walker and Eisen, who designed other noteworthy buildings downtown. Theater construction in the district reached its apex in 1931 when the last of the great movie palaces, the Los Angeles Theatre (NRHD contributor, HCM #225), was opened at 615 South Broadway. Designed by Charles Lee, the lavish French Baroque-inspired building is distinguished by its huge accented columns on the primary façade. Other theaters from the period include the Roxie at 518 South Broadway (1932, NRHD contributor, HCM #526), the Globe at 744 South Broadway (1913, NRHD contributor), the Tower at 802 South Broadway (1927, NRHD contributor, HCM #450), and the Rialto at 812 South Broadway (1917, NRHD contributor, HCM #472) (Gebhard and Winter 2003: 249–251).

Spring Street Financial District

The Spring Street Financial District was listed on the NRHP on September 12, 1978, and is located from 354 to 704 South Spring Street.[2] For most of the twentieth century, Spring Street served as the business center of Los Angeles. Once known as the "Wall Street of the West" for its concentration of banks and other financial institutions, the district consists of an architecturally homogeneous collection of buildings along Spring Street, from 7th Street north to 4th Street. Architecturally, Neo-Classical, Commercial, and Art Deco buildings with grand terra cotta façades define this neighborhood.

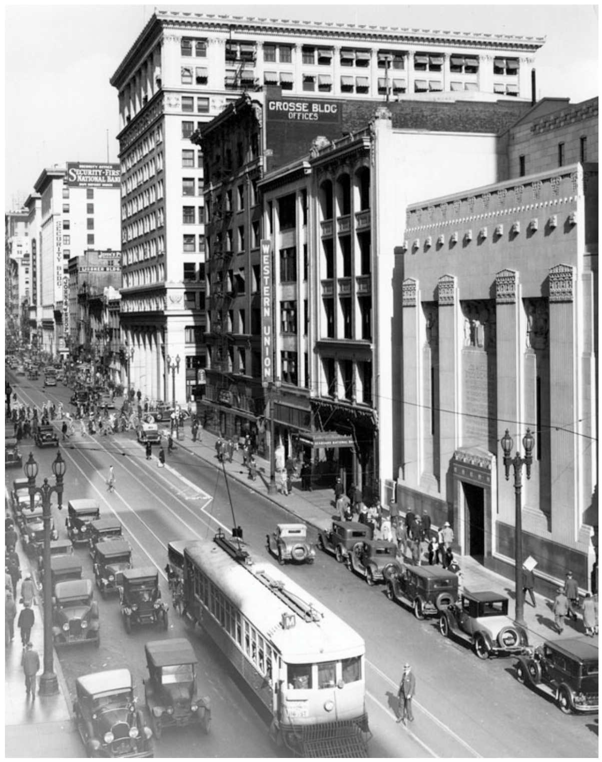


Photo 5. *View of Spring Street looking north between 6th and 7th Streets in 1932. On the right is the Los Angeles Stock Exchange building (later the Pacific Coast Stock Exchange). A Yellow Car is traveling south down Spring Street. Source: Los Angeles Public Library*

Like Broadway to the west, Spring Street had been a predominantly residential neighborhood prior to 1900, although some banks had been built on the street as early as the 1880s. By 1900, commercial structures were being built to the south and west of the traditional financial center along North Main Street. Spring Street and Broadway were two of the main recipients of this commercial expansion (Roseman 2004: 35).

[2] Although the Spring Street Financial District is east of the Area of Potential Effects for the Project, it is discussed as part of the historic context because the Spring Arcade Building, which is listed as a contributor to both the Spring Street Financial District and the Broadway Theatre and Commercial District, is in the study area. The address for the Spring Arcade Building is 538-544 Broadway and 531-545 Spring Street.

The 12-story, John Parkinson-designed Continental Building (determined eligible for the NRHP, listed in the CRHR, HCM #730) at 408 South Spring Street stands as one of the earliest remaining buildings in the area and was considered the first skyscraper in Los Angeles upon its completion in 1902. The height and restrained style of the Continental provided a glimpse into the type of buildings that would later come to dominate Spring Street. The Italianate-influenced Van Nuys Building (NRHD contributor, HCM #898) at 210 West 7th (corner of 7th and Spring Streets) was another notable addition to the corridor when it opened in 1911. Other early 1900s additions to Spring Street included the Commercial-style Bartlett Building at 651 South Spring Street (1911, NRHD contributor), the Parkinson and Bergstrom-designed Pacific Southwest Bank at 6th and Spring Street (1910, NRHD contributor), and the Hellman Annex at 410 South Spring Street (1913, NRHD contributor, HCM #729) (California Office of Historic Preservation 1977b).

Spring Street experienced another wave of development following World War I as local financial activity accelerated. Workers who lived outside downtown could reach Spring Street via the Los Angeles Railway (LARy) Yellow Cars, which ran up and down the street. Both the Financial Center Building (704 South Spring Street, NRHD contributor) and the California-Canadian Bank (625 South Spring Street, NRHD contributor) were completed in 1923, both featuring extensive use of terra cotta ornamentation. The following year, the double-winged Spring Street Arcade Building was erected at 541 South Spring Street (this property is a contributor to the Broadway and Spring Street NRHP Historic Districts, HCM #525). By the end of the 1920s, the massive Title Insurance and Trust Building (433 South Spring Street, NRHD contributor, HCM #772) symbolized the later Art Deco buildings found on Spring Street. The Pacific Stock Exchange at 618 South Spring Street (1929, NRHD contributor, HCM #205), the Banks & Huntley Building (1930, NRHD contributor, HCM #631), and the E. F. Hutton Building (1931, NRHD contributor) were some of the last contributing financial buildings in the district. The onset of the Great Depression would bring an abrupt end to most commercial construction in the area. By the 1960s, the corridor would lose its status as the financial epicenter of Southern California as banking institutions relocated to the Gold Coast area around Wilshire Boulevard and Figueroa Street. Nevertheless, the Spring Street corridor continues to convey the financial history and architectural evolution of commercial building in Los Angeles (Gebhard and Winter 2003:252–253).

7th Street

During the 1910s and 1920s, 7th Street developed as a commercial district noted for its upscale retail and distinctive office architecture, which continues to define its modern built environment. The area is roughly a mile south of the original pueblo and had been agricultural land until the first residences began to appear in the late 1870s. Due to the commercial expansion of downtown in the early 1900s, the street continued to evolve from residential to commercial uses. The growth of the area by the 1910s represented a transition in downtown commercial retailing from turn of the century, mixed-use buildings to the larger, single-use, specialized buildings. By 1920, 7th Street featured a number of major retailers and attracted thousands of shoppers, many of which arrived on streetcars. The Yellow Cars provided many stops along the street and became a popular mode of transportation for downtown visitors. Both the Yellow Car and Red Car systems, and their extensive rail network, would allow downtown businesses to draw patrons from throughout Southern California. The corner of 7th and Broadway would soon become one of the most bustling intersections in the City due to a plethora of nearby retail and entertainment establishments. The 7th Street corridor continued to grow throughout the 1920s with the addition of several large-scale office buildings. The architectural character of the street was typified by Beaux Arts style buildings constructed in the early twentieth century. Several of these buildings had undergone façade makeovers in the Art Deco style by the 1930s (Los Angeles Conservancy 1990: II-26–II-28).

Both the Bullock's Department Store and the J. W. Robinson Company served as two of the early catalysts for retail growth along the 7th Street corridor. John Bullock set the tone for the area's specialized, upscale department store theme when he opened his flagship Bullock's store at the corner of Broadway and 7th (319 West 7th Street) in 1906. The store would experience continued expansion at the location and eventually occupy six adjoining structures. In 1915, J. W. Bullocks Company opened the first major department store on 7th Street to the west of Broadway. Located at 600 West 7th Street, the store became an immediate success and spurred a westward expansion of commercial business along the street in an area that had been previously been considered the outskirts of the downtown retail core. Encompassing almost nine acres of floor space, the building was originally designed in the Beaux Arts style but underwent a 1934 remodel, which resulted in its current Moderne façade. Additional retail buildings from the period include the Coulter Dry Goods Company Building at 518 West 7th Street (1917), Ville de Paris at 420 West 7th Street (1917), and later the Barker Bros. Building at 818 West 7th (1926, determined eligible for the NRHP, listed in the CRHR, HCM #356). The Renaissance Revival styled Barker Bros. Building is of particular significance because it was among the largest furniture stores in the country and features a remarkable exterior façade that remains in nearly original condition (Los Angeles Conservancy 2010: 1–6).

Photo 6. *A view of the intersection of Broadway and 7th St., looking west on 7th in 1926. On the corner is the Loew's State Theatre. Streetcars are seen at the center of the street. Source: Los Angeles Public Library*

The construction of single-use office buildings added another component to the architectural fabric of 7th Street. Between 1920 and 1928, 13 large office buildings were constructed on 7th Street alone. Built in 1911, the Union Oil Building at 215 West 7th Street represents one of the earliest examples of this large, spacious type of office construction. The Beaux Arts style building had a Moderne facelift to its first three floors in 1937. Office buildings from the 1920s include the Romanesque style Fine Arts Building at 811 West 7th Street (1926, determined eligible for the NRHP, listed in the CRHR, HCM #125), the Bank of Italy at 505 West 7th Street (1922, HCM #354), the Financial Center Building at 140 West 7th Street (1924, listed in the NRHP and CRHR), the Transportation Building at 122 East 7th Street (1924), and the Roosevelt Building at 727 West 7th Street (1927, listed in the NRHP and CRHR, HCM #355). The massive Renaissance Revival style Roosevelt Building was said to have been the largest office building in Southern California upon its opening. Its architects, Curlett and Beelman, designed six buildings on 7th Street alone. The Financial Center Building stands as yet another example of Beaux Arts style along the street and is listed on the NRHP. Both the Fine Arts Building and the Transportation Building display the stylish and artistic work of architects Walker and Eisen (Gebhard and Winter 2003: 238, 252).

Photo 7. *Northeast corner of Flower and 7th Streets looking at the south and west elevations of the Roosevelt Building circa 1940.*
A streetcar is traveling east on 7th Street. Source: Los Angeles Public Library

In addition to retail and office buildings, 7th Street was also home to theater venues near Broadway and the Los Angeles Athletic Club (determined eligible for the NRHP, HCM# 69). Two theaters of particular note are the Pantages Theatre at 401 West 7th Street (1920, determined eligible for the NRHP) and the Loew's State Theatre (listed in the NRHP and CRHR, HCM #522) at 300 West 7th Street. The Loew's Theatre was especially popular in its heyday because it offered both live performances and MGM films. The Los Angeles Athletic Club, a local institution, moved to its current location at 431 West 7th Street in 1912 with a layout that included a clubhouse, athletic facility, and hotel. It also featured an Olympic-size pool on the sixth floor, which still remains today, and was an engineering feat in its time (Los Angeles Conservancy 2010: 4). The club is also credited with introducing organized track and field competition to California, which would later be adopted into prep and collegiate sports programs in the twentieth century (Starr 2005: 299).

As a result of this study, a historic district designated as the W 7th Street District is being recommended eligible for the NRHP. The boundaries of this district are roughly W 7th Street between South Figueroa Street and South Main Street. The district was determined eligible for the NRHP under Criterion A due to the 7th Street development during the 1910s and 1920s, as a commercial district noted for its upscale retail and distinctive office and retail architecture; it is also eligible for Criterion C of the NRHP due to the architectural character of the street in high academic styles that retain high degrees of integrity. This determination of eligibility is contingent on SHPO concurrence with the finding. The associated California Department of Parks and Recreation (DPR) forms for the proposed district are located in Appendix C.

South Park

The neighborhood commonly referred to as South Park encompasses an area roughly bounded by 8th Street to the north, the Santa Monica Freeway to the south, Main Street to the east, and the Harbor Freeway to the west. The name "South Park" is a fairly recent moniker created for the marketing and redevelopment of the neighborhood; historically, it was not referred to by this name. The neighborhood was first developed as a middle-class residential area during the 1880s and evolved into an area characterized by medical, commercial (especially automotive related), and retail businesses intermixed with residential flats, apartments, and rooming houses during the twentieth century (City of Los Angeles 2001: 2, 7).

South Park was traditionally recognized as the home to two important institutions during the first half of the twentieth century: William Randolph Hearst's Examiner newspaper (later the Herald-Examiner) and the California Hospital. The building formerly occupied by the Herald-Examiner at 1111 South Broadway (determined eligible for the NRHP, listed in the CRHR, HCM #178) was constructed in 1914 and designed by renowned architect Julia Morgan in association with William Dodd and William Richards. The striking Mission Revival style building with Italian Revival and Moorish influences stands as one of Morgan's few works in Los Angeles.

***Photo 8**. Exterior of the Examiner newspaper building at 1111 South Broadway in 1937.*
A Yellow Car can be seen at the bottom of the photo on Broadway.
Source: Los Angeles Public Library

California Hospital represents one of the early hospitals in Los Angeles. First opened at 1414 South Hope in 1898, the hospital rapidly expanded into neighboring buildings to accommodate additional patients. In 1921, the Lutheran Hospital Society of Southern California purchased the hospital and would operate it for several decades. After the original hospital building proved inadequate by the 1920s, the Society built a nine-story hospital in 1926 at the original Hope Street location. The brick hospital would serve Los Angeles until it was severely damaged by the Northridge Earthquake of 1994. The building was demolished in 2000, although California Hospital continues to operate a hospital tower at 1401 South Grand Avenue, which was built in 1987.

The Streetcar in Los Angeles

Horse Car Lines (1873–1901)

While there had been talk of a street railway line in Los Angeles since the 1860s, it was not until the 1870s that there was the necessary economic boom and critical mass of population for its development. Judge Robert M. Widney incorporated the Spring & 6th Street Horse Railroad Co. in February of 1874 and brought the first car line into fruition in the downtown. The line would feature a horse-drawn car on narrow-gauge tracks, which ran from the Plaza to the intersection of 6th Street and Pearl Street (now Figueroa) along Main Street. Funded in part by property owners adjacent to the line, the first phase of the railway was completed by the end of 1874. Widney subsequently sold controlling interest in the rail company to Stephen C. Hubbell, who extended the line east across the Los Angeles River into the East Los Angeles neighborhood of Lincoln Park (Workman 1935: 149–155).

Another horse car railway venture emerged with the chartering of the Main Street & Agricultural Park Street Railroad Co. in November of 1874. By 1876, under the leadership of company president John G. Downey, the traction line extended from the plaza to an early Los Angeles amusement park located at Washington Boulevard named Washington Gardens. A year later, the line was extended farther south to Agricultural Park (now Exposition Park) (Post 1989:41–47).

Two additional horse car lines developed by 1880. The first, Los Angeles & Aliso Avenue Street Passenger Railway connected Main Street to the newly subdivided Boyle Heights neighborhood east of the Los Angeles River. Since the line was initially built for land promotion of Boyle Heights, it gave potential residents from downtown a chance to explore the burgeoning neighborhood across the river. Providing service along Aliso Avenue, the carline's connection to downtown contributed to the rapid growth of Boyle Heights during the 1880s. The second, the East Los Angeles & San Pedro Street Horse Line provided service along San Pedro Street during the late 1870s, but the line was short lived and ended service after only a few short years due to a lack of patronage. Widney incorporated this line in an effort to promote a subdivision in East Los Angeles belonging to the Pioneer Building Association; however, the line did not produce the same impetus for growth seen in Boyle Heights. This line was typical of other lines that were built to promote neighborhoods on the periphery of downtown. If the neighborhood did not develop quickly enough or produce the necessary amount of riders, the ventures would be short lived (Post 1989: 31–38).

The population and economic boom in Los Angeles during the 1880s provided the necessary ridership demand from residents near downtown to warrant aggressive expansion of the street railway system. The convenience provided by street railways often enabled the sale of real estate on the uninhabited peripheries of the city, and in turn, produced a new population of riders desiring access to the downtown business district. After the 1880s, horse cars would be phased out in favor of the new cable car technology, which surpassed horse-drawn cars in safety, operating economy, speed, and cleanliness (Caughey 1977: 192–195; Electric Railway Historical Association n.d.). The final animal-powered line in Los Angeles, the Mateo Street line, ceased operation in 1901 (Caughey 1977: 192–195; Electric Railway Historical Association n.d.).

Cable Car Lines (1885–1902)

For a time, animal traction lines gave way to cars pulled by steel cables beneath the street surface. This was a far more involved and expensive technology than simply putting down two rails and building a horse barn. The huge investment appeared worthwhile as the cable cars could climb the steepest of hills, and suddenly they opened up real estate markets to the west and east of downtown that were previously unreachable due to the hills and the river. The previous horse car lines simply could not operate on the steep grades that hemmed in downtown. Now neighborhoods with hilly terrain, such as Crown Hill and Bunker Hill, could be accessed by cable cars. In 1885, Los Angeles became one of only a handful of American cities with a cable car system thanks to the construction of the 2nd Street Cable Railroad, which ran west from Spring Street. It was privately funded and built with the intent of selling lots in the Crown Hill district. Another cable car enterprise, the Temple Street Cable Railway, would extend three miles from Spring Street to the Dayton Heights neighborhood at the city's western limits (Caughey 1977: 194–197; Electric Railway Historical Association n.d.).

Cable car service in Los Angeles reached its zenith in 1887 with the creation of the costly and extensive Los Angeles Cable Railway Cable Car Line. The railway was capitalized at $2.5 million on June 9, 1887, by directors J. F. Crank and Charles Forman and became the largest such enterprise organized in the city. The line may have been most noteworthy for its accompanying infrastructure investments, which included the construction of three supporting power plants as well as the highly recognizable 1st Street Viaduct, which spanned the Los Angeles River and Santa Fe rail yard. The costly investments of the Los Angeles Cable Railway would quickly create financial difficulty for the company, and it was reorganized as the Pacific Railway in 1889 by Chicago streetcar magnate, Charles B. Holmes (Workman 1935: 203–207).

Cable railway construction involved digging up the street and installing hundreds of heavy cast iron yokes that carried the pulleys and wheels over which the steel cables ran. This construction also had to carry the rails and the weight of regular street traffic. These systems were so expensive that they really could not be cost justified by real estate sales alone, and many investments were lost. Because the City issued franchises to use public streets, several cable operators got into the business by buying failing horse car lines whose primary assets were the franchises, not the rolling stock or the poorly built horse car tracks.

Electric Streetcars and Interurbans (1885–1963)

By the late 1880s, the cable car lines would lose patronage to the fledgling electric streetcars. During this period, electric streetcar technology, and specifically the electric motor, had been refined and successfully introduced in major East Coast cities. While cable cars continued to function in Los Angeles under the Pacific Railway Company, the line would face new competition from an emerging electric streetcar company named the Los Angeles Consolidated Electric Railway (LACE). Under the leadership of land developer Moses Sherman, LACE would rapidly expand throughout the downtown core. While the cable cars of Pacific Railway continued to maintain the largest ridership of the City's streetcar lines in the early 1890s, its finances were precarious and its technology became increasingly antiquated. Pacific Railway struggled to remain solvent and was acquired by LACE by fall of 1893, bringing a precipitous end to horse and cable car lines previously run by Pacific Railway. With a virtual monopoly over streetcars in Los Angeles, LACE electrified all of its remaining horse and cable car lines by the summer of 1896, officially ushering in the era of the electric streetcar (Post 1989:101–111).

Even with near complete control of streetcar lines in Los Angeles, LACE would soon face financial difficulties of its own due in part to a national depression in the 1890s as well as mismanagement of the company. To avoid foreclosure, Moses Sherman relinquished control to company bondholders who formed a new railway corporation called the Los Angeles Railway, which would assume control of the electric streetcar system. By 1900, the yellow and brown cars of the Los Angeles Railway had extensive lines running throughout downtown Los Angeles and into neighborhoods such as Angeleno Heights, East Los Angeles, and Boyle Heights. Real estate mogul and railroad baron Henry E. Huntington gained control of LARy, in 1898. In 1901 Huntington would also begin to assemble the expansive interurban Pacific Electric Red Cars system, which would span multiple counties in Southern California. The entirely separate LARy system would continue to be prevalent in the downtown core (Post 1989: 105–109).

Through intermediaries the Southern Pacific Railroad purchased an ever-increasing amount of the Pacific Electric Company's stock as part of a quiet expansion effort into Southern California. By the 1910s, Huntington proceeded to further loosen his hold on his streetcar empire as he turned his attention to his public utility companies and pursued his passion for collecting rare books and art. In

1911, the Southern Pacific Railway forced Huntington out of the Pacific Electric completely. The companies purchased by Southern Pacific would be combined under the Pacific Electric name. Huntington would still maintain control of the one streetcar system, the Los Angeles Railway, which would remain in the Huntington trust until 1945. This would leave only three streetcar companies operating in Los Angeles after 1911: the Pacific Electric, the Los Angeles Railway, and the small Glendale & Montrose Electric Railway, which consisted of only five cars and two lines operating largely in Glendale and La Canada (Walker 1977: 45).

By the time of the 1911 merger, Pacific Electric Red Cars had become the largest interurban electric railway in the world in terms of miles of tracks (1,200 route miles) throughout Southern California. Nevertheless, Huntington's Yellow Cars, which provided quick, local service in Los Angeles and operated 90 percent of its lines within the city limits, would become the true workhorse of the regional transit system. By 1924, LARy carried about twice as many passengers as the Pacific Electric, serving 255.6 million passengers compared to the Red Cars 100.9 million (Masters 2013).

Both the LARy Yellow Cars and Pacific Electric Red Cars reached the peak of their expansion and usage by the 1920s and 1930s, when they were commonly used to take people to popular shopping and entertainment districts in downtown Los Angeles from outlying suburbs that were not as well served by commercial retail. Despite the widespread use of both streetcar systems, the first indication of their decline began to appear as early as the 1920s. A vibrant automobile culture had entrenched itself in Southern California by the 1920s as car ownership rapidly grew from year to year and became increasingly affordable to a growing middle-class. Where the streetcars had previously been the only connection of outlying areas to central Los Angeles in the pre-automobile era, auto travel provided a desirable alternative and was supported by an expanding publicly funded road network. In the case of the Pacific Electric, real estate development had driven interurban expansion, and passenger operation was typically a loss leader. When most of the real estate holdings had been developed by the 1920s, this primary source of profit began to be depleted, and the least-used Pacific Electric car lines converted to buses as early as 1925 (Crump 1965: 203–209). The real reason Southern Pacific Railway had been so keen to acquire the Pacific Electric routes was that far more profitable freight operation was possible compared to the Pacific Electric's standard gauge long-distance tracks. The Los Angeles Railway, with its tight inner city curves and narrow gauge street operations, never carried more than a token amount of perishable freight. When the Great Depression came in 1930, the management of the Glendale & Montrose begged the Pacific Electric to buy out their operations. When the Pacific Electric refused, the Glendale & Montrose folded, and its tracks were sold to the Union Pacific Railway for freight operations only.

Both remaining rail transit companies experienced a boom in ridership during World War II due to gasoline, oil, and rubber rationing; however, too many forces were working against the sustainability of streetcars and interurbans. Due to high operational costs and anemic ridership, more and more of the underutilized lines to outlying communities were replaced by less costly bus lines during the 1930s and 1940s. In 1940 and 1941 alone, the Pacific Electric discontinued service to Fullerton, Riverside, Manhattan Beach, and Torrance and discontinued two Santa Monica routes in favor of bus service. In addition, the beginning of the freeway system in Southern California in the 1940s would make long distance auto travel even more practical, often to the detriment of streetcar lines to outlying areas (Crump 1965: 206–210).

By the late 1930s, the influential Southern California Automobile Club vigorously lobbied for plans to create a freeway system for the region, which included the dismantling of streetcar lines.

While the LARy did not rely on distant suburban ridership to the degree that the Pacific Electric did, the LARy was suffering similar deterioration in ridership. The Huntington estate sold the Yellow Car system to bus-oriented transit operator, National City Lines (NCL), in 1945. Operating under the name Los Angeles Transit Lines, NCL repainted many streetcars, ordered new modern Presidents Conference Cars and streamlined operations by abandoning a number of rail lines in favor of motor coaches. Likewise, the Pacific Electric sold off its passenger operations to bus operator Metropolitan Coach Lines (MCL) in 1953. MCL converted rail service to bus service in many areas (Walker 1977:14).

Photo 9. *A retired Los Angeles Transit Lines streamliner wearing government Los Angeles Metropolitan Transit Authority's green and white color scheme in 1963.*
Source: Los Angeles Public Library

Beyond the growing dominance of automobile culture, the streetcar's downfall in Los Angeles was further hastened by a reputation for aging infrastructure, frequent delays, and uncomfortable trains. At the same time, growing affluence during the post-World War II era allowed for an even greater expansion of automobile ownership. Public officials failed to integrate streetcar lines into proposed freeway projects, citing cost as the main impediment. A new government agency, the Los Angeles Metropolitan Transit Authority, took over the successors to the Yellow and Red Car systems in 1958 and soon dismantled the last vestiges of the old streetcar lines. The last former Pacific Electric interurban operated from downtown to Long Beach April 8, 1961 and the last five former Los Angeles Railway lines completed service in the early morning hours of April 1, 1963 (Masters 2013).

Current Conditions

The project alignment is in downtown Los Angeles. This is an urban setting, with multi-story civic, commercial, entertainment, and residential buildings interspersed with at-grade parking lots, multi-story parking garages, and eight parks. The project alignment includes portions of several neighborhoods and districts that illustrate the typical uses. For example, the Jewelry District encompasses parts of Hill Street and Broadway between 5th and 8th Streets. This cohesive grouping of buildings demonstrates the growth of Los Angeles during the early 1900s, as well as the popular architectural styles designed by renowned architects of the time period. The DPR forms for the Downtown Hill Street Historic District are located in Appendix C.

In addition to the Broadway theaters, there are two areas that are dominated by entertainment venues: 1st Street and Grand Avenue, which is anchored by the Dorothy Chandler Pavilion and the Walt Disney Concert Hall, and the L.A. Live/Staples Arena grouping along South Figueroa Street and 11th Street/Olympic Boulevard. At the north end of the project alignment is the Civic Center, and at the south end is South Park.

Photo 10. *7th Street, looking east from Figueroa Street, January 25, 2016.*

Photo 11. *Figueroa Street, looking south from Olympic Boulevard, January 25, 2016.*

Most of the geography of the project alignment is flat, with a few exceptions. The north-south Broadway, Hill, and Figueroa Streets are relatively level boulevards in the project alignment, although Hill Street is slightly elevated in comparison to Broadway, and there is a slight rise at the north end of Broadway. Bunker Hill rises up from the west side of Hill Street, north of 6th Street. As a result, 1st Street has a gradual climb from South Broadway to Grand Avenue.

The section of 1st Street between South Broadway and Grand Avenue provides for traffic in both the eastbound and westbound directions using five lanes, except near the intersection with Grand Avenue, where the road widens to eight lanes. Grand Avenue is geographically elevated above most of downtown Los Angeles. It is generally four lanes across, with some widening for turn lanes at intersections, and carries northbound and southbound traffic between 1st and 2nd Streets.

Photo 12. *Broadway, looking north from 9th Street, January 25, 2016.*

Currently, Hill Street is a two-way street with four traffic lanes. Hill Street also includes a center turning lane. Broadway has three lanes: one southbound and two northbound. Between Olympic and 11th Streets, South Figueroa Street has traffic lanes for both northbound and southbound traffic and is seven lanes across. North of Olympic Boulevard, South Figueroa Street becomes a one-way street, with only northbound traffic using four to five lanes. Ninth Street is a one-way street, with only eastbound traffic using four lanes between South Figueroa Street and Grand Avenue and three lanes from Grand Avenue to Broadway in the project alignment. From South Broadway to South Flower Street, 11th Street is a two-lane, one-way western route. At South Flower Street, this road widens to six lanes and includes eastbound traffic. Between South Figueroa Street and South Broadway, 7th Street carries eastbound traffic in one lane and westbound traffic in one to two lanes, with a parking/turn lane on either side and a center turn lane at most intersections.

Photo 13. *Hill Street, looking south from 6th Street, January 25, 2016.*

Today, the corridors in the project alignment are heavily used city streets with both vehicular and bus traffic. There are a few remnants related to the streetcar era, such as Angel's Flight (listed in the NRHP and CRHR, HCM #4) and the Subway Terminal Building (now an apartment building known as Metro 417, listed in the NRHP and CRHR, HCM #177), including the metal anchor hooks on buildings that held cables for the streetcars.

The setting includes sidewalks of various widths, mature and newly planted street trees, various styles of light poles, parking meters, bike racks, trash cans, and other related street furniture. Additionally, traffic lights include signal heads on one-story high poles at corners, as well as two-story elevated arms that hang over the intersections and pedestrian crosswalks. Most buildings have been built out to the public right-of-way/sidewalk.

Methodology

In accordance with 36 CFR Section 800.4(a)(1 through 4), FTA sought consultation with SHPO on the adequacy of the proposed scope of efforts to identify historic properties in the project alignment. Based on a February 14, 2013 phone call, staff from SHPO, FTA, LADOT, and Metro, the study area was preliminarily defined as those parcels adjacent to the project corridor described in the definition of the 7th and 9th Street Alternatives (both with or without the Grand Avenue Extension) and would encompasses all project components, including proposed maintenance and storage facility options and TPSS sites. The study area is shown in Figure 3.

On April 14, 2013, FTA sent a letter initiating consultation with SHPO that reiterated the points established during the February 14, 2013 phone call. On June 19, 2013, SHPO responded to the consultation request letter and concurred with this identification strategy. A copy of both letters can be found in Appendix A.

In accordance with established practice, ICF International staff consulted national, state, and local inventories of architectural and historic resources to determine the location of previously documented historic and architectural resources proximate to the project alignment.

The following standard sources of information were consulted in the process of compiling this report.

- National Register of Historic Places (http://www.cr.nps.gov/nr)
- California Historical Landmarks (California Office of Historic Preservation 1996)
- California Points of Historical Interest (California Office of Historic Preservation 1992)
- California Register of Historical Resources
- California Historical Resources Inventory
- City of Los Angeles Historic Cultural Monuments

On August 23, 2012, a records search was conducted at the South Central Coastal Information Center in Fullerton, California. The research focused on the identification of previously recorded historic built environment, archaeological, and prehistoric resources within a quarter-mile radius of the study area. Research involved a search of records, including historical site inventories, archaeological site records and reports, and historic U.S. Geological Survey topographic maps. National, state, and local inventories of architectural and historic resources were reviewed to determine the location of previously documented historic and architectural resources proximate to the project corridor. These included standard sources of information, such as the NRHP, CRHR, California Historic Landmarks (CHLs), California Points of Historical Interest (CPHI), California Historical Resources Inventory, and City of Los Angeles HCMs.

This records search determined that 82 studies were conducted within a quarter-mile radius of the study area. Of these, 19 studies were previously conducted within portions of the study area. A total of 132 properties and one historic district have been recorded within the boundaries of the APE. Figure 4 provides a visual representation of the properties in the proposed study area that were identified during the records search as NRHP listed or eligible or locally listed.

Ten properties were previously listed on the NRHP and 43 properties were previously determined eligible for the NRHP. Some of the properties are historic districts with multiple contributing buildings, which are not tallied in the above numbers.

One NHL is located within the proposed project study area: the Bradbury Building, 304 South Broadway, listed May 5, 1977 (Los Angeles National Historic Landmarks 2013).

There are eight additional NRHP-listed properties and one NRHP-listed district located within the study area (Table 1). These buildings are colored red on the maps in Figure 4.

One property within the quarter-mile radius of the study area is listed as a CPHI: CPHI-LAN-043/19-166953, Pacific Electric Building at 610 South Main Street. No other properties within a quarter-mile radius of the study area are listed as CHLs or CPHIs. No properties within the study area are listed as a CHL.

Table 1. Properties Included in the NRHP and Listed in the CRHR[a]

Name	Address/ Location	Map Reference Number	Status
Broadway Theatre and Commercial District Boundary increase[b]	242–947 Broadway	7	Increased the boundary of the district and revised contributors/non-contributors.
Bradbury Building	300 S Broadway	9	Listed as an NHL, and included on the NRHP under Criteria A and C, for architecture/engineering. Period of significance is 1893. This property was declared HCM #6.
Broadway Theatre and Commercial District	300–939 S Broadway	7	Listed on the NRHP under Criteria A and C for architecture, commerce, and entertainment/recreation. Period of significance is 1894–1931. There are 60 contributing buildings, 38 non-contributing buildings, and three vacant lots within this district.[c] This district was declared HCM #2306.
Million Dollar Theater/ Edison Building	301 S Broadway	8	Listed on the NRHP under Criteria A and C, for an event and architecture/engineering._ Period of significance is 1916.
Friday Morning Club	940 S Figueroa Street	50	Listed on the NRHP under Criterion C for associations with social/humanitarian activities, theater, and radio. Period of significance from 1923–1924. This property was declared HCM #196.
NY Cloak & Suit House, Brockman Building	708 Grand Avenue & 520 W 7th Street	38	Listed on the NRHP under Criteria A and C, for community planning/development, architecture, and commerce. Period of significance from 1912–1925.
Angels Flight Railway/Angels Flight Railway Station House	S Hill Street, north of W 4th Street	10	Listed on the NRHP under Criteria A and C, for an event and architecture/engineering. _Period of significance is 1905—circa 1950. This property was declared HCM #4.

Name	Address/ Location	Map Reference Number	Status
Subway Terminal Building, 417 Metro	417 S Hill Street	13	Listed on the NRHP under Criteria A and C for transportation and architecture. Period of significance from 1925–1955. This property was declared HCM # 177.
Title Guarantee and Trust Company Building	401–411 W 5th Street/ 425–457 S Hill Street	15	Listed on the NRHP under Criterion C for architecture. Period of significance is 1930–1931. This property was declared HCM # 278.
Roosevelt Building	727 W 7th Street	26	Listed on the NRHP under Criteria A and C for architecture. Period of significance is 1926. This property was declared HCM # 355.
Garfield Building	403 W 8th Street	43	Listed on the NRHP under Criterion C for architecture/ engineering. Period of significance is 1929.

Source: ICF 2013.

[a] California State Historic Preservation Office. *California Historic Resources Inventory System*. Last updated on April 4, 2012.

[b] There was no change in the net number of contributors. Six buildings originally considered to be contributing had their status changed to non-contributing, while six different buildings within the district were determined to be contributors. Two new non-contributing resources were identified within the district. Addresses identifying the current contributors and non-contributors to the historic district can be found in Appendix D. Accessed from http://www.NRHP.com/CA/Los+Angeles/state.html.

[c] Please see Appendix E for a list of character-defining features of the district.

When the Broadway Theatre and Commercial District boundary was increased in 1998, the authors reiterated that the significance of this district was conveyed in part by the cohesive nature of the building setbacks, the materials used in the building façades, and the positioning of storefronts at street level. In addition to the contributing buildings, additional character-defining features of the district were identified in 1998. These are listed in Tables F-1 and F-2 in Appendix E.

Forty-two properties and one historic district were previously determined eligible for the NRHP (Table 2).

Table 2. Properties Previously Determined Eligible for the NRHP and Listed in the CRHR[a]

Name	Address/Location	Map Reference Number	Status
Los Angeles Civic Center Historic District	Various addresses, downtown Los Angeles	1	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1972. It is listed in the CRHR.
Barry's	543–545 S Broadway	20	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1901. It is listed in the CRHR.
Clifton's Cafeteria	648 S Broadway	35	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1935. It is listed in the CRHR.
Clifton's Cafeteria Terrazzo Sidewalk	648 S Broadway	34	Determined eligible for the NRHP under Criterion C for its high artistic qualities. Period of significance is 1935-1939. It is listed in the CRHR.
Wurlitzer Building	818-820 S Broadway	45	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1913–1923. It is listed in the CRHR.
Burgers	828 S Broadway	46	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1927. It is listed in the CRHR.
Western Pacific Building	1023 S Broadway	53	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1925.
LA Transit Building	1050–1070 S Broadway	54	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1920.
Commercial Club, Hotel Case	1100 S Broadway	56	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1925.
Examiner Building/Herald Examiner	1111 S Broadway	55	Determined eligible for the NRHP under Criteria B and C for a significant person and architecture. Period of significance is 1914. It is listed in the CRHR. This property was declared HCM # 178.
Hotel Figueroa	939 S Figueroa Street	51	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1925. It is listed in the CRHR.
Blow-Up Boutique	947 S Figueroa Street	52	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1939. It is listed in the CRHR.

Name	Address/Location	Map Reference Number	Status
Dorothy Chandler Pavilion	135 N Grand Avenue	2	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
Walt Disney Concert Hall	111 S Grand Avenue	6	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 2003. It is listed in the CRHR.
Los Angeles County Courthouse/Stanley Mosk Los Angeles County Courthouse	111 N Hill Street	3	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
The Aldine, The Whipple, Myrick Hotel	324–326 Hill Street	11	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1893–1897. It is listed in the CRHR.
The Aldine, Myrick Hotel	342 S Hill Street	12	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1897. It is listed in the CRHR.
Clark Hotel & Beauty School	426 S Hill Street	14	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1912. It is listed in the CRHR.
Pershing Square Building	448 S Hill Street	16	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1923. It is listed in the CRHR.
William Fox Building	608 S Hill Street	21	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1930.
Sun Reality, Banker's Building	629 S Hill Street	22	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1930.
Bullocks Downtown Department Store	632 S Hill Street	23	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1906. It is listed in the CRHR.
Los Angeles Fur Mart Building	635 S Hill Street	24	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1925.
Great Western Savings Bank	700 S Hill Street	42	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922.
Foreman & Clark Building	701 S Hill Street	41	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1928. It is listed in the CRHR.

Name	Address/Location	Map Reference Number	Status
Union Bank and Trust Company	760 S Hill Street	44	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1921. It is listed in the CRHR.
Biltmore Hotel	515 S Olive Street	17	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1923. It is listed in the CRHR. This property was declared HCM # 60.
Bank of Italy/ A.P. Giannini Building	649 S Olive Street	31	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922. This property was declared HCM # 354.
Ville De Paris Store, La Merchandise	700–712 S Olive Street	40	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1917.
None	275 W 1st Street	5	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1942. It is listed in the CRHR.
Los Angeles County Law Library/Mildred L. Lillie Building	301 W 1st Street	4	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1925–1971. It is listed in the CRHR.
None	326 W 5th Street	19	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1897. It is listed in the CRHR.
Pantages/Warner Brothers Theatre	401 W 7th Street	33	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1919.
LA Athletic Club	431 W 7th Street	32	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1912. This property is also listed as HCM # 69.
Coulter Dry Goods Co	500 W 7th Street	39	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1917.
Brock & Company Jewelry Store	513-515 W 7th Street	30	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922. This property was declared HCM # 358.
Brack Shops	527 W 7th Street	29	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1913.
Quinby Building, Japan Airlines	529 W 7th Street	28	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1926.

Name	Address/Location	Map Reference Number	Status
Boston Store, J. W. Robinson Company	600 W 7th Street	37	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1914. It is listed in the CRHR. This property was declared HCM # 357.
Union Oil Building, Kyowa Bank	617 W 7th Street	27	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1922.
Barker Bros.	800 W 7th Street	36	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1925. It is listed in the CRHR. This property was declared HCM # 135.
Fine Arts Building, Global Marine Building	807 W 7th Street	25	Determined eligible for the NRHP under Criteria A and C for association and architecture. Period of significance is 1926. It is listed in the CRHR. This property was declared HCM # 125.
Insurance Exchange, Pacific Bell	855 S Hill Street	47	Determined eligible for the NRHP (Criterion N/A). Period of significance is 1924.

Source: ICF 2013.

[a] California State Historic Preservation Office. *California Historic Resources Inventory System*. Last updated on April 4, 2012.

Table 3 provides a list of additional properties declared by the City of Los Angeles to be HCMs that were not identified in Table 1 or Table 2.

Table 3. Additional Properties Declared by the City of Los Angeles to Be Historic Cultural Monuments

Name	Address/Location	Map Reference Number[3]	Status
Pershing Square, Spanish-American War Memorial	Northeast corner of W. 5th Street and S. Olive Street	18	Declared on 3/23/1980 as HCM #480.
May Company Garage	9th and Hill Streets	49	Declared on 6/1/2011 as HCM #1001.
Original Pantry	809-817 West 9th Street and 873-877 South Figueroa Street	48	Declared on 10/5/1982 as HCM #255.

Source: ICF 2016.

Office of Historic Resources. Los Angeles Historic Cultural Monuments. Last updated on April 15, 2015.

[3] Properties that have been demolished do not have a corresponding Map Reference Number.

Through this undertaking, the Spanish American War Memorial was determined ineligible for the NRHP. Research into the history of the object did not reveal any association with important persons or events; there is no known sculptor or designer, and it was not found eligible under Criteria A or B. The monument is not in its original location and its design, while displaying a style that was in fashion at the time it was assembled, is not a significant example. Therefore it is not eligible under Criterion C.

The May Company Garage was determined eligible for the NRHP as a contributor to a historic district—the Downtown Hill Street district—and the Original Pantry was determined eligible for the NRHP.

The following properties were either listed as HCMs or previously determined eligible for local listing, but they have been since demolished or destroyed by fire:

- The Salt Box (Former Site of), 339 S. Bunker Hill Avenue (now Hope Street), declared on 8/6/1962 as HCM #5, relocated to Heritage Square in 1969, and destroyed by fire on 10/09/1969.
- Philharmonic Auditorium (Former Site of), 427 W. 5th Street, declared on 7/2/1969 as HCM #61, demolished in 1985.
- Harry M Hoffman/Fleet Services, 928 S Flower Street/ 600 W. 9th Street, determined locally eligible through a historic survey. It appears to have been demolished.
- 807 S. Figueroa Street, determined locally eligible through a historic survey, date of survey unknown. It appears to have been demolished, current building dates from 1991.
- Colombo’s Parking Garage, 815 S. Figueroa Street, determined locally eligible through a historic survey, date of survey unknown. It appears to have been demolished, current building dates from 1991.
- American Baptist Building, 816 S. Figueroa Street, determined locally eligible through a historic survey, date of survey is unknown.
- Colombo’s Restaurant, 821 S. Figueroa Street, determined locally eligible through a historic survey, date of survey unknown. It appears to have been demolished, current building dates from 1976.
- Association Stationers and Printers, 822 S. Figueroa Street, determined locally eligible through a historic survey, date of survey unknown. It appears to have been demolished, current building dates from 1984.
- Brill Building, 834 S. Figueroa Street, determined locally eligible through a historic survey, date of survey unknown. It appears to have been demolished, current building dates from 1984.

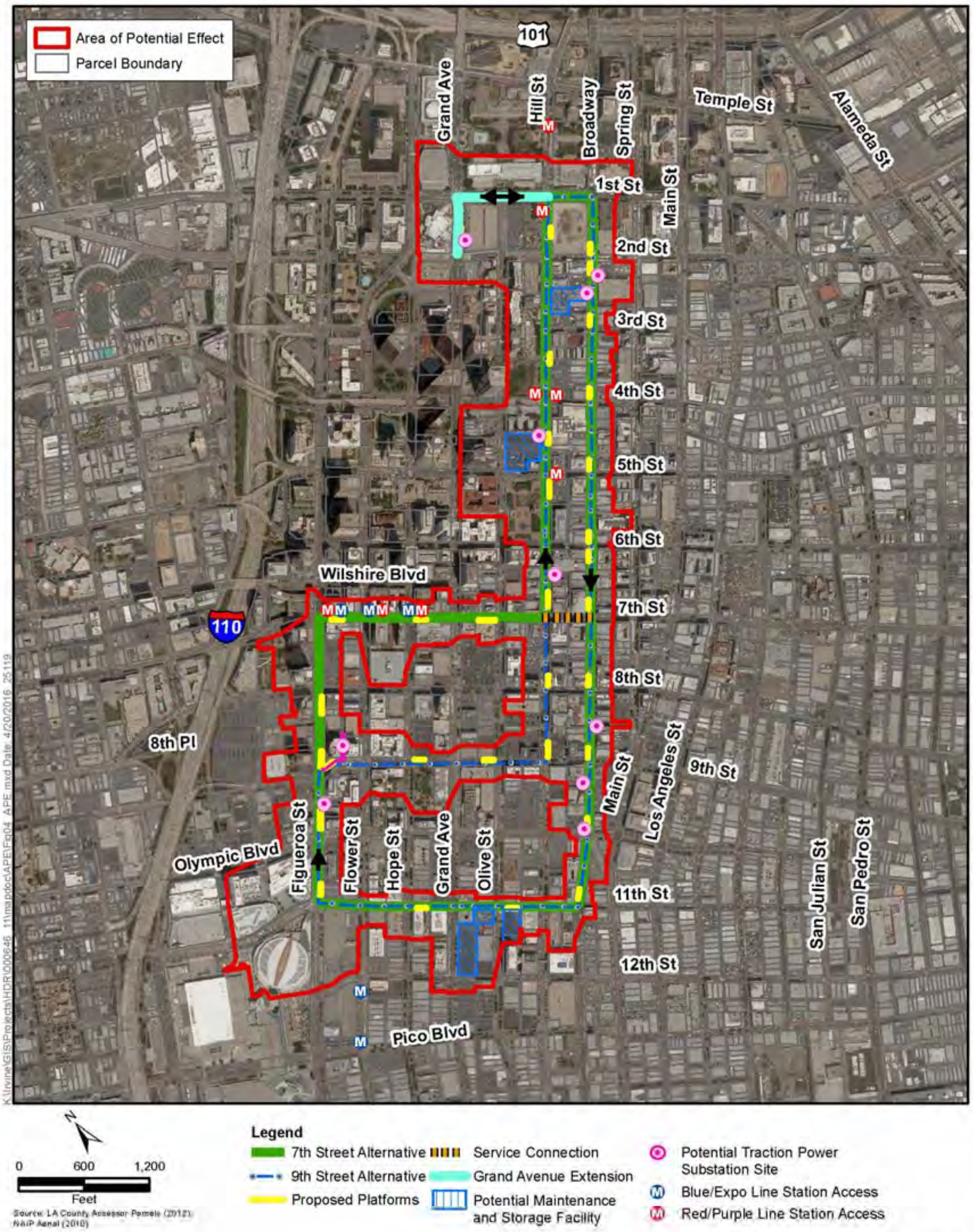


Figure 3
Area of Potential Effect for the Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

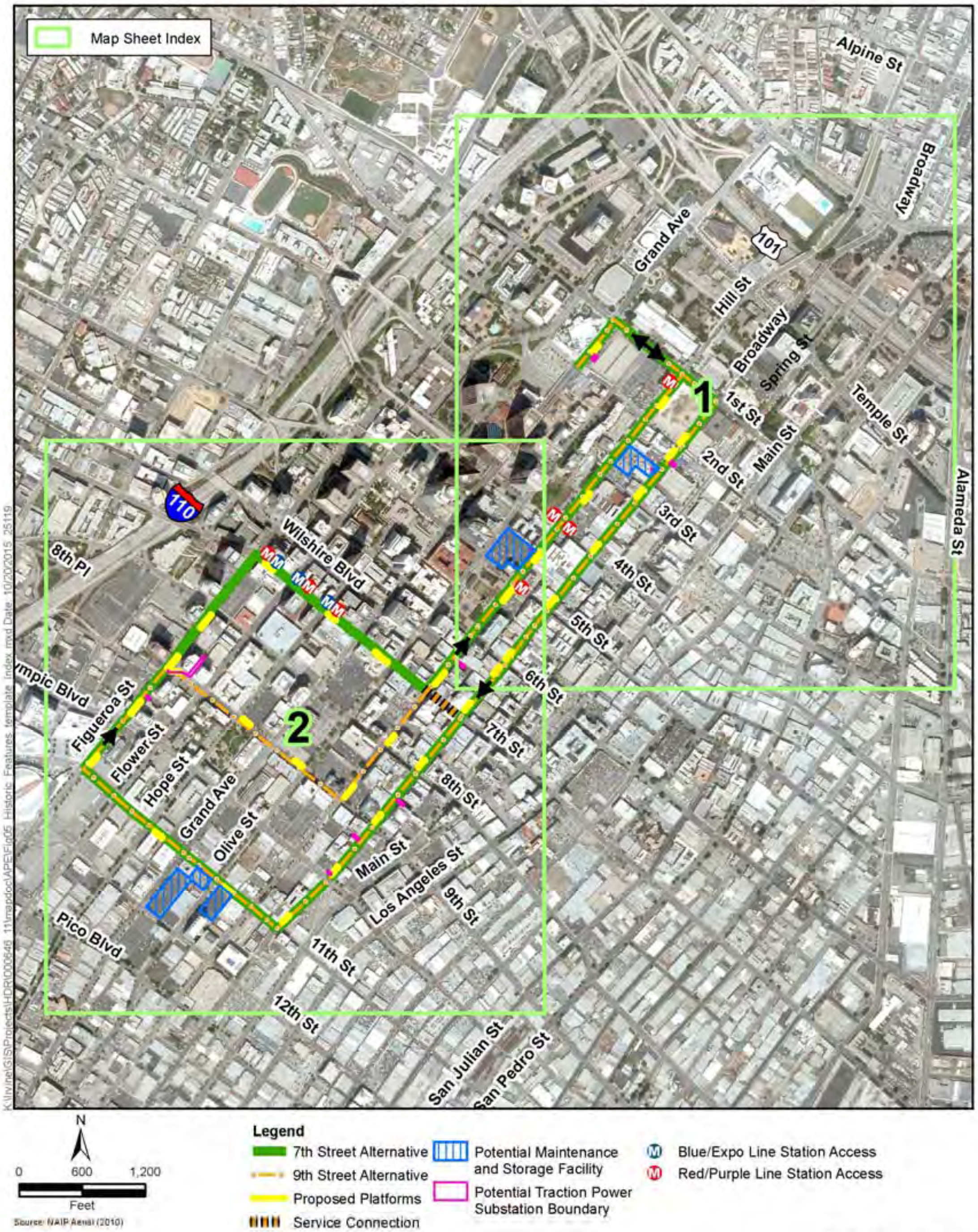


Figure 4 Index
National Register Properties and Local Landmarks
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

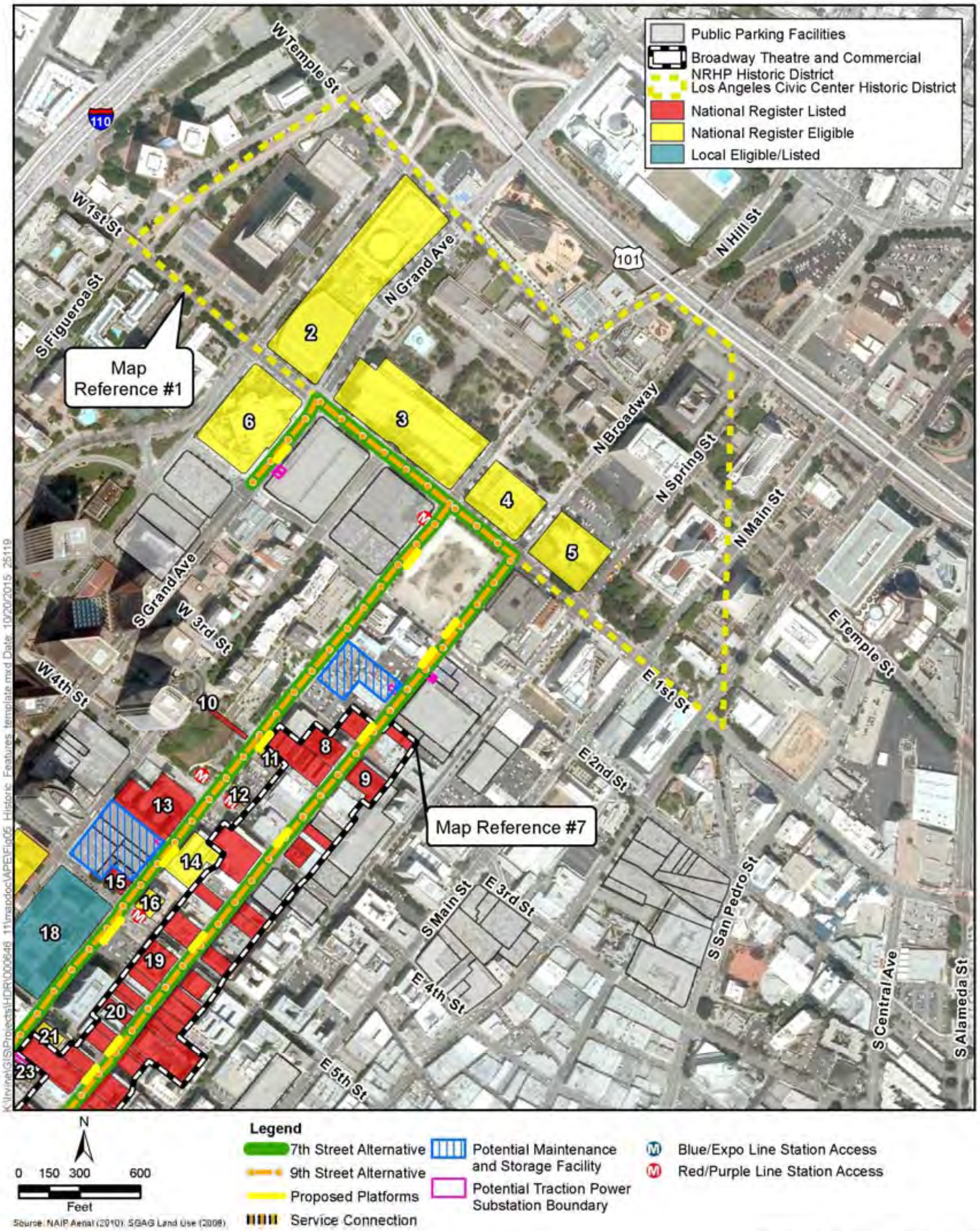


Figure 4 Sheet 1 of 2
National Register Properties and Local Landmarks
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

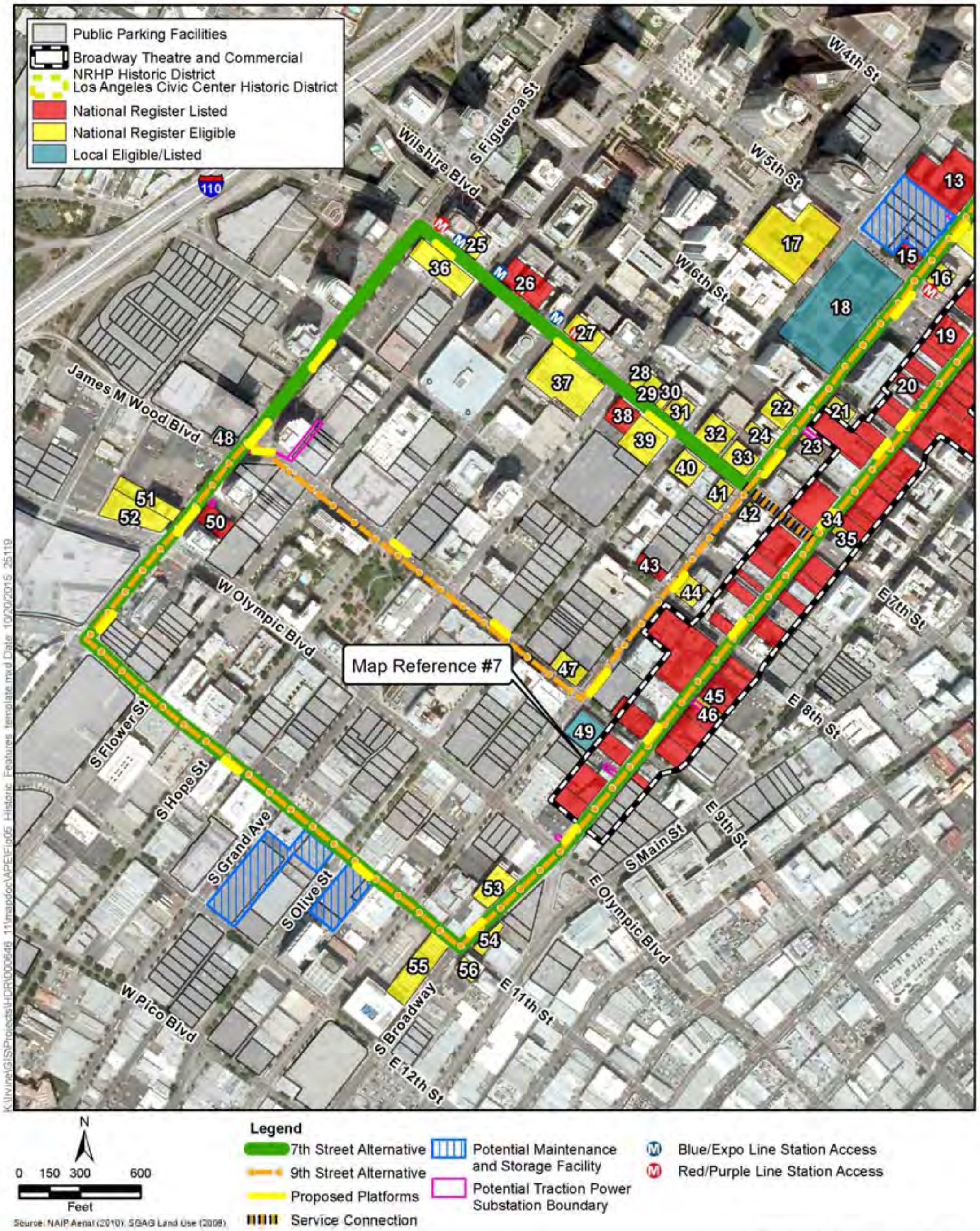


Figure 4 Sheet 2 of 2
National Register Properties and Local Landmarks
Restoration of Historic Streetcar Service in Downtown Los Angeles

This page intentionally left blank.

Public Participation

In accordance with 36 CFR Section 800.4(a)(3), on April 16, 2013, letters were sent to consulting and interested parties who may have knowledge of or concerns regarding historic properties in the area and to request information regarding any historic buildings, districts, sites, objects, or archaeological sites of significance within the project alignment. Copies of these letters are located in Appendix B. The letters were sent to the following recipients.

Government Agencies

Historic Cultural Monuments and the Cultural Heritage Commission
200 North Spring Street, Room 620
Los Angeles, CA 90012
213.978.1200

Office of Historic Resources
Department of City Planning
Ken Bernstein, Manager
200 North Spring Street, Room 620
Los Angeles, CA 90012
213.978.1200

Historical Societies

Los Angeles City Historical Society
P.O. Box 862311
Los Angeles, CA 90086
213.473.8449

Los Angeles Conservancy
Marcello Vavala, Preservation Associate
523 West 6th Street, Suite 826
Los Angeles, CA 90014
213.623.2489

Historical Society of Southern California
P.O. Box 93487
Pasadena, CA 91109

Government Agencies

Historic Cultural Monuments and the Cultural Heritage Commission
200 North Spring Street, Room 620
Los Angeles, CA 90012
213.978.1200

Office of Historic Resources
Department of City Planning
Ken Bernstein, Manager
200 North Spring Street, Room 620
Los Angeles, CA 90012
213.978.1200

Historical Societies

Los Angeles City Historical Society
P.O. Box 862311
Los Angeles, CA 90086
213.473.8449

Los Angeles Conservancy
Marcello Vavala, Preservation Associate
523 West 6th Street, Suite 826
Los Angeles, CA 90014
213.623.2489

Historical Society of Southern California
P.O. Box 93487
Pasadena, CA 91109

Architectural Organizations

AIA
3780 Wilshire Boulevard
Los Angeles, CA 90010
213.639.0777

Art Deco Society of Los Angeles
P.O. Box 972
Hollywood, CA 90078
310.659.3326

Streetcar/Railroad Organizations

Electric Railway Historical Society of Southern California
1 World Trade Center
P.O. Box 32161
Long Beach, CA 90832

Pacific Electric Railway Historical Society
P.O. Box 431
San Gabriel, CA 91778

Railway and Locomotive Historical Society
Southern California Chapter
P.O. Box 2250
Pomona, CA 91769
909.623.0190

Los Angeles Railroad Heritage Foundation
1500 West Alhambra Road
Alhambra, CA 91801

Museums

American Society of Military History and Museum
2615 S Grand Avenue
Los Angeles, CA 90007
213.746.1776

Avila Adobe Museum
125 Paseo de la Plaza, Suite 400
Los Angeles, CA 90012
213.485.6855

The Broad Foundations/The Broad
10900 Wilshire Boulevard, 12th Floor
Los Angeles, CA 90024
310.954.5000

California African American Museum
600 State Drive
Los Angeles, CA 90001
213.744.7432

Chinese American Museum
425 North Los Angeles Street
Los Angeles, CA 90012
213.485.8567

Grammy Museum
800 West Olympic Boulevard A245
Los Angeles, CA 90015
213.765.6800

Japanese American National Museum
100 North Central Avenue
Los Angeles, CA 90012
213.625.0414

Museum of Contemporary Art
250 South Grand Avenue
Los Angeles, CA 90012
213.626.6222

Museum of Neon Art
P.O. Box 631
Glendale, CA 91209
213.489.9918

National History Museum
900 Exposition Boulevard
Los Angeles, CA 90007
213.763.3466

Sports Museum of Los Angeles
1900 South Main Street
Los Angeles, CA 90007
888.540.8223

Theatrical Organizations

Los Angeles Historic Theater Foundation
P.O. Box 79172
Los Angeles, CA 90079-0172
213.999.5067

Los Angeles Theatre Center
514 South Spring Street
Los Angeles, CA 90013
213.489.0994

Responses Received

As of the completion of this technical report, no responses have been received.

Field Survey

A field survey of the architectural resources in the study area was conducted by the following architectural historians and historians at ICF International who meet the Secretary of the Interior's Professional Qualifications Standards: Jessica B. Feldman, Elizabeth Hilton, and Andrew Bursan. The field survey was conducted on March 13, 15, and 22, 2013. Andrew Bursan was the author of the historic context, Elizabeth Hilton prepared the environmental setting and the inventory forms. Jessica Feldman was responsible for coordination of these activities and the writing of the technical report.

In accordance with 36 CFR 800.4 (b)(2) and the identification strategy agreed upon by the lead agencies and SHPO, the architectural survey included the recordation of pre-1966 properties in the study area, even if they have lost integrity. Properties that are potentially eligible and have not been previously listed in the NRHP (Table 1) or previously identified as NRHP-eligible (Table 2) or locally listed (Table 3) are listed in Table 4. Two buildings, two objects, and two historic districts were identified as eligible for the NRHP as a result of the survey and, pursuant to Section 106, concurrence with this determination would be sought from SHPO.

Table 4. Properties Eligible for the NRHP, Pending SHPO Concurrence Pursuant to Section 106

Name	Address/Location	Date Constructed	Status
Downtown Hill Street District	Hill Street between W. 6th and 8th Streets	1903–1931	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1903-1931. This cohesive grouping of buildings demonstrates the growth of Los Angeles during the early 1900s, as well as the popular architectural styles designed by renowned architects of the time period. Therefore, this historic district is eligible for the NRHP under Criterion C at the local level of significance. Currently, several of the buildings are already listed on the NRHP, CRHR, and as local landmarks.
Air Raid Siren Discontiguous District: Air Raid Sirens #00, and 011	West side of Hill Street, south of 7th Street; south side of Olympic Boulevard, west of Broadway	c. 1950	Determined eligible for the NRHP under Criterion A for its association with World War II Safety in Los Angeles as a contributor to a district. Period of significance is circa 1950. The Air Raid Sirens appear to be contributors to a larger discontiguous district that once consisted of 225 objects; evaluating such a district is beyond the scope of this Project.
W 7th Street District	W 7th Street between South Figueroa Street and South Main Street	1903–1936	Determined eligible for the NRHP under Criteria A and C. Period of significance is 1903–1936. The 7th Street development during the 1910s and 1920s has been noted for its upscale retail and distinctive office skyscrapers, which continues to define its modern built environment. The district is also eligible due to the architectural character of the street in high academic styles that retain high degrees of integrity. Furthermore, well-known architects during the period of significance designed these iconic buildings, especially as large commercial blocks. Currently, several of the buildings are already listed on the NRHP, CRHR, and as local landmarks.

Name	Address/Location	Date Constructed	Status
Insurance Exchange Building Company	318 W 9th Street	1924	Determined eligible for the NRHP under Criterion C for architecture. Period of significance is 1924. This building was previously determined eligible for the NRHP as a result of the 1983 Community Redevelopment Agency Central Business District Survey. This building retains a high degree of integrity and is a distinguished example of this style as a commercial building.
Original Pantry	809-817 West 9th Street and 873-877 South Figueroa Street	1917	Determined eligible for the NRHP under Criterion A for its association with downtown Los Angeles as an early diner still in existence. Period of significance is 1924. With its relatively unmodified interior and traditional menu, the Pantry retains a high level of integrity despite the evolution of restaurant décor and food trends of the past half century. As such, the restaurant is eligible for the NRHP for its important association with Los Angeles restaurant history from the 1920s to the present day.
Source: ICF 2013.			

Two buildings, two objects, and two historic districts were identified as potentially eligible for the NRHP as a result of the survey. The Air Raid Sirens appear to be contributors to a larger discontiguous district; evaluating such a district is beyond the scope of work for this Project. Air Raid Sirens #008 and 093 were determined eligible for the NRHP as contributors to the Los Angeles Civic Center District, concurred by SHPO, setting the precedence for NRHP eligibility for existing Air Raid Sirens.

For pre-1966 properties in the study area that were determined to be ineligible for the NRHP as a result of the survey, a California Department of Parks and Recreation Primary Record (DPR 523A) form was prepared. A list of those properties follows Table 3. Post-1966 properties were not identified during the survey unless they meet NRHP Criteria Consideration G.

Properties in Table 4 have been evaluated in accordance with 36 CFR 800.4(c) and both DPR 523 A and Building, Structure, Object (DPR 523 B) forms have been prepared for each resource. Copies of the DPR 523A and DPR 523B forms for these properties are in Appendix C.

The following is a list of properties that have been determined ineligible for the NRHP as a result of this undertaking. None of these properties were determined eligible for the NRHP under Criteria A, B, C, and/or D. Copies of the DPR 523A forms for these properties are in Appendix C.

- South Broadway: 205, 207, 233, 237, 248, 318, 341, 347, 353, 425, 445, 450, 523, 525, 535, 543, 621, 629, 725, 730, 735, 749, 900, 913, 950, 960, 1014, 1051, and 1053
- 1020 South Figueroa Street
- 1100 South Flower Street
- 1100 South Grand Avenue
- South Hill Street: 208, 222, 332, 338-348, 606, 607, 628, 645, 734, 901, and 1101–1111
- 655 South Hope Street
- South Olive Street: 643, 1057, and 1060
- 316 West 2nd Street
- 315 West 6th Street
- West 7th Street: 219, 316, 410–418 (3 parcels, 1 building; 410, 412, 418), and 801
- West 8th Street: 313 and 317
- 425 West 11th Street
- Spanish-American War Memorial

This page intentionally left blank.

Proposed Project and Potential Effects

The following section addresses the proposed Project and its potential effects on historical resources.

Project components include the construction of guideway and trackwork, paving, streetcar platforms, relocation of parallel utilities in conflict with the trackway, encase utilities crossing under the trackway, construction of track drains, and an MSF. It would also include installation of specialty system work such as TPSS, overhead contact wire, communications, and train/traffic signaling.

A temporary laydown area for construction would be located in the vicinity of the project study area. Three alternative sites have been identified preliminarily.

City of Los Angeles Significance Thresholds

A project would normally have a significance impact on historical resources if it would result in a substantial adverse change in the significance of a historical resource. A substantial adverse change in significance occurs if the project involves:

- Demolition of a significant resource;
- Relocation that does not maintain the integrity and significance of a significant resource;
- Conversation, rehabilitation, or alteration of a significant resource that does not conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings; or
- Construction that reduces the integrity or significance of important resources on the site or in the vicinity.

Overall Assessment

Traction Power Substations and Overhead Contact System

The proposed TPSS would typically be located outside of street rights-of-way. None are proposed at locations where there are historical resources. Within the Broadway Theatre and Commercial District, TPSS would be located in non-contributing parking lots or within non-contributing or non-historic parking garages. None of the TPSS sites would be located on or in the immediate vicinity of either the Dorothy Chandler Pavilion or the Walt Disney Concert Hall, two buildings that did not have these types of structures as part of their historic setting.

TPSS construction at any of the 12 potential sites would not cause substantial adverse change in the significance of a historical resource. TPSS will be built with Sustainability elements and be designed to be consistent with the area's historic fabric. See Table 5 for the proposed locations of the TPSS sites.

As stated earlier, streetcars operated along the streets in the study area historically, and a system of poles and overhead wires existed for many decades, including during the period of significance for many of the NRHP-listed and eligible properties previously identified or identified during the intensive survey. Overhead cables were part of the historic setting. The integrity of the setting or the character of the properties would not be altered in such a manner as to diminish the relationship of those properties to their historic setting. Overhead cables would be installed to enhance and replicate the character of the historic district. The visual impacts analysis did not identify the OCS as a potentially adverse visual impact to the settings of any historic property. The specific locations of the poles have not been identified, but poles would be located within several feet of the existing curb. No poles would be installed where there is historic terrazzo in the Broadway Theater and Commercial District. The catenary poles and catenary wires would not cause a substantial adverse change in the significance of a historical resource because wires and poles were a part of the historic setting, and therefore, the integrity of the setting would not be altered. No HCM would be demolished, substantially altered, or relocated.

Table 5. Traction Power Substation Locations

Priority for Location	Address	Assessor's Identification Number (AIN)	Parcel Square Footage	Acquisition Type	Description
Recommended	Within public ROW Grand Ave and 2nd Street	--	--	--	This recommended site is at the north end of lower Grand Avenue. Large areas are available where a TPSS could be placed without interfering with loading docks or parking structure entrances.
Alternative	Northeast Corner of Grand Avenue and 2nd Street	5149-010-949	192,480	Partial	TPSS would be below street elevation and hidden behind an existing landscaped fence.
Recommended	208 S Broadway	5149-008-030	8,540	Partial	The Regional Connector lot is currently being designed to accommodate the Regional Connector Station. The opportunity to include the TPSS on the lot should be assessed with Metro and property owner to determine feasibility and capacity.
Alternative	229 S Broadway	5149-009-014	18,960	Partial	The parking lot on the west side of Broadway has the possibility of serving both the Broadway and Hill Street alignments.
Alternative/ Temporary	213 S Spring St	5149-008-029	471,443	Partial	Parking structure.
Recommended	826 S Broadway	5144-016-062	8,179	Partial	The property is categorized as a privately owned parking lot and has a small structure, Two Boots Pizza, on the site. It is recommended to place the TPSS directly behind the pizza stand.

Priority for Location	Address	Assessor's Identification Number (AIN)	Parcel Square Footage	Acquisition Type	Description
Alternative	913 S Broadway	5139-003-003	7,661	Partial	The property is categorized as a privately owned parking lot and has a small structure, Tacos Mexican Food, on the site. It is recommended to place the TPSS unit directly behind the food stand to prevent the unit from being an obstruction.
Alternative	951 S Broadway	5139-003-009	4,766.10	Partial	Located on the northwest corner of Broadway and Olympic Boulevard, categorized as a privately owned parking lot.
Recommended	833 S Flower St	5144-021-041	180,458	Partial	Located within the rear area of a parking structure adjacent to the alley between Figueroa and Flower Street and 8th and 9th Streets.
Alternative	928 S Figueroa St	5138-002-029	8,325	Partial	On Figueroa Street, south of 9th Street, there is a small parking lot, which is recommended for a TPSS.
Recommended	431 S Hill St	5149-027-013	32,460	Partial	Located west of Hill Street between 4th and 5th Streets.
Alternative	628 S Hill St	5144-003-024	1,225	Partial	A privately owned small parking lot on the east side of Hill Street, south of 6th Street. There is a small jewelry store on the site. The TPSS would be built behind the store, which would prevent the unit from being an obstruction.

Maintenance and Storage Facility

Four locations have been proposed for the MSF. The proposed locations for the MSF are identified in Table 6. There are no historical resources in the immediate vicinity of the following MSF Sites: Broadway and 2nd Street, 11th and Olive Streets (East), and 11th and Olive Streets (West).

The Hill and 5th Streets MSF site includes seven parcels used for surface parking that surround two sides of the Title Guarantee and Trust Building, located at 401–411 West 5th Street (425–457 South Hill Street), which is listed in the NRHP. The period of significance for this building is 1930–1931 and the setting of the building has been altered since that time; historically, W. 5th Street to the west of the building contained numerous buildings. Currently, this building is surrounded on the west and north by surface parking lots. The east and south façade, the primary elevations that convey its significance under Criterion C as one of the two best examples of a commercial building designed in the Art Deco style in Los Angeles, face Hill and 5th Streets, respectively. The Title Guarantee and Trust Building was declared HCM #278.

On the north side of the Hill and 5th Streets MSF site is the Subway Terminal Building (417 Metro) at 415-425 S. Hill Street/416-424 S. Olive Street. This Italian Renaissance building is eligible for the NRHP under Criterion A for its association with the Pacific Electric interurban railway system and under Criterion C at the local level as an excellent example of the work of the architectural firm Schultze & Weaver. The period of significance is 1925–1955. The primary elevation faces east toward S. Hill Street. The south elevation, a secondary façade, faces the proposed MSF site. Previously, the old Hill Street Terminal, which was a Pacific Electric facility, was located at this location, and it was later occupied by a grocery store when the Subway Terminal opened. Although the setting of this building has been altered over time, it still conveys its significance under both Criterion A and Criterion C. The Subway Terminal Building was declared HCM #177.

The current setting for both buildings is urban and vehicle-related, and the parking lots abut secondary, and less significant, elevations. Although the proposed MSF site is now occupied by surface parking lots, historically there were streetcar related-structures and tracks, as well as other commercial buildings, on these parcels. The placement of an MSF site on these parcels would not change the character of the property's use and would not alter the setting such that it could no longer convey its historic significance. The Hill and 5th Streets MSF site would not demolish or materially alter in an adverse manner those physical characteristics of the Title Guarantee and Trust Building and the Subway Terminal Building that convey their historical significance and justify their inclusion, or eligibility for inclusion, in the CRHR; therefore, construction of a maintenance and storage facility would not cause substantial adverse change in the significance of a historical resource. Neither of these two HCMs would be demolished, substantially altered, or relocated.

Table 6. Potential MSF Locations

Potential MSF Locations	Address	Assessor's Identification Number (AIN)	Parcel Square Footage	Existing Use
Broadway and 2nd Street Total acreage: Approx. 57,719SF	233 S Broadway	5149-009-018	18,960	Unoccupied single-story commercial building (former Goodwill)
	229 S Broadway	5149-009-014	18,960	Surface parking lot
	236 S Hill St	5149-009-011	14,168	Surface parking lot
	240 S Hill St	5149-009-025	5,631	Surface parking lot
Hill Street and 5th Street Total acreage: 98,690SF	431 S Hill St	5149-027-013	32,460	Surface parking lot
	440 S Olive St	5149-028-003	9,900	Surface parking lot
	427 W 5th St	5149-028-012	29,040	Surface parking lot
	441 S Hill St	5149-028-013	11,130	Surface parking lot
	415 W 5th St	5149-028-011	4,760	Surface parking lot
	447 S Hill St	5149-028-009	5,040	Surface parking lot
	437 S Hill St	5149-028-004	6,360	Surface parking lot
11th Street and Olive Street (East) Total acreage: 51,197SF	1124 S Olive St	5139-019-011	10,138	Surface parking lot
	218 W 11th St	5139-019-015	4,759	Surface parking lot
	1100 S Olive St	5139-019-040	31,500	Surface parking lot
	Alley		4,800	Alley
11th Street and Olive Street (West) Total acreage: 103,300SF	1120 S Grand Ave	5139-020-024	64,000	Surface parking lot
	1114 S Grand Ave	5139-020-016	9,300	Surface parking lot
	1105 S Olive St	5139-020-025	18,000	Surface parking lot
	Alley		12,300	Alley
Source: Metro 2015; ICF 2012				

Platforms/Streetcar Stops

Streetcar stops would be placed approximately every block in the north-south direction and approximately every other block in the east-west direction. Approximately 25 platforms would be located along the streetcar route.

As discussed in the Historic Architectural Survey and Evaluation Report and Finding of No Adverse Effect for the Broadway Streetscape Improvement Project (HRG 1998), the concrete sidewalks within the Broadway Theatre and Commercial District are not character-defining features; however, some terrazzo designs embedded in the sidewalks are character-defining features of the district. Other historic sidewalk features, including vault lights, basement vault hatch doors, flagpole holders, and utility and ventilation covers are also considered character-defining features of the Broadway Theater and Commercial District. Individually significant historical resources may include these historic sidewalk features, along with brass or ceramic inserts that are unique to that resource. There is also a possibility that historic sidewalk features may be discovered during construction because they have been obscured over time by a layer of asphalt or concrete. It is not anticipated that construction would damage historic terrazzo or other historic sidewalk features,; however, where construction of platforms and station stops would take place near historic sidewalk features, conditions would be required to protect and preserve the material in place during construction. These measures would reduce the potential for an adverse effect to the historic district. Should incidental damage occur during construction, the historic sidewalk feature would be replaced in kind by a qualified contractor in a manner consistent with the Standards.

Some platforms would be constructed adjacent to existing sidewalks, but within the road right-of-way, putting more distance between the platforms and historic properties. Therefore, construction of sidewalk extensions would not cause an adverse change in the significance of a historical resource. No HCM would be demolished, substantially altered, or relocated.

Findings

Within the study area, there are 10 properties listed in the NRHP and 43 properties that were previously determined eligible for listing on the NRHP. Two buildings, two objects, and two historic districts were identified as potentially eligible for the NRHP as a result of the field survey of the study area.

Vibration that could occur during the construction of the Project could have the potential to damage historical resources, as could construction activities near historic sidewalk features on Broadway. The Noise and Vibration Technical Report includes mitigation measures to avoid damage and potential adverse changes to historical resources due to vibration during construction. As with the conditions proposed for the location of a construction yard, conditions are proposed for construction activities near the historic sidewalk features, which would reduce the potential for substantial adverse change to historical resources.

Under the City of Los Angeles thresholds, there would be no substantial adverse change to historical resources. The Restoration of the Historic Streetcar Service Project in Downtown Los Angeles would not result in the conversion of or rehabilitation to CRHR-listed or eligible properties that would not conform to the Secretary of the Interior' Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. No HCMs would be demolished, substantially altered, or relocated as a result of the Project.

Therefore, although the study area contains a total of 59 NRHP-listed and eligible properties, there is no adverse effect anticipated from the construction and operation of the Project in downtown Los Angeles.

This page intentionally left blank.

References

California Office of Historic Preservation

1977a Broadway Theater and Commercial District National Register nomination.

1977b Spring Street Financial District National Register nomination.

1992 *California Points of Historical Interest*. California State Parks, Sacramento, CA. Accessed March 2013.

1996 *California Historical Landmarks*. California Historical Landmarks in Los Angeles County. California State Parks, Sacramento, CA. Electronic document, http://ceres.ca.gov/geo_area/counties/Los_Angeles/landmarks.html, accessed March 2013.

2012 *California Historic Resources Inventory System*. California State Parks, Sacramento, CA.

Caughey, John and LaRee

1977 *Los Angeles Biography of a City.* Los Angeles: Univ. California Press.

City of Los Angeles

2001 Central City Community Plan

2013 *ZIMAS*. Electronic document, zimas.lacity.org, accessed March 2013

Comer, Virginia L.

1996 *Angels Flight*. Los Angeles: Historical Society of Southern California. 16-18.

County of Los Angeles Tax Assessor

2013 *Parcel Viewer*. Electronic document, assessormap.co.la.ca.us/mapping/viewer.asp, accessed March 2013.

Crump, Spencer

1965 *Ride the Big Red Cars*. Costa Mesa: Trans-Anglo Books.

Downtown Los Angeles Neighborhood Council

No date. Historic Resources Survey. Electronic document, http://dlanc.com/planning/projects/historic-resources-survey/historic-resources-building-list/, accessed April 2013.

Gebhard, David and Robert Winter

2003 *An Architectural Guidebook to Los Angeles.* Salt Lake City: Gibbs Smith.

Electric Railway Historical Association of Southern California.

No date. *The Street Railway History of Los Angeles*. Electronic document, http://www.erha.org/railwayhis.htm, accessed September 4, 2012.

Historic Resources Group

1998 *Historic Architectural Survey and Evaluation Report and Finding of No Adverse Effect for the Broadway Streetscape Improvement Project*. 1 October.

Los Angeles Conservancy

1990 *Historic Resources in Context for the Central Business District Redevelopment Project Area.* 30 May. Los Angeles Community Redevelopment Agency, Los Angeles, II-11-II-12.

2010 *Strolling on 7th Street: Downtown's Historic Thoroughfare.* Electronic document, http://www.laconservancy.org/tours/Strolling_on_Seventh.pdf

Los Angeles National Historic Landmarks
2013 Electronic document, http://www.landmarkwatch.org/PDF/LosAngeles_City.NHLs.pdf, accessed May 2013.

Masters, Nathan
2013 "Remember L.A.'s Other Trolleys: The Yellow Cars." *Los Angeles Magazine,* 3 March.

National Historic Landmarks
2013 *National Historic Landmarks Program*. Electronic document, tps.cr.nps.gov/nhl/detail.cfm? ResourceId=1075&ResourceType=Building, accessed May 2013.

National Park Service
2013 National Register of Historic Places: California – Los Angeles County. Electronic document, www.nationalregisterofhistoricplaces.com/CA/Los+Angeles/state10.html, accessed March 2013.

Post, Robert C.
1989 *Street Railways and the Growth of Los Angeles*. San Marino: Golden West Books

Roseman, Curtis C.
2004 *The Historic Core of Los Angeles.* Charleston: Arcadia.

Starr, Kevin
2005 *California: A History*. New York: The Modern Library

United Department of Transportation, Urban Mass Transportation Administration
1980 Final Environmental Impact Statement: Los Angeles Downtown People Mover Project. June.

Walker, Jim
1977 *The Yellow Cars of Los Angeles*. Glendale: Interurbans Publications.

Workman, Boyle
1935 *The City That Grew*. Los Angeles: The Southland Publishing.

Works Progress Administration
1939 *California: A Guide to the Golden State*. New York: Hastings House.

Appendix A

SHPO Consultation

This page intentionally left blank.

Appendix B
Public Participation

This page intentionally left blank.

Appendix C

Department of Parks and Recreation 523 Forms – Eligible Properties

This page intentionally left blank.

Appendix D
Department of Parks and Recreation 523 Forms – Ineligible Properties

This page intentionally left blank.

Appendix E

Contributing and Non-Contributing Addresses to the Broadway Theatre and Commercial NRHP Historic District

This page intentionally left blank.

Appendix F

Features of the Broadway Theatre and Commercial District

This page intentionally left blank.

Appendix I
Noise and Vibration Technical Report for the Restoration of Historic Streetcar Service in Downtown Los Angeles

DRAFT Noise and Vibration Technical Report for Restoration of Historic Streetcar Service in Downtown Los Angeles

June 1, 2016

This report was prepared by:

ATS Consulting
215 N Marengo Avenue Suite 100
Pasadena CA 91101

ATSConsulting
acoustics, transportation + strategy

Table of Contents

1. Executive Summary 1-1
1.1 Summary of Noise Impact Analysis 1-1
1.2 Summary of Traffic Noise Analysis 1-7
1.3 Summary of Vibration Impact Analysis....................1-8
1.4 Summary of CEQA Analysis....................1-9
1.4.1 Future Noise with and without the Streetcar Project 1-9
1.4.2 Traction Power Substation 1-10
1.5 Summary of Construction Noise and Vibration Impacts 1-10
1.5.1 Construction Noise Mitigation 1-12
1.5.2 Construction Vibration Mitigation....................1-13
2. Project Description 2-1
2.1 Introduction....................2-1
2.2 Project Alternatives 2-0
2.2.1 Alternative 1 – No Project Alternative 2-0
2.2.2 Alternative 2 – 7th Street with Grand Avenue Extension....................2-0
2.2.3 Alternative 3 – 7th Street without Grand Avenue Extension 2-0
2.2.4 Alternative 4 – 9th Street with Grand Avenue Extension....................2-0
2.2.5 Alternative 5 – 9th Street without Grand Avenue Extension 2-0
2.3 Elements of the Streetcar Alternatives 2-1
2.3.1 Vehicles....................2-1
2.3.2 Platforms 2-1
2.4 Support Facilities 2-1
2.4.1 Overhead Contact System 2-1
2.4.2 Traction Power Substations....................2-2
2.4.3 Maintenance and Storage Facility 2-2
2.4.4 Signaling....................2-3
2.4.5 Potential Layover Locations....................2-3
2.5 Construction Activities....................2-4
3. Noise and Vibration Assessment Methodology 3-1
3.1 Noise Assessment Approach 3-1
3.2 Vibration Assessment Approach....................3-2
3.3 Sources of Streetcar Noise 3-2
3.4 Sources of Streetcar Vibration....................3-4
4. Regulatory Framework 4-1
4.1 FTA Noise Impact Criteria 4-1
4.2 California State and City of Los Angeles Noise and Vibration Limits....................4-6
4.3 Local Construction Noise Limits....................4-10

4.4 FTA Impact Criteria for Groundborne Vibration....4-11
5. Inventory of Noise and Vibration Sensitive Land Uses....5-1
6. Affected Environment....6-1
6.1 Existing Noise Conditions....6-1
6.2 Existing Vibration Conditions....6-6
Potential Operational Noise and Vibration Impacts and Mitigation....7-1
7. Potential Operational Noise and Vibration Impacts and Mitigation....7-1
7.1 Noise from Streetcar Operations....7-1
7.2 Streetcar Operations....7-2
7.3 Streetcar Related Noise....7-2
7.3.1 Operational Noise....7-2
7.3.2 Ancillary Equipment....7-8
7.3.3 Maintenance and Storage Facility....7-9
7.4 Traffic Noise....7-18
7.5 Streetcar Operational Vibration....7-25
7.6 Operational Noise Mitigation....7-40
7.7 Maintenance and Storage Facility Noise Mitigation....7-42
7.8 Operational Vibration Mitigation....7-42
7.9 CEQA Noise and Vibration Impacts....7-44
7.9.1 Existing with the Streetcar Project....7-44
7.9.2 Future No Build without the Streetcar Project....7-45
7.10 California Environmental Quality Act (CEQA) Determination....7-53
8. Potential Construction Noise and Vibration Impacts and Mitigation....8-1
8.1 Construction Noise....8-1
8.2 Construction Vibration....8-6
8.3 Construction Noise Mitigation....8-7
8.4 Construction Vibration Mitigation....8-8
9. References....9-1

List of Figures

Figure 1-1: Receiver Locations Diagram 1....1-3
Figure 1-2: Receiver Locations Diagram 2....1-3
Figure 1-3: Receiver Locations Diagram 3....1-4
Figure 2-1: Regional Location Map....2-2
Figure 2-2: Proposed Downtown Los Angeles Streetcar Route....2-4
Figure 4-1: FTA Noise Impact Criteria....4-4
Figure 4-2: Equations Used for the FTA Noise Impact Criteria....4-4

Figure 4-3: FTA Criteria for Detailed Vibration Analysis 4-14
Figure 6-1: Overview of Noise and Vibration Measurement Locations....6-6
Figure 6-2: Vibration Propagation Test Site V-1, Disney Concert Hall....6-9
Figure 6-3: Site V-1, Measured LSTM and Coherence 6-10
Figure 6-4: Vibration Propagation Test Site V-2, Orpheum Theater 6-11
Figure 6-5: Site V-2, Measured LSTM and Coherence 6-12
Figure 6-6: Vibration Propagation Test Site V-3, Belasco Theater....6-13
Figure 6-7: Site V-3, Measured LSTM and Coherence 6-14
Figure 6-8: Vibration Propagation Test Site V-4, Parking Lot 6-15
Figure 6-9: Site V-4, Measured LSTM and Coherence 6-16
Figure 7-1: Noise Sources at Potential Site of Maintenance and Storage Facility M1 7-15
Figure 7-2: Noise Sources at Potential Site of Maintenance and Storage Facility M2 7-16
Figure 7-3: Noise Sources at Potential Site of Maintenance and Storage Facility M3 7-16
Figure 7-4: Noise Sources at Potential Site of Maintenance and Storage Facility M4 7-17
Figure 7-5: Measurement Locations Inside Disney Concert Hall Auditorium (Left) and BP Hall (Right) .7-30
Figure 7-6: Predicted Groundborne Vibration and Groundborne Noise, Disney Concert Hall....7-31
Figure 7-7: Measurement Locations at the Orpheum Theater Seat X-40 (Left) and Seat V-2 (Right)....7-33
Figure 7-8: Predicted Groundborne Vibration and Groundborne Noise, Orpheum Theater 7-34
Figure 7-9: Measurement Locations inside Belasco Theater Stage Floor (Left) and On Stage (Right)....7-36
Figure 7-10: Predicted Groundborne Vibration and Groundborne Noise, Belasco Theater 7-37

List of Tables

Table 1-1: Summary of FTA Noise Impacts and Mitigation 1-5
Table 4-1. FTA Land Use Categories and Noise Metrics 4-2
Table 4-2. FTA Noise Impact Criteria 4-5
Table 4-3. CEQA Noise Limits for Land Uses 4-10
Table 4-4. FTA Impact Thresholds for Groundborne Vibration, General Impact Assessment 4-13
Table 4-5. Interpretation of Vibration Criteria for Detailed Analysis....4-15
Table 4-6. Groundborne Noise and Vibration Impact Criteria for Special Buildings 4-15
Table 5-1. Inventory of Theaters and Concert Halls 5-2
Table 5-2. Inventory of Residential Land Uses....5-4
Table 5-3. Inventory of Institutional Land Uses 5-5
Table 6-1. Ambient Noise Measurement Results 6-4
Table 6-2. Ambient Nighttime Noise Measurement Results – One Hour Leq (dBA) 6-5
Table 7-1. Streetcar Headway Times 7-2
Table 7-2. Summary of Noise Impact Assessment for Category 1 Land Uses....7-5
Table 7-3. Summary of Noise Impact Assessment for Category 2 Land Uses....7-6
Table 7-4. Summary of Noise Impact Assessment for Category 3 Land Uses....7-7

Table 7-5. Predicted TPSS Noise 7-9
Table 7-6. Unmitigated Noise From MSF at 3rd Street and Broadway (M1) 7-13
Table 7-7. Unmitigated Noise From MSF at 5th Street and Hill Street (M2) 7-13
Table 7-8. Unmitigated Noise From MSF at 11th Street and Olive Street West (M3) 7-14
Table 7-9. Noise From Potential MSF at 11th Street and Olive Street East (M4) 7-14
Table 7-10. Summary of AM Peak Hour Traffic Noise for Category 1 Land Uses – Leq(h) (dBA) 7-18
Table 7-11. Summary of PM Peak Hour Traffic Noise for Category 1 Land Uses – Leq(h) (dBA) 7-19
Table 7-12. Summary of AM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA) 7-19
Table 7-13. Summary of PM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA) 7-21
Table 7-14. Summary of AM Peak Hour Traffic Noise for Category 3 Land Uses – Leq(h) (dBA) 7-23
Table 7-15. Summary of PM Peak Hour Traffic Noise for Category 3 Land Uses – Leq(h) (dBA) 7-24
Table 7-16. Summary of Vibration Impact Assessment for Category 2 Land Uses 7-27
Table 7-17. Summary of Vibration Impact Assessment for Category 3 Land Uses 7-28
Table 7-18. Summary of Vibration Impact Assessment for “Special” Buildings 7-40
Table 7-19. CEQA Noise Impact Analysis for Category 1 Land Uses – Ldn (dBA) 7-46
Table 7-20. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA) 7-47
Table 7-21. CEQA Noise Impact Analysis for Category 3 Land Uses – Ldn (dBA) 7-51
Table 8-1. Construction Activity and Equipment Typical Noise Levels (dBA) at 50 feet 8-4
Table 8-2. FTA Damage Risk Vibration Criteria 8-6

1. EXECUTIVE SUMMARY

This report documents the noise and vibration study performed for the Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). The study evaluates the potential noise and vibration impacts from construction and operation of the streetcar alignments under consideration.

1.1 Summary of Noise Impact Analysis

The streetcar noise impact analysis is based on the Federal Transit Administration (FTA) Guidance Manual (Ref. 1). The FTA noise assessment procedures include impact criteria for three types of land uses: Category 1 includes recording studios and concert halls; Category 2 includes residences, hotels and hospitals where people sleep; and Category 3 includes institutional land uses such as schools, libraries, theaters and churches. The construction noise evaluation is based on the City of Los Angeles (City) regulations (Ref. 2-5). Potential noise impacts were assessed for streetcar operations and construction. Key assumptions for the noise impact assessment are:

- Streetcar audible warnings: The noise impact analysis of the streetcar operations includes audible warning device (AWD) sounds at streetcar stops and stop lights but does not include warning horns. The warning horns would be used at operators' discretion to alert pedestrians and motor vehicle drivers of potential safety risks, which is the same way that horns are used on buses.

- The maximum speed for the streetcars would be 30 mph on Figueroa and 25 mph on the rest of the alignment. The speed would be 20 mph as streetcars approach stations and stops.

- The streetcar would operate up to every 7 minutes during the peak hours (6 AM to 9 AM and 3 PM to 6 PM), approximately 10 minutes between 9 AM and 3 PM, and approximately 15 minutes from 6 PM to 2:30 AM.

- The noise from the streetcar operations would be similar to what has been observed at modern streetcar systems in Portland, OR and Seattle, WA.

The results of the FTA noise analysis for Alternatives 2 and 3 (7th Street with and without the Grand Avenue Extension) and Alternatives 4 and 5 (9th Street with and without the Grand Avenue Extension) are shown in Table 1-1. Since a substantial portion of the Project alignment is common to all four build alternatives, the analysis is presented for the Project as a whole. Where differences pertain to specific locations (i.e., 7th Street, 9th Street, Grand Avenue) they are called out as such. The locations of the receivers are shown in Figure 1-1 through Figure 1-3. The key conclusions of the noise impact assessment are:

- **Operations, Disney Concert Hall.** Moderate noise impact is predicted outside the Disney Concert Hall (T2) associated with the Grand Avenue Extension (Alternatives 2 and 4). The higher noise levels are due to wheel impact at the frog of the turnout track (the track insert used where two rails cross) and the potential for squeal noise on the Grand Avenue/First Street. Use of a "low impact" frog such as a well-designed flange-bearing frog would minimize the wheel impact noise. Use of one of several rail lubricants is usually sufficient to control wheel squeal. However because of the steep grade of the track there is concern with the use of a lubricant at this location. If wheel squeal occurs at this location during pre-revenue service, it would be addressed by the use of wheel dampers that would control the wheel squeal without using a lubricant. A wheel damper consists of metal plates that are attached to the outside of the streetcar wheel that are designed to change the natural frequency of the wheel to reduce wheel squeal.

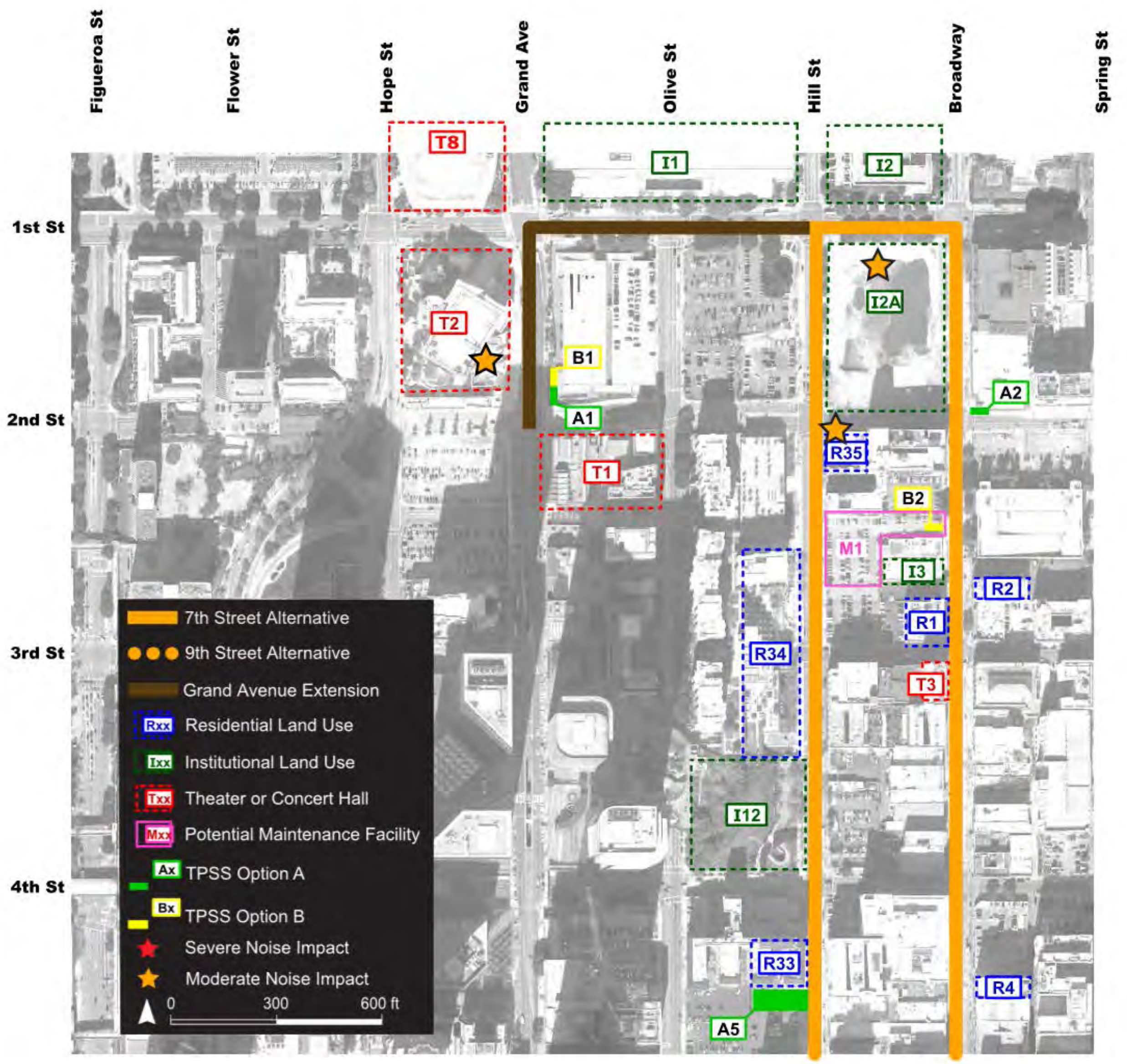


Figure 1-1: Receiver Locations Diagram 1

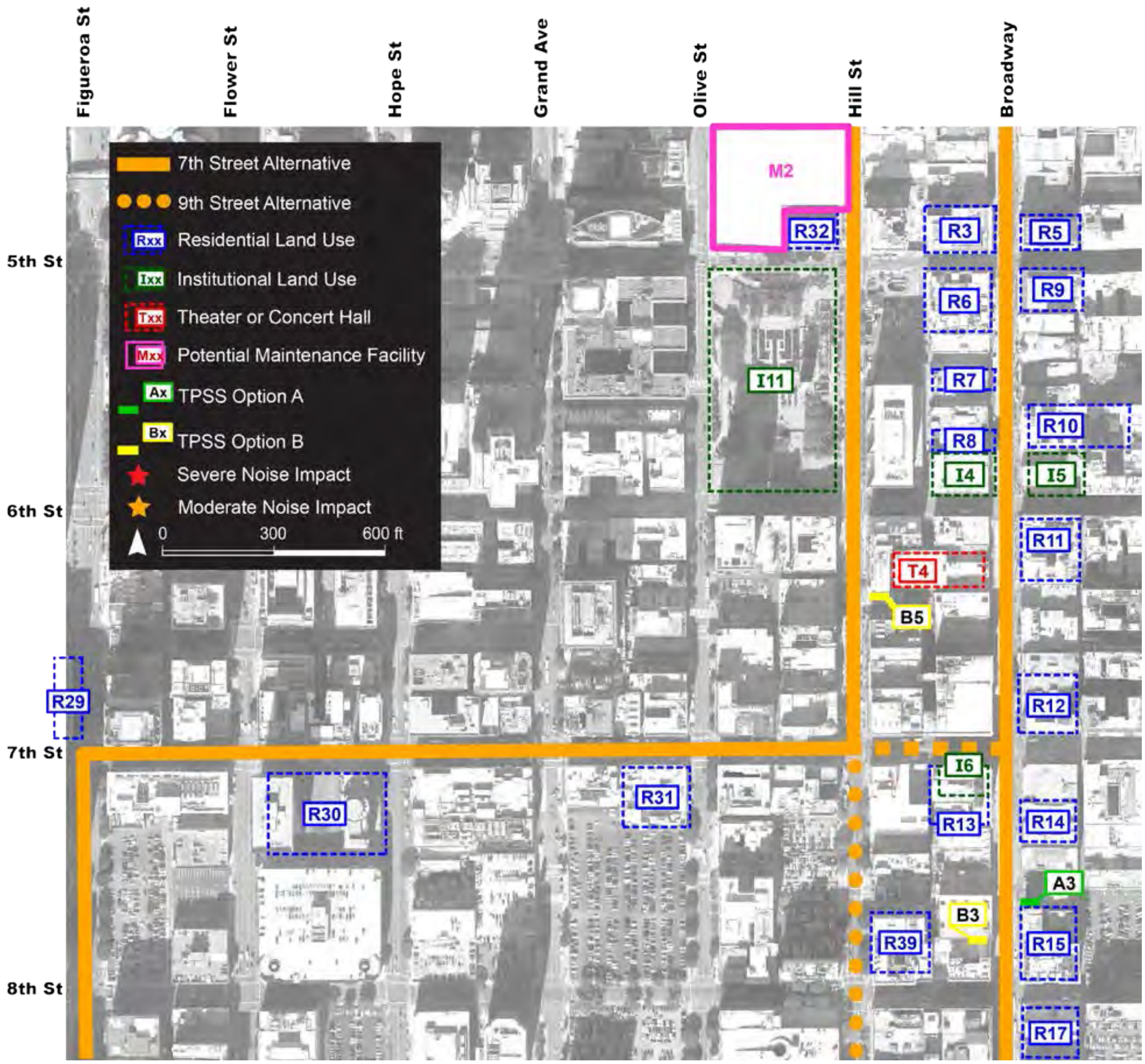


Figure 1-2: Receiver Locations Diagram 2

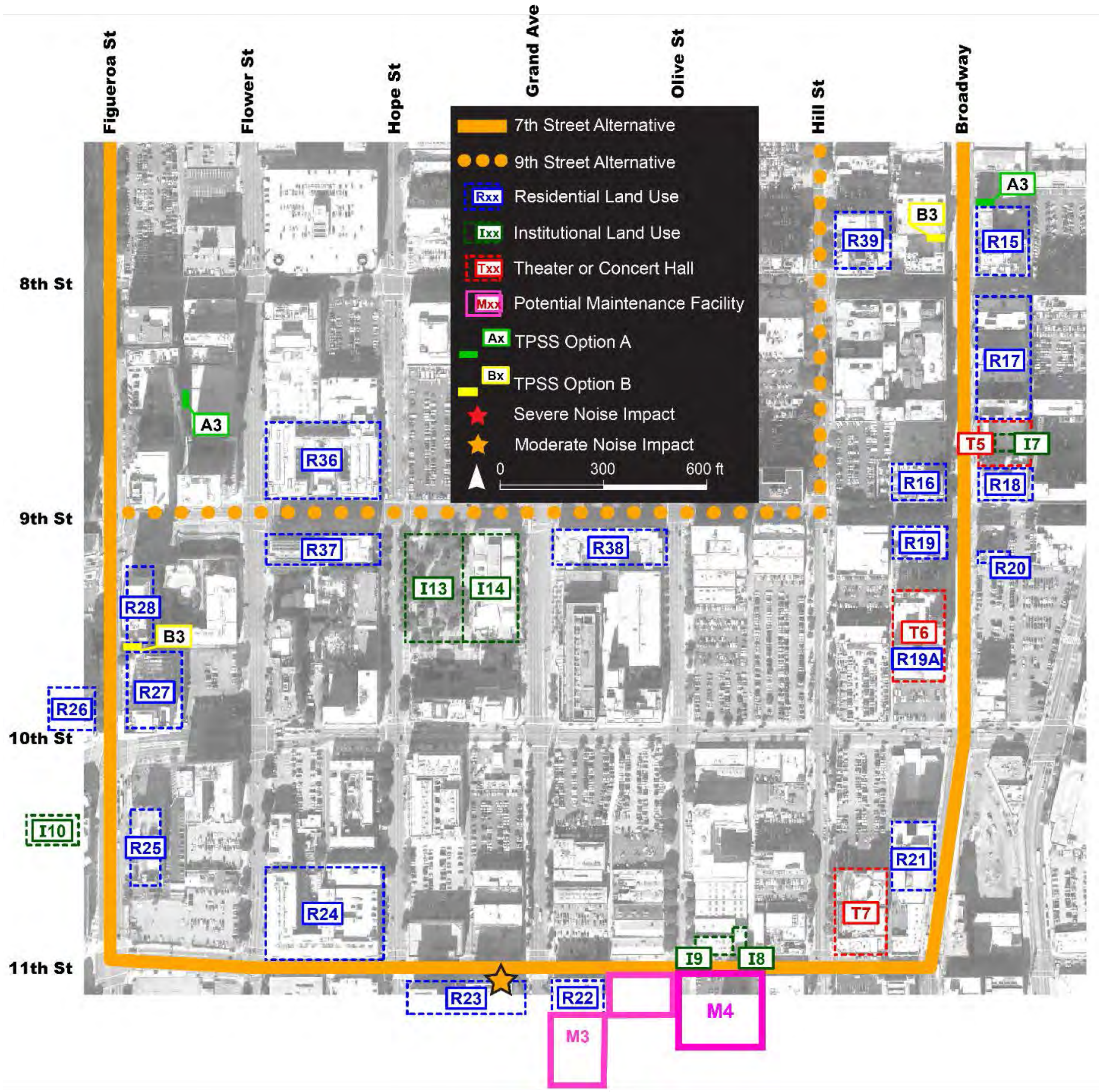


Figure 1-3: Receiver Locations Diagram 3

Table 1-1: Summary of FTA Noise Impacts and Mitigation Assessment is applicable to Alternatives 2 through 5									
FTA Land Use Category	**ID Number [(a)]**	**Location**	**Land Use**	**Exceed FTA Impact Threshold**		**Number of Impacted Receptors [(b)]**	**Amount Exceeds Threshold[(c)], dBA**	**Mitigation Option [(d)]**	**Impact After Mitigation (Y/N)**
				Moderate	**Severe**				
Streetcar operations									
1	T2	Disney Concert Hall	Concert Hall	Yes	No	1	3	1, 2	N
2	R23	West 11th St between Hope St and Grand Ave	Multi-family Residential	Yes	No	24	2	None[(e)]	--
	R35	Kawada Hotel, Hill and 2nd Sts	Hotel	Yes	No	15	1	None[(e)]	--
3	I2A	1st St between Hill St and Broadway	Federal Courthouse	Yes	No	1	1	1 or 2	N
Maintenance and Storage Facility (MSF) operations									
2	R22	West 11th St and Grand Ave	Multi-family Residential	Yes	No	24	5	3,4	N
2	R33	Hill and 4th Sts	Multi-family Residential	Yes	No	10	0	3,4	N
3	I3	Guadalupe Wedding Chapel, Broadway between 2nd and 3rd Sts	Wedding Chapel	Yes	No	1	5	3,4	N

Source: ATS Consulting, January 2016.

Notes:

(a) See Figure 1-1, Figure 1-2, and Figure 1-3 and Appendix F for the receiver locations.
(b) Represents the number of residential units (Category 2 land uses) where impact is predicted.
(c) The amount that predicted noise levels exceed the FTA moderate impact thresholds. At receiver R33 the predicted noise level is the same as the FTA threshold which is considered by FTA as an impact.
(d) Mitigation Option 1 is the use of a "low impact" frog at the nearest turnout.
Mitigation Option 2 is a combination of wheel damper and optimization of profiles to minimize wheel squeal.
Mitigation Option 3 is the use of wheel lubrication at tight radius track within the MSF yards.
Mitigation Option 4 is the use of "low impact" frogs at all turnouts within the MSF yards.
(e) Mitigation is not feasible at this receiver.

- **Operations, Residential and Hotel.** Moderate noise impacts are predicted at two multi-family residence (MFR) buildings (Site R23) on West 11th Street between Grand Avenue and Hope Street, which is associated with all four build alternatives and at the Kawada Hotel, which is also associated with all four build alternatives. Both MFR buildings are at least 10 stories in height. Only the residential units on the 5th floor and lower would be affected, which includes 24 residential units with balconies. At the Kawada Hotel (Site R35) the affected units would be 15 hotel rooms without balconies. These two apartment buildings and the Kawada Hotel are the only residential land uses (FTA Category 2) where potential for noise impact from streetcar operations were identified.

- **Operations, Court House.** Moderate noise impacts are predicted at the future Federal Courthouse to be located on 1st Street between Hill Street and Broadway, which is associated with all four build alternatives. The higher noise levels are due to potential for squeal noise on the Hill Street/First Street curve and the diamond crossing. As discussed below, mitigation is available to eliminate the potential noise impact to the Federal Courthouse.

- **Maintenance and Storage Facilities (MSF)**. Moderate impacts are predicted for the MSF sites at receiver I3, R22, and R33. The higher noise levels are due to wheel squeal and turnout frog impacts in the storage yards. Rail lubrication for the tight radius tracks within the rail yards and the use of "low impact" frogs at the yard turnouts would mitigate the impact to these receivers.

- **Traction Power Substations (TPSS).** There are no noise impacts predicted at the five TPSS sites. Noise measurements of the TPSS units would be conducted during pre-revenue service to confirm that noise impacts would not occur. If exceedance of the FTA noise thresholds, City of Los Angeles CEQA thresholds or the *Los Angeles Municipal Code* Sections 112.04 and 112.05 occurs mitigation would be provided before revenue service begins.

- The Project would comply with the *City of Los Angeles Municipal Code* Section 112.04, Powered Equipment Intended for Repetitive Use in Residential Areas and Other Machinery, Equipment, and Devices, and Section 112.05 112.05, Maximum Noise Level of Powered Equipment or Powered Hand Tools.

A predicted Project noise level in the severe noise impact range is considered significant for both *National Environmental Protection Act* (NEPA) and *California Environmental Quality Act* (CEQA), thereby requiring mitigation. Sensitive receivers that show FTA moderate impacts are not considered to be severely or significantly adversely impacted under NEPA and CEQA. When the predicted Project noise level is in the FTA moderate noise impact range, FTA allows more discretion for mitigation. For moderate noise impacts, FTA guidance is that mitigation measures should be considered and other factors need to be taken into account to determine the magnitude of the impact and the need for mitigation. The following measures are recommended to mitigate potential noise impacts at the Disney Hall and the Federal Courthouse:

1. **Disney Concert Hall (Receiver T2):** The predicted streetcar noise level outside Disney Concert Hall (T1) exceeds the FTA moderate noise impact threshold. The reasons for the noise impact is the potential for wheel impacts at the turnout trackwork on Grand Avenue and wheel squeal noise on the sharp radius curve at the Grand Avenue and First Street intersection. Wheel impacts at frogs can increase noise levels by up to 6 decibels at 50 feet from the turnout track and according to FTA wheel squeal noise can increase streetcar noise by 10 decibels at a distance of 100 feet from a curve. Use of a "low impact" frog such as a well-designed flange-bearing frog would minimize the wheel impact noise. Use of one of several rail lubricants is usually sufficient to control wheel squeal. However because of the steep grade of the track there is concern with the use of a lubricant at this location. If

wheel squeal occurs at this location during pre-revenue service, it would be addressed by the use of wheel dampers that would control the wheel squeal without using a lubricant.

2. **Federal Courthouse (Receiver I2A):** The predicted streetcar noise level outside the future Federal Courthouse (I2A) exceeds the FTA moderate noise impact threshold. Similar to Disney Concert Hall noise impacts, the impacts at the Federal Courthouse are due to the potential for squeal noise on the sharp curve at the Hill Street and First Street intersection and wheel impacts at the diamond crossing on 1st Street. Use of wheel dampers and the use of a “low impact” frog such as a well-designed flange-bearing frog would eliminate the FTA moderate noise impact at the courthouse.

No mitigation is recommended for the residential land receivers affected by the streetcar operations and the reasons are summarized below:

1. **Multi-Family Buildings on 11th Street between Grand and Hope (Residential Receiver R23):** *No noise mitigation is recommended for these two multi-family residential buildings* because:
   - The only outdoor areas of human activity exposed to streetcar noise would be the balconies of the residential units.
   - Mitigation measures such as sound walls at the edge of the trackwork are not feasible for this receiver because the sound walls would impede the flow of traffic.
   - Since this multi-family residence is sound insulated with double pane windows there is no other mitigation that would be feasible for this receiver.
2. **Kawada Hotel Receiver (Receiver R35)**: *No mitigation is recommended for the Kawada Hotel* for the same reasons as for Receiver R23:
   - There are no outdoor areas of frequent human activity exposed to streetcar noise.
   - Mitigation measures such as sound walls at the edge of the trackwork are not feasible for this receiver because the sound walls would impede the flow of traffic.
   - Since this hotel is sound insulated with double pane windows there is no other mitigation that would be feasible for this receiver.

1.2 Summary of Traffic Noise Analysis

The traffic circulation and the peak hour traffic volumes in the study area would change in the future with and without the Project. The details of the study area are discussed in Section 1. A negative change indicates a decrease in future traffic noise and a positive change indicates an increase in future traffic noise. The predicted change in peak hour traffic noise levels in 2040 compared to the existing levels in 2014/2015 for the Category 1 land uses in the AM peak hour are in the range of an increase of 0.7 dBA to

2.0 dBA. In the PM peak hour the increase is in the range of 0.7 dBA to an increase of 1.4 dBA. For Category 2 land uses in the AM peak hour is an increase in the range of 0.7 dBA to 1.9 dBA over the future 2040 Project traffic. In the PM peak hour the increase is 0.7 dBA to an increase of 1.8 dBA. The change in peak hour traffic noise levels in 2040 compared to the existing levels in 2014/2015 for the Category 3 land uses in both the AM and PM peak hour is an increase of 0.7 dBA to 1.4 dBA. The change in traffic noise is not considered a significant impact under CEQA because neither the future 2020 Year traffic nor the 2040 Year traffic results in a 3 dBA or more increase over the existing conditions. It is not a significant impact under NEPA because neither the future 2020 Year traffic nor the 2040 Year traffic results in a 3 dBA or more increase over the future No Build conditions.

1.3 Summary of Vibration Impact Analysis

The streetcar vibration impact analysis is based on the Federal Transit Administration (FTA) Guidance Manual (Ref. 1). Potential vibration impacts were assessed for streetcar operations and construction. Key points from the impact assessment are:

- The vibration that would be generated by the operation of the LA streetcar vehicle was assumed to be similar to what was observed for the modern streetcar systems in Portland, OR and Seattle, WA.
- The maximum speed for the streetcars was assumed to be 30 mph on Figueroa Street and 25 mph on the rest of the alignment. The speed would be 20 mph as it approaches stations and stops.
- The ground propagation characteristics used for the predictions are based on four vibration propagation tests conducted in the Project corridor. Three of the test sites were at theaters or concert halls. The fourth test site was performed at a parking lot on 9th Street.

The conclusions of the groundborne vibration impact assessment are:

- No groundborne vibration impacts are predicted at Category 1, 2 or 3 receivers.
- No groundborne noise or groundborne vibration impacts are predicted at buildings that FTA defines as "special". This includes the Disney Concert Hall, the Colburn School, and the historic theaters in the corridor.

Because of the number of underground structures in the Project area such as basements, loading docks, and parking garages, there is some potential for vibration to be transmitted efficiently into structures because of the close proximity of underground structures to the concrete slab for the streetcar track. Mitigation measures such as a resilient mat to break the direct connection may be required if there are locations where the track structure would be less than one foot from any part of a building foundation.

Further detailed review of potential vibration impacts is recommended for theaters on Broadway that are currently unoccupied if they are renovated and revived in the future. Depending upon the structure and the planned future use of the building, further modeling analyses or a site-specific vibration test may be required during Final Design to more accurately specify potential impacts.

1.4 Summary of CEQA Analysis

The traffic noise analysis for each of the Project alternatives (see Section 7.9 CEQA Noise and Vibration Impacts) was prepared for the following scenarios:

- Existing Year (2014/2015)
- Opening Year (2020)
- Horizon Year (2040)

1.4.1 Future Noise with and without the Streetcar Project

The Opening Year condition would include the existing projects and improvements committed to be implemented by the first year of operation, 2020. The 2040 Horizon Year would include projects and improvements committed to be implemented by 2040.

The noise levels due to the Project were added to the existing noise levels to determine the cumulative effect of the Project for the 2014/2015 Year. The Project noise levels for the assessment of the Category 1 land uses range from an Ldn of 58 to 61 dBA with the exception of Site T2, Disney Concert Hall where the Project noise level is 67 dBA due to the streetcar passby noise, noise squeal, and turnout impact noise. The Category 1 Project noise levels at Sites T1, and T3 through T8 are less than the existing traffic noise. At Site T2, Disney Concert Hall, the Project noise level is the same as the existing traffic noise.

The Project noise levels at the Category 2 land uses range from an Leq of 56 to 63 dBA which are less than the existing traffic noise. The Project noise levels at the Category 3 land uses range from an Leq of 56 to 63 dBA which are less than the existing traffic noise.

The Project noise levels were also added to the future traffic noise for the 2020 Opening Year and the 2040 Horizon Year. The increase in existing noise levels with the Project would be less than 3 dB at all the noise sensitive receivers with the exception of the following receivers:

T2 - Disney Concert Hall: Existing noise levels would increase in the range of 3.1 to 4.7 dBA.

T7 – Belasco Theater: Existing noise levels would increase in the range of 3.1 to 3.8 dBA.

T8 – Dorothy Chandler Pavilion: Existing noise levels would increase in the range of 3.0 to 3.1 dBA

R21 – Apartments at Broadway and 11th Street: Existing noise levels would increase by 3.0 dBA.

R23 – Apartments at Hope and 11th Streets: Existing noise levels would increase in the range of 3.1 to 3.8 dBA.

R24 - Metlofts: Existing noise levels would increase in the range of 3.2 to 3.8 dBA.

R35 – Kawada Hotel: Existing noise level would increase in the range of 3.0 to 3.1 dBA.

R36 – Apartments: Existing noise level would increase in the range of 3.0 to 3.6 dBA.

R37 – Skyline Apartments: Existing noise level would increase in the range of 3.0 to 3.5 dBA.

I1 – Mosk Courthouse: Existing noise level would increase in the range of 3.0 to 3.1 dBA.

I2A – Federal Court House: Existing noise level would increase in the range of 3.8 to 4.5 dBA.

I13 – Grand Hope Park: Existing noise levels would increase by 3.3 dBA.

I14 – Fashion Institute of Design and Merchandising (FIDM) School: Existing noise levels would increase by 3.3 dBA.

The exceedance of the existing noise levels at Receiver T2, Disney Concert Hall is due to the operation of the streetcar, specifically wheel squeal and impact noise from special trackwork. At Receiver T8, Dorothy Chandler Pavilion, the exceedance is due to wheel squeal. These impacts can be mitigated as discussed in Section 7.3.1. The exceedances of the existing noise levels at the other receivers is due to the projected increase in future traffic with the proposed Project. Traffic noise mitigation would not be feasible or reasonable at any of these receivers.

1.4.2 Traction Power Substation

The noise from the traction power substation (TPSS) units would not cause significant CEQA noise impacts at any of the sensitive receivers in the Project area.

1.5 Summary of Construction Noise and Vibration Impacts

The construction of the streetcar Project would be sequenced over several stages (Ref. 6). At the first stage of construction it may be necessary to prepare the site and relocate, modify, or protect in place all utilities and underground structures that would conflict or interfere with excavation for street level concrete pavement and trackwork. This would include several noisy activities including excavation, backfill of soil and reconstruction of pavement. Equipment typically used for utility relocation work includes diamond saws, pavement breakers, excavators, cranes, generators, rollers, compactors, dump trucks, concrete trucks, welding machines and other construction equipment.

Construction staging areas would be located on or near the work zone and would be used to store approximately 80 -foot long rail sticks. The primary activity would be to facilitate welding of the rail sticks into strings.

Track construction would involve demolition of the roadway sections being displaced by the guideway, preparation of the track bed, construction of the supporting track slab, laying of the rails, and installation of rebar and pouring of concrete. For special trackwork, welding would be an added step. Typical equipment employed in track construction include rubber-tired excavators, loaders, graders, bulldozers, concrete trucks, compactors and water trucks. Construction of station platform foundations, restoration of pavement, and reconstruction of any sidewalks and ramps would begin simultaneously or immediately following the track slab within each segment.

Construction of TPSS begins with each site cleared and graded. Underground utility connections would be dug and installed, followed by the grounding mat. The foundation would be poured once the utility connections were completed. The TPSS building would be delivered, mounted on the foundation, and connected to the incoming power supply conduits and outgoing feeder conduits.

The construction of the MSF generally follows the same sequencing as for the TPSS. The site would be cleared and graded, and underground utility connections would be installed. Following the underground work and site preparation, the pit and foundation would be installed. Structural walls and heavy industrial equipment such as shop cranes would be installed on the foundation. Once the structure is enclosed, the shop would be finished with mechanical and electrical equipment, plumbing, and furnishings. Construction of the storage area for streetcars entails placing tracks and turnouts, paving, installation of OCS poles and construction of security fencing and walls.

The installation of OCS generally follows the completion of track construction. Finishing for platforms usually overlaps with systems work and is completed prior to final testing and pre-revenue operations.

The use of this equipment during Project construction has the potential to result in substantial, yet temporary, increases in local noise levels along the Project alignments. The City of Los Angeles noise ordinance, Section 41.40(a) of the *Los Angeles Municipal Code,* normally allows construction only between 7 AM to 9 PM on any weekday, unless permission to operate during other hours is requested and approved. Construction noise levels depend on the number of pieces and type of equipment, their general condition, the amount of time each piece operates per day, the presence or lack of noise attenuating features such as walls, and the location of the construction activities relative to the sensitive receivers.

Nighttime construction activities may include but not be limited to the following:

- Concrete pouring which includes concrete trucks entering and leaving the work site.

- Field welding of track and special trackwork.
- Underground utility work in a trench.

These nighttime activities would require a variance to Section 41.40 of the *Los Angeles Municipal Code* for nighttime work scheduled after 9 PM and before 7 AM weekdays, after 6 PM and before 8 AM on Saturdays, and anytime on Sunday.

Some activities, such as compaction, pavement breaking, and the use of excavators, could result in perceptible levels of groundborne vibration. However, these activities would be limited in duration and the vibration levels are likely to be well below thresholds for minor cosmetic building damage. However, because the Project study area has numerous historic buildings that may be well over 100 years old, further analysis would be required to manage structural and architectural damage risk to these buildings. Potential for interference inside sensitive spaces at the “special” land uses from high-vibration construction activities would have to be addressed by the contractor.

1.5.1 Construction Noise Mitigation

The following best construction practices are recommended as noise mitigation measures to ensure that there are no significant impacts from construction activities:

- Minimize nighttime construction activities.
- Use specialty equipment with enclosed engines and/or high-performance mufflers.
- Locate equipment and staging areas as far from noise-sensitive receivers as practicable.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers where site conditions permit. This approach can be particularly effective for stationary noise sources such as compressors and generators.
- Route construction related truck traffic away from residential buildings to the extent possible.
- Sequence the use of equipment such that the simultaneous use of the loudest pieces of equipment are avoided as much as practicable.
- Avoid the use of impact equipment and where possible, use non-impact equipment.
- If a noise variance from Section 41.40(a) of the *Los Angeles Municipal Code* is required the contractor should employ noise control measures subject to approval by the appropriate agency reviewing the variance request.
- Use portable noise control enclosures for welding in the construction staging area.

- The contractor should develop a detailed Noise Control Plan with specific measures to be employed to mitigate construction noise impacts. The Noise Control Plan should be submitted for review and approval to the Bureau of Engineering before the beginning of construction activities. Because many of the construction activities would be located in close proximity to noise sensitive receivers, staging the construction to minimize the amount of time that noise producing activities affect specific receivers may be an alternative to using quieter equipment that may extend the exposure to construction activities.

1.5.2 Construction Vibration Mitigation

Construction related vibration activities are unlikely to exceed the FTA impact thresholds for structural damage. However, the following vibration mitigation strategies are recommended to minimize the potential for damage to any structures in the corridor:

1. Pre-Construction Survey: The survey may include inspection of building foundations and taking photographs of pre-existing conditions. The survey can be limited to the first row of buildings along the selected alignment. The only exception is if an important and potentially fragile historic resource is located within approximately 200 feet of the construction zone, in which case it should be included in the survey.

2. Vibration Limits: As per the FTA Guidance Manual, the construction vibration shall be limited to the peak particle velocity (PPV) ranging from 0.12 in/sec for "buildings extremely susceptible to vibration damage" to 0.5 in/sec for "Reinforced-concrete, steel or timber" buildings. The contract specifications should establish appropriate damage risk vibration limits for each of the historic properties that are within 200 feet of the construction.

3. Vibration Monitoring: The contractor may be required to monitor vibration at any buildings where the lower vibration limit is applicable and at any location where complaints about vibration are received from building occupants. This shall include "special" land uses such as the Disney Concert Hall.

4. If the contractor's plan calls for high-vibration construction activities being performed close to structures, it may be necessary for the contractor to use alternative procedures that produce lower vibration levels. Examples of high-vibration construction activities include the use of pavement breakers, vibratory compaction, and hoe rams next to sensitive buildings. Alternative procedures would be to use non-vibratory compaction in limited areas and concrete saws in place of jackhammers or pavement breakers for demolition. To avoid potential interference to the "special" land uses from construction vibration, the contractor should be required to coordinate with the building owners to limit the high vibration activities to the duration of the day so as to avoid affecting sensitive activities inside the building. For example, the contractor may avoid the use of high-vibration equipment during a scheduled performance or recording at the Disney Concert Hall and at the Dorothy Chandler Pavilion.

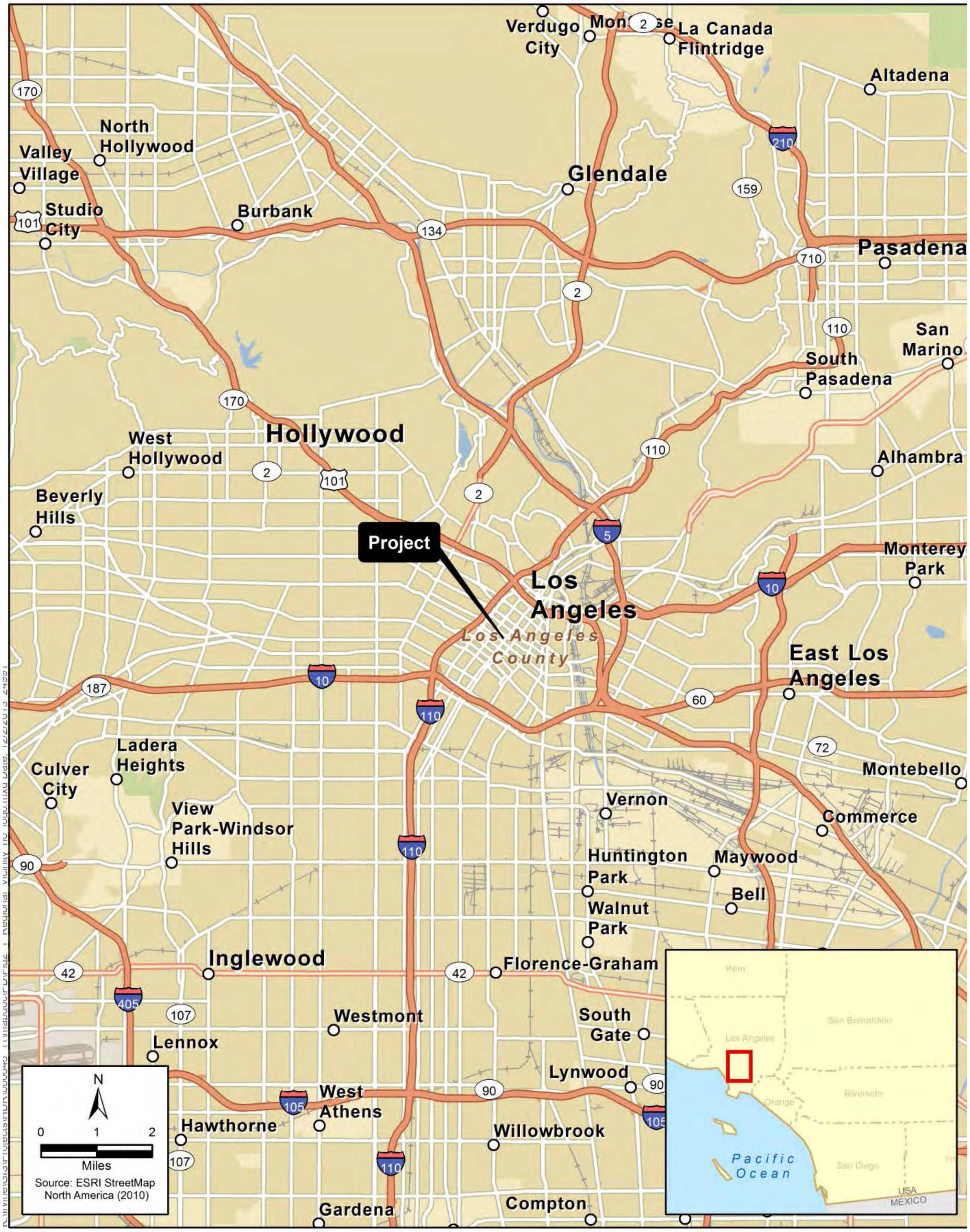
2. PROJECT DESCRIPTION

2.1 Introduction

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along an up to 3.8-mile route. The Project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The Project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center.

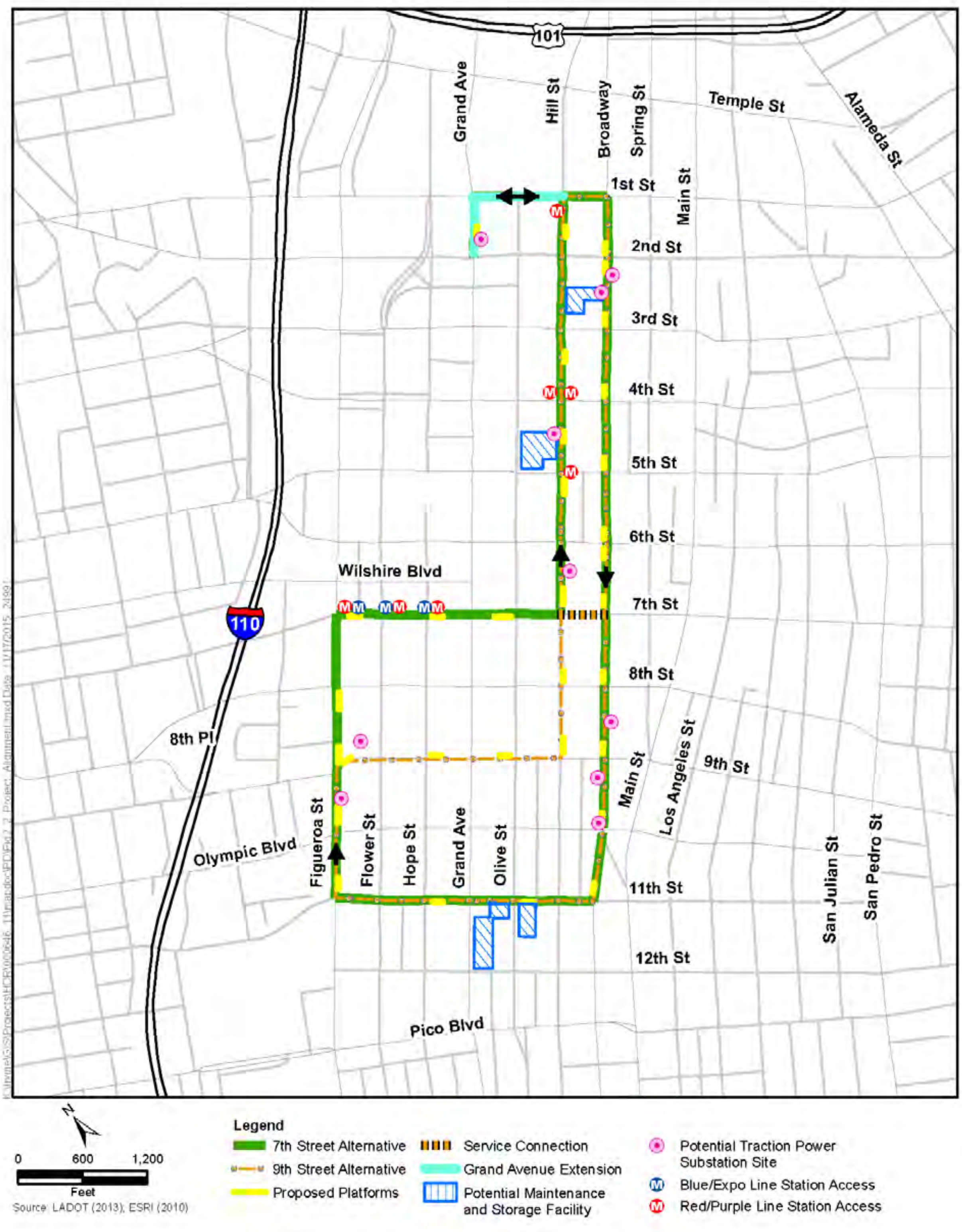
Figure 2-1 depicts the regional location of the Project. Figure 2-2 shows the Project's routing within Downtown Los Angeles.

Figure 2-1: Regional Location Map



Project
Los Angeles
Los Angeles County
Hollywood
West Hollywood
Beverly Hills
Glendale
Burbank
North Hollywood
Valley Village
Studio City
Verdugo City
La Canada Flintridge
Altadena
Pasadena
San Marino
South Pasadena
Alhambra
Monterey Park
East Los Angeles
Montebello
Commerce
Vernon
Maywood
Bell
Huntington Park
Walnut Park
Florence-Graham
South Gate
Lynwood
Willowbrook
Compton
Gardena
West Athens
Westmont
Hawthorne
Lennox
Inglewood
View Park-Windsor Hills
Ladera Heights
Culver City
N
0
1
2
Miles
Source: ESRI StreetMap North America (2010)
Pacific Ocean
USA
MEXICO

Figure 2-2: Proposed Downtown Los Angeles Streetcar Route



The track and roadway configuration would allow for a mixed flow of vehicles and a fleet of electrically powered streetcars. Power to the streetcar vehicles would be provided by approximately five traction power substations (TPSSs) and an overhead contact system (OCS), with the potential for wireless service for one or more sections of the route. A maintenance and storage facility (MSF) site would also be constructed as part of the Project.

2.2 Project Alternatives

Five Project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative.

2.2.1 Alternative 1 – No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the Project study area that would remain if the proposed Project would not occur.

2.2.2 Alternative 2 – 7th Street with Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

2.2.3 Alternative 3 – 7th Street without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

2.2.4 Alternative 4 – 9th Street with Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the Project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

2.2.5 Alternative 5 – 9th Street without Grand Avenue Extension

Alternative 5 would follow the same alignment as Alternative 4, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

2.3 Elements of the Streetcar Alternatives

A brief overview of the elements common to all build alternatives of the Project is presented below.

2.3.1 Vehicles

The Project's operating plan calls for 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate on the system. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure approximately 80 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. Examples of similar streetcars can be found in Portland, Oregon; both Tacoma and Seattle, Washington; Tucson, Arizona; Dallas, Texas; Atlanta, Georgia; and Charlotte, North Carolina. The streetcars would be designed with low floors to be compliant with the *Americans with Disabilities Act* (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 mph on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks, or power delivery may be wireless in some segments.

2.3.2 Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by buses operated by Metro, LADOT DASH, and other regional operators. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to shorter lengths. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

2.4 Support Facilities

2.4.1 Overhead Contact System

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site-specific and be made based upon engineering design. Either of these configurations could use decorative poles chosen to be consistent with the streetscape along the Project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/ Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or /7th Streets, 9th/ or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

2.4.2 Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide Direct Current (DC) power for the streetcars; the final number and placement will be determined by further Project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically-sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial Alternating Current [AC] power to 750-volt DC power for the streetcars.

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible.

2.4.3 Maintenance and Storage Facility

The Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

Four sites are currently being considered as a potential location for the MSF: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets. All four candidate sites are currently being used as parking lots. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for the MSF site would be required. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and storing of streetcar vehicles.

2.4.4 Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. "Line-of-sight" operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary where the streetcar would require a special traffic signal phase to maneuver so as to avoid conflicts with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have separate transit signals. Where they are needed, operation of transit signals would be separated from the normal traffic signals in order to not confuse the general public.

2.4.5 Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue north of 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles would have operator cabs on both ends of the cars so that they would be able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential second layover sites. Should Alternative 3 or 5 be ultimately selected, two of these locations may be needed. At each of these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

2.5 Construction Activities

Construction activities associated with the Project may affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, depending on the Alternative selected, as well as the selected MSF and TPSS sites. Construction activities would include: (a) pavement removal, (b) utility relocation, (c) excavation, (d) construction of track drains, (e) installation of concrete track slab and rails, (f) construction of station platforms, (g) installation of special track work units, (h) reconstruction of ramps and sidewalks, (i) paving, and (j) striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations.

Laydown and storage area(s) for construction would be established near the Project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have currently been identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th and 9th Streets. These should be regarded as example sites; other locations within the study area may become available and could also be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the Project alignment.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with *Los Angeles Municipal Code* (LAMC) 41.40(a). To expedite construction, certain construction activities may be permitted to occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. Construction activities will be required to follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; *California Manual on Uniform Traffic Control Devices;* and all City bureaus' design manuals, special provisions, and standard plans, including the latest *Standard Specification for Public Works Construction* (SSPWC or Greenbook); the City of Los Angeles Department of Public Works, Bureau of Engineering

(LABOE) Brown Book; the *Work Area Traffic Control Handbook*; and any Federal Transit Agency (FTA) requirements.

3. NOISE AND VIBRATION ASSESSMENT METHODOLOGY

3.1 Noise Assessment Approach

The basic approach used to identify potential noise impacts is:

1. **Identify sensitive receivers**. Noise-sensitive land uses along the corridor were identified first using aerial photography followed by field visits to confirm land uses and the presence of any features, such as intervening structures, that may provide acoustic shielding. Sensitive receivers were grouped based on their land use and location relative to the tracks.

2. **Determine existing conditions**. As discussed in Section 5, existing noise levels were measured along the Project corridor at 15 sites. The measurements are important because the FTA noise impact thresholds are on a sliding scale that is a function of existing noise levels (Ref. 1). The FTA noise and vibration impact criteria applicable to streetcar operations are summarized in Section 1.

3. **Develop prediction models**. The noise prediction models use standard formulas to characterize noise from rail transit vehicles and measurements of noise at existing streetcar and light rail systems. The prediction models incorporate the forecasted future number of streetcar operations per day, the distribution of these operations throughout the daytime, and nighttime, the distance from the tracks, the streetcar speed, and the presence of walls, berms, or structures that provide acoustic shielding for the receivers. The predictions of noise from streetcar operations include the additional noise from the use of the streetcar audible warning devices to alert passengers and patrons in stations that a streetcar is approaching. Audible warning devices are used at streetcar stops and stoplights. Audible warning devices would be used at the operators' discretion to alert pedestrians and motor vehicle drivers to potential safety risks, the same way that horns are used on buses. It was assumed that the audible warning device would have a noise level of 80 dBA at a distance of 50 feet,[1] which is a similar noise level as a bus horn. It was conservatively assumed that the audible warning device would be sounded at every stop, and at approximately half of the intersection crossings.

4. **Estimate future noise exposure at the representative receivers**. The prediction models were used to estimate future streetcar noise for each sensitive receiver. Predictions for each receiver are based on the distance from the proposed Project to the closest sensitive receiver and the expected streetcar and traffic parameters. The predicted levels of noise from streetcar operations and vehicular traffic were compared to the applicable FTA impact thresholds to identify potential noise impacts (see

---

[1] The California Public Utilities Commission General Order 143-B, Section 3.04, requires that each streetcar vehicle be equipped with an audible warning device capable of producing a warning of at least 75 dBA at a distance of 100 feet from the vehicle. Section 7.09 requires the audible warning device to be sounded at locations identified in the system's operating rules, or when the operator believes it is necessary.

Section 1). It is noteworthy that the City CEQA noise thresholds for railroad noise are also based on the FTA criteria.

5. **Evaluate mitigation options**. Mitigation options were evaluated for all locations where the predicted noise levels exceed the applicable FTA threshold for moderate or severe noise impact (see Section 7.6).

3.2 Vibration Assessment Approach

The approach for the vibration assessment was basically the same as for the noise assessment. The primary differences are:

- The propagation of vibration through the ground must be based on measurements while the propagation of noise through air can be characterized using standard formulas.
- Existing vibration is not a consideration when assessing vibration impacts. This is because everyone is exposed to some audible environmental noise while it is relatively rare for people to be exposed to perceptible groundborne vibration unless they are located near a construction site or near roadways with potholes, wide expansion joints, or other irregularities in the roadway surface.
- Outdoor spaces are not considered sensitive to groundborne vibration. In contrast, outdoor spaces where quiet is important for their intended function are considered noise sensitive. This includes spaces intended for meditation or study associated with cemeteries, monuments, or historical spaces.

3.3 Sources of Streetcar Noise

Following is an overview of the primary noise sources that may be associated with construction and operation of new streetcar systems:

Streetcar Operations: This is the normal noise from streetcars operating on city streets. At higher speeds the operational noise is dominated by the noise from steel wheels rolling on the steel rails (wheel/rail noise). At lower speeds, both the wheel/rail noise and the noise from the vehicle traction motors and the auxiliary equipment on the vehicle (e.g. air conditioning, compressors, and motor controllers) are important factors in the overall operational noise levels. The levels of wheel/rail noise are strongly dependent on the condition of the operating surfaces of the wheels and the rails. An important assumption in the noise assessment is that the wheels and rails would be maintained in good condition through periodic truing of the wheels and grinding of the rails. Therefore, a maintenance program to maintain the rails and wheels in good condition would be implemented as part of the Project.

Traffic Noise: Sometimes the introduction of a new rail transit system would result in substantial changes in traffic patterns and volumes. For example, traffic may be shifted from the streetcar route to parallel roads, which would reduce levels of traffic noise along the streetcar route but increase noise levels along the parallel routes. Existing noise levels in the Project corridor are dominated by noise generated by traffic. Based on the traffic studies, the proposed Project would result in only minor changes in traffic patterns in the Project area (ref. 8). As a result, the Project is anticipated to change the levels of traffic noise by less than 3 dB at any sensitive receiver. A change in traffic noise greater than 3 dB is necessary before the change is considered significant by CEQA.

Audible Warnings: The streetcars would be equipped with an audible warning device. The primary purpose of the audible warning device is to alert pedestrians and patrons at streetcar stops that a streetcar is approaching. The audible warning devices are expected to be used on a regular basis as streetcars approach, stop to load or unload patrons, and when starting from stoplights to signal that the streetcar is moving. In other locations audible warnings would be used occasionally to alert pedestrians and motor vehicle drivers of a potential safety risk, which is the same way that horns are used on buses.

Special Trackwork: The streetcar alignment would be constructed of continuously welded track, which eliminates the "clickety-clack" noise associated with older rail systems. The one exception is the special trackwork for turnouts and crossovers where two rails must cross. A fixture called a "frog" is used where rails must cross. The wheel impacts at the gaps in the rails of a standard frog cause noise levels near special trackwork to increase by approximately 6 dB. It is common for streetcar systems to use "flange-bearing" frogs. That is, there are ramps before and after the gap where the load is transferred from the wheel tread to the wheel flange. The ramps on typical streetcar flange-bearing frogs are short enough that the load transfer is quite abrupt and generates substantial noise.

The additional noise generated by the frogs can be reduced by increasing the length of the ramp so that the load transfer is more gradual. A "well-designed" flange-bearing frog with a ramp angle of at least 1:20 and preferably 1:100 would minimize and may eliminate the 6 dB increase in noise caused by the rapid load transfer.

Wheel Squeal: Wheel squeal may be generated when steel-wheel transit vehicles including streetcars traverse tight radius curves. It is very difficult to predict when and where wheel squeal would occur. A general guideline is that there is the potential for wheel squeal at any curve with a radius that is less than approximately 400 feet.

Sensitive receivers that are located within 150 feet of these curves could be affected by wheel squeal noise. Common approaches to controlling wheel squeal include (1) using resilient wheels with wheel dampers, (2) applying a friction modifier to the railhead and/or the wheel tread, (3) applying lubricant to the gauge face of the rail or the wheel flange, and (4) optimizing the wheel and rail profiles. Maintaining the tracks would help control wheel squeal; also, periodically truing wheels would maintain an optimum profile and can help minimize wheel squeal. It is expected that either on-vehicle or wayside applicators of lubricant or friction modifier would fully control wheel squeal.

Ancillary Equipment: Ancillary equipment is defined as the wayside equipment needed to support the proposed streetcar transit system. The only ancillary equipment likely to generate noticeable noise is the traction power substation (TPSS) units, although modern TPSS units are relatively quiet. Five TPSS units are planned for this Project. The key guidelines to avoid impacts from TPSS units are:

1. Include noise limits in the specifications when purchasing the TPSS units,
2. Locate TPSS units at least 50 feet from sensitive receivers,
3. Direct cooling fans installed on the TPSS units aimed away from the receivers, and
4. Use of sound walls or partial enclosures.

Construction: All the sources discussed above are associated with the operation of the proposed Project. Although construction of a streetcar project entails relatively limited use of heavy equipment compared to other rail projects, construction activities nevertheless would generate relatively high noise levels. Measures recommended for mitigating construction noise impacts include: (1) require all construction to be in compliance with City of Los Angeles limits and that variances be obtained for nighttime construction, (2) require use of specialty equipment with enclosed engines and high-performance mufflers, (3) install temporary barriers, and (4) locate equipment and staging areas as far from noise-sensitive receivers as possible. In addition, the contractor would be required to develop and implement a Noise Control Plan to mitigate potential construction noise impacts at the sensitive receivers.

3.4 Sources of Streetcar Vibration

Both the construction and operation of a modern streetcar system would generate vibration that is transmitted through the ground and into nearby buildings. It is very rare for the vibration to be high enough for there to be any risk of even minor cosmetic damage to fragile structures. However, it is possible for construction vibration to approach risk thresholds for minor cosmetic damage, and both construction and streetcar operations have the potential to generate vibration that may be intrusive to building occupants. Following is a list of vibration sources associated with the proposed streetcar system.

Streetcar Operations: Streetcar operations create groundborne vibration that can be intrusive to occupants of buildings that are located close to the tracks. This is particularly important for residential land uses that are located within 40 feet of streetcars operating at speeds exceeding 25 mph.

Special Trackwork: Wheel impacts at special trackwork such as turnouts and crossovers can increase vibration levels by approximately 10 dB unless special fixtures are used that minimize the magnitude of the wheel impacts.

Construction: Construction of a streetcar project entails relatively limited use of heavy equipment compared to other rail projects. Nevertheless, construction activities including demolition, excavation, and soil compaction can generate relatively high vibration levels. Measures that would be required by the

City to control construction-related vibration are: (1) a pre-construction survey of important and potentially fragile historic resources in the Project area, (2) construction vibration limits for all buildings in the corridor, (3) vibration monitoring at buildings that require lower vibration limits such as fragile historic buildings that are located within 200 feet of heavy construction activities and at any locations where there are complaints about construction vibration, and (4) use of alternate construction procedures to minimize vibration.

4. REGULATORY FRAMEWORK

The noise and vibration impact criteria for use on federally financed transit projects are defined in the FTA manual *Transit Noise and Vibration Impact Assessment* (Ref. 1), which is commonly referred to as the FTA Guidance Manual. The FTA guidelines, analysis methods, and criteria reflect the best available research on the topic. The State of California uses the FTA impact criteria to determine acceptable levels of noise and groundborne vibration (Ref. 2). As part of the *California Environmental Quality Act* (CEQA) the City of Los Angeles has established impact threshold of significance for all non-streetcar noise sources such as changes in traffic noise with the proposed Project compared to without the proposed Project. The City of Los Angeles Noise Ordinance limits the hours of construction. These limits apply to the construction of the proposed Project. There are no City of Los Angeles vibration regulations that are applicable to the proposed Project. The details of all the applicable noise and vibration regulations for the proposed Project are discussed below.

4.1 FTA Noise Impact Criteria

Table 4-1 lists the three land-use categories that FTA uses for noise assessments along with the noise metric that is used for each category. For Category 2 land uses, noise exposure is characterized using Ldn, while for Category 1 and Category 3 land uses, noise exposure is characterized using the maximum one-hour Leq. It is noteworthy that Category 2 land uses (residential) include residences, motels, hotels, and any other place where people typically sleep. Appendix A provides background information on noise and vibration including definitions of the Ldn and Leq noise descriptors.

The basic concept of the FTA noise impact criteria is that more project noise is allowed in areas where existing noise is higher, but that the decibel increase in total noise exposure (the decibel sum of existing noise and project noise) decreases. For example, the existing noise level in downtown areas are higher than in suburban neighborhoods that are not close to loud noise sources such as freeways. Therefore, more project noise is allowed by FTA in noisier downtown areas compared to relatively quieter suburban areas.

FTA defines two levels of noise impact: ***moderate*** and ***severe*** (Table 4-2). In accordance with the FTA Guidance Manual, mitigation to eliminate noise impacts must be investigated for both degrees of impact. The manual also states that for severe impacts "…there is a presumption by FTA that mitigation is incorporated into the Project unless there are truly extenuating circumstances which prevent it." In considering mitigation for severe impacts in this study, the goal has been to reduce noise levels to below the moderate impact threshold.

FTA allows more discretion for mitigation of moderate impacts based on the consideration of factors including cost, number of sensitive receivers affected, community views, the amount by which the predicted levels exceed the impact threshold, and the sensitivity of the affected receivers. The FTA noise impact criteria are given in tabular format in Table 4-2 with the thresholds rounded up to the nearest decibel. The criteria are shown graphically in Figure 4-1 for the different categories of land use along with an example of how the criteria are applied. The left two graphs are for nonresidential land uses where Leq(h) is the metric used to define noise exposure, and the top right graph is for residential land uses where Ldn is the noise exposure metric. As shown in Figure 4-1, the impact threshold is a sliding scale and the threshold typically increases with an increase in existing noise exposure. The existing noise appears on the horizontal axis, and the amount of new noise that the Project can create is on the vertical axis. The lower curve (blue) defines the threshold for moderate impact and the upper curve (red) defines the threshold for severe impact. Figure 4-2 shows the mathematical equations for the curves shown in Figure 4-1.

Table 4-1. FTA Land Use Categories and Noise Metrics

Land Use Category	Noise Metric (dBA)	Description of Land Use Category
1	Outdoor Leq (h)[a]	A tract of land where quiet is an essential element of their intended purpose. This category includes lands set aside for serenity and quiet and such land uses as outdoor amphitheaters and concert pavilions, as well as national historic landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn	Residences and buildings in which people sleep. This category includes homes, hospitals, and hotels, where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq (h) [a]	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches, where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

Source: FTA Guidance Manual, May 2006 (Ref. 1).
Notes:
(a) Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.

The sample graph located in the bottom right corner of Figure 4-1 may help clarify the concept of a sliding scale for noise impact. Assume that the existing noise has been measured at 60 dBA Ldn. This is the total noise from all existing noise sources over a 24-hour period: traffic, aircraft, lawn mowers, children playing, birds chirping, etc. Starting at 60 dBA on the horizontal axis, follow the vertical line up to where it intersects the moderate and severe impact curves. Then refer to the left axis to see the impact thresholds. An existing noise of 60 dBA Ldn gives thresholds of 57.8 dBA Ldn for moderate impact and 63.4 dBA Ldn for severe impact. Note that the values are given in tenths of a decibel to avoid confusion from rounding off; in reality, one cannot perceive a tenth of a decibel change in sound level.

In the example discussed above, the Project noise has thresholds of 57.8 dBA Ldn and 63.4 dBA Ldn. This is the new noise generated by operating the transit project. If the predicted Project noise is greater than 57.8 dBA Ldn, there is moderate impact and noise mitigation must be considered. If the predicted Project noise exceeds 63.4 dBA Ldn, then there is severe impact and, as discussed above, noise mitigation must be included in the Project unless there are compelling reasons why mitigation is infeasible.

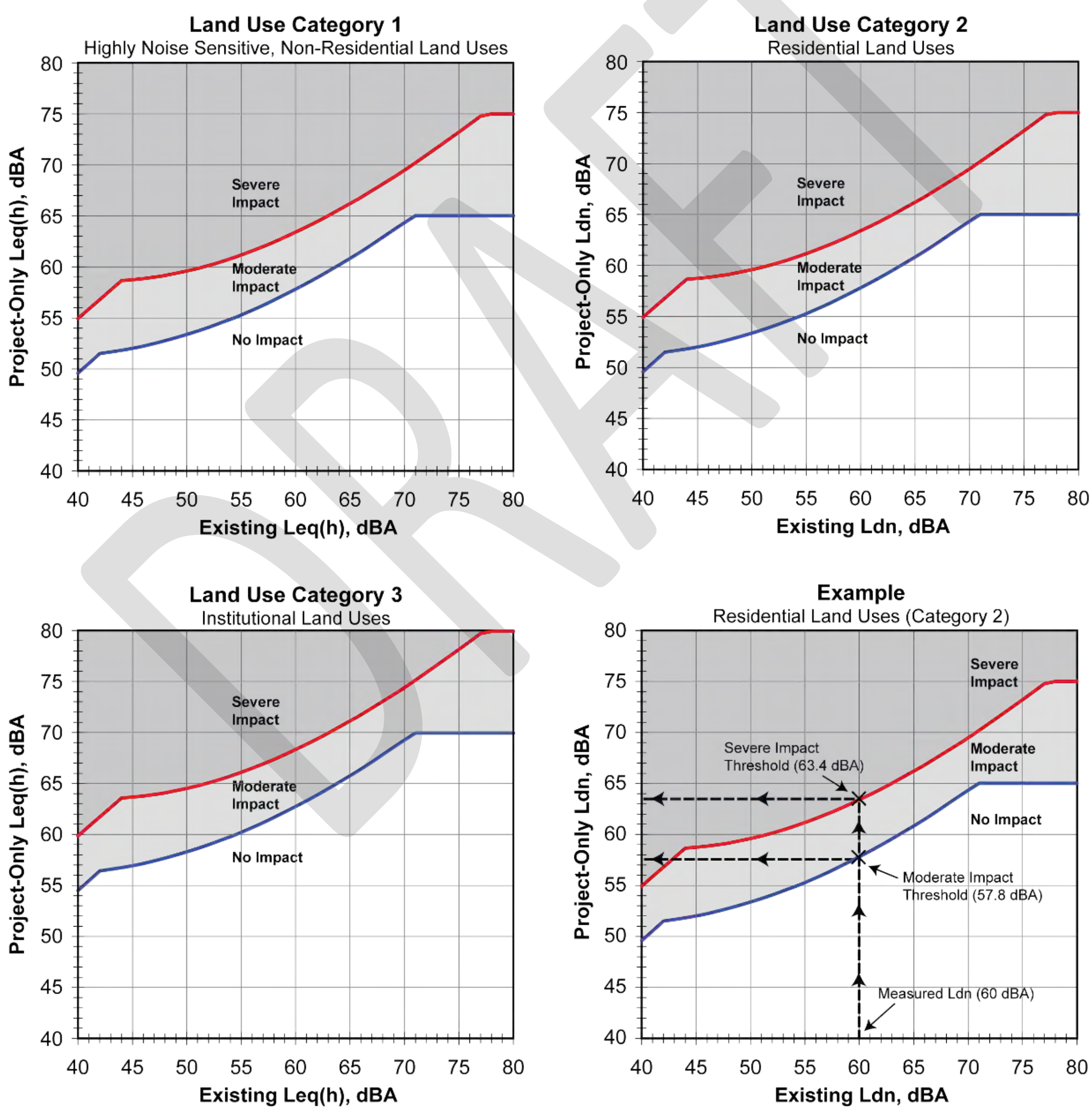


Figure 4-1: FTA Noise Impact Criteria

Source: FTA Guidance Manual, May 2006 (Ref. 1)

<u>Threshold of Moderate Impact</u>

Category 1 and 2

$L_p = 11.450 + 0.953L_E$ $\quad L_E < 42$

$Lp = 71.662 - 1.164L_E + 0.018L_E^2 - 4.088\times10^{-5}L_E^3$ $\quad 42 \leq L_E \leq 71$

$Lp = 65$ $\quad L_E > 71$

Category 3

$L_p = 16.450 + 0.953L_E$ $\quad L_E < 42$

$Lp = 76.662 - 1.164L_E + 0.018L_E^2 - 4.088\times10^{-5}L_E^3$ $\quad 42 \leq L_E \leq 71$

$Lp = 70$ $\quad L_E > 71$

<u>Threshold of Severe Impact:</u>

Category 1 and 2

$L_p = 17.322 + 0.940L_E$ $\quad L_E < 44$

$Lp = 96.725 - 1.992L_E + 3.02\times10^{-2}L_E^2 - 1.043\times10^{-4}L_E^3$ $\quad 42 \leq L_E \leq 71$

$Lp = 75$ $\quad L_E > 71$

Category 3

$L_p = 22.322 + 0.940L_E$ $\quad L_E < 44$

$Lp = 101.725 - 1.992L_E + 3.02\times10^{-2}L_E^2 - 1.043\times10^{-4}L_E^3$ $\quad 42 \leq L_E \leq 77$

$Lp = 80$ $\quad L_E > 77$

where:

L_p= impact threshold and L_E=Existing noise exposure

Source: Ref. 1

Figure 4-2: Equations Used for the FTA Noise Impact Criteria

Source: FTA Guidance Manual, May 2006 (Ref. 1)

Table 4-2. FTA Noise Impact Criteria				
Existing Noise Exposure, Leq or Ldn	Project Noise Exposure Impact Thresholds, Leq or Ldn (dBA)			
	Category 1 or 2 Land Uses		Category 3 Land Uses	
Moderate Impact	Moderate Impact	Severe Impact	Moderate Impact	Severe Impact
<43	Ambient+10	Ambient+15	Ambient+15	Ambient+20
43	52	58	57	63
44	52	58	57	63
45	52	58	57	63
46	53	59	58	64
47	53	59	58	64
48	53	59	58	64
49	54	59	59	64
50	54	59	59	64
51	54	60	59	65
52	55	60	60	65
53	54	60	60	65
54	55	61	60	66
55	56	61	61	66
56	56	62	61	67
57	57	62	62	67
58	57	62	62	67
59	58	63	63	68
60	58	63	63	68
61	59	64	64	69
62	59	64	64	69
63	60	65	65	70
64	61	65	66	70
65	61	66	66	71
66	62	67	67	72
67	63	67	68	72
68	63	68	68	73
69	64	69	69	74
70	65	69	70	74
71	65	70	71	75
72	66	71	71	76
73	66	71	71	76
74	66	72	71	77
75	66	73	71	78
76	66	74	71	79
77	66	74	71	79

>77	66	75	71	80

Source: FTA Guidance Manual, May 2006, Ref. 1.

Notes:

(a) Ldn is used for land uses where nighttime sensitivity is a factor; maximum one hour Leq is used for land use involving only daytime activities. All values in this table are rounded up to the nearest integer.

(b) Impact thresholds are rounded up to the nearest decibel.

4.2 California State and City of Los Angeles Noise and Vibration Limits

The City of Los Angeles (City) uses the impact criteria developed by the FTA to determine acceptable levels of noise and groundborne vibration for the proposed Project (Ref. 2).

California Environmental Quality Act

The *California Environmental Quality Act* (CEQA) of 1970 requires state, local, and other agencies to evaluate the environmental implications of their decisions and to avoid or reduce, when feasible, the significant environmental impacts of their decisions (Ref. 5). The CEQA guidance applicable to the proposed Project is provided in the City CEQA Thresholds Guide (Ref. 2).

CEQA Guidance

CEQA identifies specific issues to be addressed when determining whether a project could have a significant noise impact.

- Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- Would the Project result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?
- Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the Project?

City of Los Angeles Impact Significance Thresholds for Construction (Ref. 2)

A Project would normally have a significant impact on noise levels from construction if:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use;

- Construction activities lasting more than 10 days in a three month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

City of Los Angeles Impact Significance Thresholds for Project Operation (Ref.2)

A streetcar Project would normally have a significant impact on noise levels from project operations if the Project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase (see Table 4-3).

Except on W 11th Street and Hill Street, the existing noise level on the proposed Project corridor was Ldn 67 dBA or higher (see Section 6.1). The Ldn, like CNEL, measures noise exposure over a 24-hour period and adds a penalty based on the time of day. The Ldn adds a 10-decibel penalty for nighttime noise (10 PM to 7 AM). The CNEL adds a 5- decibel penalty for noise generated during evening time (7 PM to 10 PM), in addition to the 10-decibel penalty for nighttime. Therefore, the Ldn measurement is slightly less sensitive than CNEL, but it results in very similar noise ratings for most community settings, usually differing by less than 1 dBA (Ref. 2). For the current Project corridor, CNEL was approximately 0.3 dBA higher than Ldn at all 24-hour noise measurement sites. Therefore, the two metrics are virtually the same. The details of CNEL and Ldn are given in Appendix Section A.1. Based on Table 4-3 and the relation between CNEL and Ldn, it can be interpreted that the Project would result in significant noise impact at residential and institutional land uses if:

- The Project causes the existing noise level measured at the property line of affected uses to increase by 3 dBA in CNEL or Ldn to or within the 'normally unacceptable' or 'clearly unacceptable" categories presented in Table 4-3. A significant noise impact would occur if the existing Ldn is 67 dBA or greater at residential and institutional land uses and the Project would cause noise at the property line of the noise sensitive receptor to increase by 3 dBA or more.

- The Project causes the existing noise level measured at the property line of affected uses to increase by 5 dBA in CNEL or Ldn. A significant impact would occur if the existing Ldn is 65 dBA or lower at residential and institutional land uses and the Project would cause noise at the property line of the noise sensitive receptor to increase by 5 dBA or more.

In addition, when the existing Ldn is between 65 and 67 dBA at residential and institutional land uses and the allowed noise increase due to the Project at the property line of the noise sensitive receptor ranges from 5 dBA to 3 dBA there is significant noise impact. For example, when the existing Ldn is 66 dBA, the allowed noise increase is 4 dBA before there is significant noise impact. Therefore, there should be at least 3 dBA increase in noise at the receivers before there is a CEQA impact from a new project. The LA CEQA Guidelines also states that "the FTA regulates noise generated by moving trains (e.g. whistles, warning signals, wheels on rails), rail maintenance yards, and activity associated with rail facilities" (Ref. 2).

CEQA thresholds of significance for noise and vibration from operations of the streetcar are based on the FTA criteria. Exceedance of the FTA severe noise impact criteria and/or depending on existing noise level Ldn of an increased range by at least 3 dBA to 5 dBA at sensitive receivers, is considered a significant impact under CEQA for this Project. This approach would ensure that the noise generated by the streetcar operations do not exceed the standards established by either the City CEQA guidelines or FTA impact thresholds. Exceedance of the FTA vibration impact criteria is considered a significant impact for this Project under CEQA.

A substantial increase in Project traffic noise is considered a significant impact by the City of Los Angeles. A doubling of traffic volume is defined as a substantial increase in Project noise (Ref. 2).

There are no vibration limits stipulated by the City of Los Angeles. Therefore, the FTA vibration thresholds discussed in Section 4.4 is used for the purposes of CEQA analysis.

Table 4-3. CEQA Noise Limits for Land Uses				
Land Use	**Community Noise Exposure – CNEL, dBA**			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Single Family, Duplex, Mobile Homes	50-60	55-70	70-75	Above 75
Multi-Family Homes	50-65	60-70	70-75	Above 75
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	Above 80
Transient Lodging – Motels, Hotels	50-65	60-70	70-80	Above 80
Auditoriums, Concert Halls, Amphitheaters	-	50-70	-	Above 65
Sports Arena, Outdoor Spectator Sports	-	50-75	-	Above 70
Playgrounds, Neighborhood Parks	50-70	-	67-75	Above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	-	70-80	Above 80
Office Buildings, Business and Professional Commercial	50-70	67-77	Above 75	-
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	Above 75	-

Source: LA CEQA Thresholds Guide (Ref 2), 2006.

(a) Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

(b) Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning would normally suffice.

(c) Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

(d) Clearly Unacceptable: New construction or development should generally not be undertaken.

4.3 Local Construction Noise Limits

City of Los Angeles

The noise ordinance for the City of Los Angeles does not apply to "any vehicle which is operated upon any public highway, street or right-of-way" Section 114.02(a) (Ref. 3). Section 41.40 of the *Los Angeles Municipal Code* states that engaging in construction, repair, or excavation work with any construction type device or job-site delivering of construction materials without a Police Commission approved variance would constitute a violation (Ref. 4):

- Between the hours of 9 PM and 7 AM.
- In any residential zone, or within 500 feet of land so occupied, before 8 AM or after 6 PM on any Saturday, or at any time on any Sunday.
- In a manner as to disturb the peace and quiet of neighboring residents or any reasonable person of normal sensitiveness residing in the area.

Therefore, a variance would be required to perform construction activities during the restricted hours of the weekdays and on Saturday and Sundays.

4.4 FTA Impact Criteria for Groundborne Vibration

As discussed in Appendix A.2, the potential adverse effects of rail transit groundborne vibration include perceptible building vibration, rattle noises, reradiated noise (groundborne noise), and cosmetic or structural damage to buildings. The vibration caused by the operation of typical modern streetcar vehicles is well below what is considered necessary to cause even minor cosmetic damage to buildings. Therefore, the criteria for building vibration caused by transit operations are only concerned with potential annoyance of building occupants.

One potential concern is historic buildings and other cultural resources that may be fragile and particularly susceptible to damage from ground motions caused by potential construction vibration. Several historic buildings and other resources have been identified in the study area. However, none of the structures appear to be unusually fragile. Therefore, the vibration assessment of these structures is based on the current use of the building. The potential for construction vibration to damage structures during construction is covered in Section 8.2 Construction Vibration.

The FTA vibration impact criteria are based on the maximum indoor vibration level as a streetcar passes. There are no impact criteria for outdoor spaces such as parks. The FTA Guidance Manual provides two sets of criteria: one based on the overall vibration velocity level for use in a “General Vibration Impact Assessment” and one based on the maximum vibration level in any 1/3 octave band (the band maximum level) for use with a “Detailed Vibration Assessment”, which was performed for this Project.

Table 4-4 shows the FTA General Assessment criteria for groundborne vibration from rail transit systems. As with the FTA noise criteria, there are three categories of sensitive land uses. However, the category definitions for vibration are different for those for noise. The primary difference is in Category 1. For a noise assessment, Category 1 applies to land uses “…where quiet is an essential element of their intended purpose.” For a vibration assessment, Category 1 applies to “Buildings where vibration would interfere with interior operations...,” which primarily applies to spaces that house sensitive research and laboratory equipment such as scanning electron microscopes. There are no buildings in the proposed Project corridor that qualify as Category 1 vibration sensitive land uses.

Unlike the FTA noise criteria, the vibration criteria do not incorporate any factor to account for the number of vibration events per day with one exception. The exception is that for “occasional service,” the FTA impact thresholds are 3 VdB higher than for “frequent service” and for “infrequent service,” the FTA impact thresholds are 8 VdB higher than for frequent service. FTA defines occasional service to be between 30 and 70 events per day and infrequent service to be less than 30 events per day. The frequent criteria are applicable to the proposed Project as there would be more than 70 streetcar trips per day.

The FTA vibration thresholds do not specifically account for existing vibration. Although downtown Los Angeles has substantial volumes of vehicular traffic including buses and trucks, it is relatively rare that rubber-tired vehicles would generate perceptible ground vibration unless there are irregularities in the roadway surface such as potholes or wide expansion joints.

The refined criteria for use with Detailed Vibration Assessments are shown in Figure 4-3. For the Detailed Assessment, the predicted vibration levels in terms of the 1/3 octave band spectra are compared to the curves shown in Figure 4-3 to determine whether there is impact and the frequency range over which vibration mitigation is required. Impact occurs when any spectral value exceeds the applicable curve. The FTA interpretation of how each of the curves shown in Figure 4-3 should be applied is given in Table 4-5. The VC-A through VC-E curves are used to specify acceptable vibration limits for sensitive equipment such as electron microscopes. Which curve to use depends on the sensitivity of the specific equipment that would be affected. With the exception of a few particularly sensitive pieces of equipment such as Transmission Electron Microscopes (TEM) or Atomic Force Microscopes (AFM), the VC-C curve is generally considered adequate to avoid interfering with the operation of most sensitive equipment.

The use of the Detailed Vibration Assessment criteria is illustrated by the example vibration spectrum (the blue dashed line) shown in Figure 4-3. The maximum level of the vibration spectrum exceeds the “Residential (Night)” curve in the 50 and 63 Hz 1/3 octave bands. For this example, impact would be predicted for residential land uses and vibration mitigation would need to be evaluated, even though all of the 1/3 octave band levels fall below the “Residential (Day)” curve. Typical sensitive equipment and their appropriate VC-curves are listed in Table 11.

The FTA Manual does not provide a Detailed Vibration Assessment criteria for institutional land uses. However, where the General Assessment threshold is exceeded and the predicted vibration spectrum at an institutional land use is available, it is reasonable to apply the Residential (Day) curve of the Detailed Vibration Assessment criteria to assess impacts. This is a valid approach because institutional land uses are used primarily during the day and the vibration level for annoyance would not be more stringent than residential land use.

The approach used for this Project are the General Assessment criteria of Table 4-4 to identify potential vibration impacts. Then the Detailed Assessment criteria were applied to determine whether vibration mitigation would be warranted. The Detailed Vibration Assessment curve for Residential (Day) was applied for institutional land uses and the Residential (Night) curve was used for residential land uses.

There are some buildings, such as concert halls, recording studios, and theaters, which can be very sensitive to vibration but do not fit into any of the three categories listed in Table 4-4 and cannot be associated with the curves in Figure 4-3. Due to the sensitivity of these buildings, they usually warrant more detailed vibration assessment during the environmental evaluation of a transit project. Table 4-5 gives the FTA criteria for acceptable levels of groundborne noise and vibration for various categories of “special” buildings. The five theaters on Broadway, the Belasco Theater on 11th Street, Colburn School, and Disney Concert Hall are “special” buildings that have been identified in the Project corridor. Disney Concert Hall and the Belasco Theater were evaluated as concert halls. The Orpheum Theater was evaluated as a TV recording facility/performance space. The Colburn School is a performance school and a conservatory of music with music recording facilities. This school was evaluated as a recording facility. The Million Dollar Theater, and Los Angeles Theater are located on Broadway and are currently unoccupied, but could potentially be revived in the future. These theaters were evaluated as concert halls. The United Artist Theater has been renovated and opened as the Theatre at Ace Hotel. The appropriate FTA thresholds that were applied for the groundborne noise and vibration impact assessment from the various “special” buildings are listed in Table 4-6.

Table 4-4. FTA Impact Thresholds for Groundborne Vibration, General Impact Assessment

Land Use Category	Groundborne Vibration (VdB re 1 micro inch/sec)		
	Frequent Events	Occasional Events	Infrequent Events
Category 1. Buildings where vibration would interfere with interior operations. Typically land uses include vibration-sensitive research and manufacturing, hospitals with vibration-sensitive equipment, and university research operations.	65	65	65
Category 2. Residences and buildings where people normally sleep.	72	75	80
Category 3. Institutional land uses with primarily daytime use.	75	78	83

Source: FTA Guidance Manual, May 2006 (Ref. 1).

Notes:

(a) Frequent events defined as more than 70 vibration events per day.
(b) Occasional events are defined as between 30 and 70 events per day.
(c) Infrequent events defined as less than 30 events per day.
(d) Vibration sensitive equipment is not sensitive to groundborne noise.

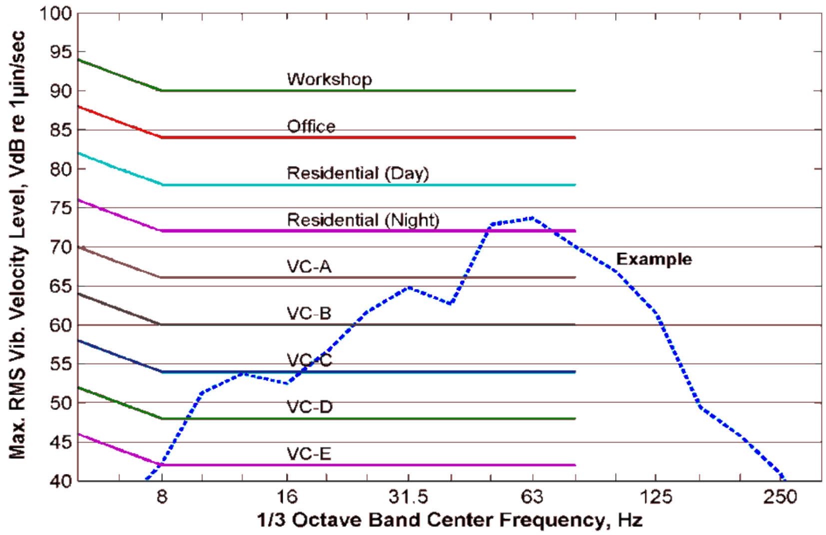


Figure 4-3: FTA Criteria for Detailed Vibration Analysis

Source: FTA Guidance Manual, May 2006 (Ref. 1)

Table 4-5. Interpretation of Vibration Criteria for Detailed Analysis		
Criterion Curves	**Max Lv[a] (VdB)**	**Description of Uses**
Workshop	90	Distinctly feelable vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Feelable vibration. Appropriate to offices and non-sensitive areas.
Residential Day	78	Barely feelable vibration. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night, Operating Rooms	72	Vibration not feelable, but groundborne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.
VC-A	66	Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment.
VC-B	60	Adequate for high-power optical microscopes (1000X), inspection and lithography equipment to 3 micron line widths.
VC-C	54	Appropriate for most lithography and inspection equipment to 1 micron detail size.
VC-D	48	Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capability.
VC-E	42	The most demanding criterion for extremely vibration-sensitive equipment.

Source: FTA Guidance Manual, May 2006 (Ref. 1).

Notes:

(a) Maximum allowed vibration velocity level in any 1/3 octave band over the range of 8 to 80 Hz.

Table 4-6. Groundborne Noise and Vibration Impact Criteria for Special Buildings		
Location	**Groundborne Vibration Impact Levels (VdB re 1 µin/sec)**	**Groundborne Noise Impact Levels (dB re 20 µ-Pascals)**
Concert Halls	65	25
TV Studios	65	25
Recording Studios	65	25
Auditoriums	72	30
Theaters	72	35

Source: FTA Guidance Manual, May 2006 (Ref. 1).

5. INVENTORY OF NOISE AND VIBRATION SENSITIVE LAND USES

Noise and vibration sensitive receivers in the proposed Project corridor were identified using aerial photographs and site visits. These receivers consist of multi-family residences, theaters, concert halls, parks, medical facilities, training institutes, a school, two courthouses, a library, a museum, and a church. Most of the sensitive receivers are located in buildings with mixed land uses. The land use categories used by FTA for noise and vibration are discussed in Section 1. Restaurants, businesses, warehouses and manufacturing facilities are not considered noise and vibration sensitive by FTA. The majority of the sensitive receivers are common to both Project Alternatives.

The inventories of the sensitive receivers in the Project corridor are grouped according to the FTA land use categories and shown in Table 5-1 through Table 5-3.

Some key points from the inventory of the sensitive receivers are:

- **FTA Noise Category 1-Special Buildings, Theaters and Concert Halls**: There are theaters, concert halls, and a music school in the Project corridor (see Table 5-1). These receivers are common to both Project Alternatives. The concert halls along the alignment that are currently in use are the Disney Concert Hall and the Belasco Theater. The Orpheum Theater is a performance space on Broadway that is currently used for TV recordings, film shootings, theatrical productions, and other special events that are sensitive to background noise and vibration. The Million Dollar Theater and Los Angeles Theater are not currently used as theaters or performance spaces; however, they were evaluated as concert halls because of potential future plans for their renovation and revival. The United Artists Theater has been renovated and opened as the Theatre at ACE Hotel. So this building was evaluated for both theater (Site T6) and residential land use (Site R19A). The Colburn School is located at the southeast corner of Grand Avenue and 2nd Street at a distance of 180 feet away from the proposed tail tracks on Grand Avenue. It is considered a Category 1 land use because it is a performance school and a conservatory of music with recording facilities.

- **FTA Category 2 - Residential land uses**: There are a number of multi-family residential buildings in the Project corridor. Adjacent residential buildings that would be exposed to the same levels of streetcar noise and vibration have been combined into one receiver. The locations and groupings of the residential land uses are shown on aerial photographs in Appendix E and listed in Table 5-2. As shown in Table 5-2, 36 residential receivers were identified for the Alternatives 2 and 3 of which 33 are common with Alternatives 4 and 5. There are four additional residential receivers for Alternatives 4 and 5. All residential receivers in the Project corridor are multi-family in mixed land use areas. The multi-family residential dwelling units are located typically on the second floor and above in the Project corridor. Units that are located on the lower floors of the building are the closest to the streetcar alignment. The distance for noise propagation from the streetcar to the upper floor units have been assessed separately from units on the lower floors.

There are only limited residential units that have balconies and hence outdoor areas with frequent human activity that would be exposed to streetcar noise. The residential receivers for Alternatives 2 and 3 represent 574 dwelling units located between the second and fifth floor, and 937 dwelling units located above the fifth floor. The residential receivers for the 9th Street Alternative represent 516 dwelling units located between the second and fifth floor, and 955 dwelling units located above the fifth floor.

- **FTA Category 3 - Institutional and Recreational Land Uses**: There are 15 institutional land uses along Alternatives 4 and 5 that include parks, a school, a courthouse, a library, training institutes, a museum, medical facilities, and a church (Table 5-3). It also includes the future Federal Courthouse on 1st Street between Hill and Broadway. Thirteen of the institutional land uses are common with Alternatives 2 and 3. There are no additional institutional land uses for these alternatives.

There are many historic buildings in the Project corridor including 50 properties that are listed in the national register, approximately 50 properties listed as Historic Cultural Monuments (HCM) and more than 10 properties that are eligible for the local register. The historic properties have been evaluated for noise and vibration impacts based on their current use.

Table 5-1. Inventory of Theaters and Concert Halls

Receiver ID	Description	Address	FTA Noise Category [(a)]	FTA Vib. Category [(b)]
All Build Alternatives				
T1	Colburn School	200 S Grand Ave	1	Recording Studio
T2	Disney Concert Hall	111 S Grand Ave	1	Concert Hall
T3	Million Dollar Theater[(c)]	307 S Broadway	1	Performance Space
T4	Los Angeles Theater	615 S Broadway	1	Performance Space
T5	Orpheum Theater[(c)]	842 S Broadway	1	TV Recordings and Live Performance Facility
T6	United Artist Theater[(c)]	933 S Broadway	1	Performance Space
T7	The Belasco Theater	1050 S Hill St	1	Building: Concert Hall
T8	Dorothy Chandler Pavilion	135 N Grand Ave	1	Concert Hall

Source: ATS Consulting, January 2013.

Notes:

(a) FTA land use category for noise. Details of the FTA land use categories are discussed in Section 1.

(b) FTA land use category for vibration. Details of the FTA land use categories are discussed in Section 1.

(c) Theaters that have residential units in the same building. The residential units in these mixed use buildings are included in the residential land use receivers. The Million Dollar Theater is currently unoccupied but could be renovated.

Table 5-2. Inventory of Residential Land Uses				
Receiver ID [a]	**Description [b]**	**Location**	**Number of Dwelling Units [b]**	
			Floors 1 to 5	**Floors 6 & Above**
R1	MFR	Broadway/3rd Street	18[e]	20[e]
R2	MFR	Broadway/3rd Street	4	--
R3	MFR	Broadway/3rd Street	9	12
R4	MFR	Broadway/4th Street	12	20
R5 [f]	MFR	Broadway/5th Street	6	15
R6	MFR	Broadway/5th Street	20	40
R7	MFR	Broadway/5th Street	4	0
R8	MFR	Broadway/5th Street	4	1
R9	MFR	Broadway/6th Street	12	9
R10	MFR	Broadway/6th Street	16	52
R11	MFR	Broadway/6th Street	16	20
R12	MFR	Broadway/7th Street	6	14
R13	MFR	Broadway/7th Street	15	35
R14	MFR	Broadway/7th Street	14	6
R15	MFR	Broadway/8th Street	19	49
R16	MFR	Broadway/9th Street	18	40
R17	MFR	Broadway/8th Street	37	37
R18	MFR [e]	Broadway/9th Street	16	53
R19	MFR [e]	Broadway/9th Street	34	40
R19A	MFR [f]	Broadway/9th Street	--[f]	--[f]
R20	MFR	Broadway/9th Street	5	--
R21 [f]	MFR	Broadway/11th Street	32	40
R22	MFR	11th Street/Grand Avenue	16	8
R23	MFR	11th Street/Hope Street	24	30
R24	MFR	11th Street/Flower Street	32	16
R25	MFR	Figueroa/11th Street	28	14
R26	MFR	Figueroa/Olympic Street	12	42
R27	MFR	Figueroa/Olympic Street	--	40
R28	MFR	Figueroa/9th Street	32	160
R32	MFR	Hill Street/5th Street	8	14
R33	MFR	Hill Street/4th Street	9	21
R34	MFR	Hill Street/3rd Street	15	35
R35	MFR	Hill Street/2nd Street	15	--
R29	Hotel	Figueroa/7th Street	6	20
R30	Hotel	7th Street/Flower Street	24	120
R31	MFR	7th Street/Olive Street	10	--
R36	MFR	Hope Street/Flower Street	24	12
R37	MFR	9th Street/Flower Street	35	80
R38	MFR	9th Street/Grand Avenue	15	--
R39	MFR	Hill Street/8th Street	24	30

Source: ATS Consulting, January 2013.

Notes:

(a) When adjacent residential buildings would be exposed to the same levels of streetcar noise, they have been combined into one receiver. The receiver locations are identified on aerial photographs in Appendix F.

(b) Description = Type of land use, SFR = single-family residence, MFR = multi-family residence.

(c) Number of individual dwelling units within the receiver group.

(d) Includes residential units in the adjacent theater building.

(e) These receivers have FTA Category 3 (Institutional) receivers on the 1st floor.

(f) This is the Theatre at ACE Hotel, the renovated Theater.

Table 5-3. Inventory of Institutional Land Uses

Receiver ID	Description	Location	FTA Noise Category [a]	FTA Vib. Category [b]
All Build Alternatives				
I1	Mosk Courthouse	1st Street/Hill Street	3	3
I2	LA Law Library	1st Street/Hill Street	3	3
I2A	Federal Courthouse	1st Street/Hill Street	3	3
I3	Guadalupe Wedding Chapel	Broadway/2nd Street	3	3
I4	Optometrist	Broadway/6th Street	3	3
I5	Clinic	Broadway/6th Street	3	3
I6	Optometrist	Broadway/7th Street	3	3
I7	Universal Church (Formerly The State Theater)	Broadway/9th Street	3	3
I8	SIA Tech School	11th Street/Hill Street	3	3
I9	YWCA Job Corps & SIA Tech School	11th Street/Olive Street	3	3
I10	Grammy Museum	Figueroa/Olympic Street	3	3
I11	Pershing Square	Hill Street/6th Street	3	3
I12	Angels Knoll Park	Hill Street/4th Street	3	3
9th Street Alternative				
I13	Grand Hope Park	9th Street/Hope Street	3	3
I14	FIDM School	9th Street/Grand Avenue	3	3

Source: ATS Consulting, January 2013.

Notes:

(a) FTA land use category for noise. Details of the FTA land use categories are discussed in Section 1.

(b) FTA land use category for vibration. Details of the FTA land use categories are discussed in Section 1.

6. AFFECTED ENVIRONMENT

The following sections document the ambient noise and vibration and present the details of the vibration propagation tests. Appendix A provides some background on the fundamentals of noise and vibration. Appendix B has photographs and maps of the ambient noise measurement sites and presents the detailed measurement data. Appendix C shows the details of the vibration propagation test procedure and photos of the test sites. Appendix D provides the 1/3 octave “best fit” coefficients for the line source transfer mobility (LSTM) curves derived from the vibration propagation test results. Appendix E shows the locations of the sensitive receivers on Project design drawings.

6.1 Existing Noise Conditions

The existing ambient noise levels along the Project corridor were documented through measurements performed at representative sensitive receivers between September 2012 and March 2013. The noise measurements were performed only during weekdays (Monday through Friday). The primary existing noise source in the Project area is vehicular traffic on the streets in the streetcar alignment: Broadway, Grand, Hill, Figueroa, 1st, 7th, 9th, and 11th Streets. Long term noise measurements were performed at six sites and short term noise measurements were performed at nine sites. Definitions of the noise metrics used in the study are provided in Appendix A.

The locations of the noise measurement sites are shown in Figure 6-1. Photographs from each site are included in Appendix B.

The ambient noise measurement results are summarized in Table 6-1. The 24-hour Day-Night Sound Level exceeded 70 dBA at most locations, which is to be expected from downtown areas where the receivers are very close to primary noise sources such as vehicular and foot traffic combined with intermittent sirens and other loud activities. Except for site LT-2, the measurements at the long term noise sites were performed on the second or third floor balconies of residences or hotels. The only available location for mounting a microphone at site LT-6 was the ledge of a second floor window. Because the microphone was within 12 inches of the building wall, adjustments were made to the measured noise level to account for potential amplification by sound reflections off the wall.

Ldn was estimated at the short term noise sites by adding an adjustment factor to the measured 1-hour Leq. The adjustment factor was based on the difference between the measured Ldn and daytime Leq at the closest long term noise site.

The noise measurement sites are described below:

<u>Long Term Measurement Sites</u>

LT-1: 417 Hill Street: This measurement was made on a second floor balcony of the Metro 417 multi-family residential building. The measurement was performed for 24 hours starting at 2:30 PM on

September 18, 2012. The primary source of noise at this site was from traffic on Hill Street. The measured Ldn at this site was 66 dBA.

LT-2: 330 W. 11th Street: This measurement was made outside the Grand Loft multi-family residential Building at the street level. The measurement was performed for 24 hours starting at 1:10 PM on October 23, 2013. The primary source of noise at this site was traffic on 11th Street. The measured Ldn was 66 dBA.

LT-3: 939 S. Figueroa Street: This measurement was made on a second floor balcony of the Figueroa Hotel. The measurement was performed for 24 hours starting at 11:30 AM on September 20, 2012. The primary source of noise at this site was traffic on Figueroa Street. The measured Ldn was 73 dBA.

LT-4: 711 S. Hope Street: This measurement was made on a third floor balcony of the Sheraton Hotel. The measurement was performed for 24 hours starting at 1:30 PM on March 7, 2013. The primary source of noise at this site was traffic on 7th Street. The measured Ldn was 72 dBA.

LT-5: 901 Broadway: This measurement was made on a second floor balcony of the Blackstone Multi-family residential Building, facing 9th Street. The measurement was performed for 24 hours starting at 10:00 AM on January 24, 2013. The primary source of noise at this site was traffic on 9th Street. The measured Ldn was 72 dBA.

LT-6: 756 Broadway: This measurement was made on a second floor window ledge of the Chapman multi-family residential buildings. The measurement was performed for 24 hours starting at 2:30 PM on March 20, 2013. The primary source of noise at this site was traffic on Broadway. Because the microphone at this location was less than 1 foot from the wall, reflections from the wall could have increased the measured noise levels by as much as 5 decibels over what they would have been without the reflections. To account for this, the measured noise levels have been adjusted by −5 decibels to ensure that the existing noise levels are not overestimated. Note that underestimating the existing noise levels would tend to result in more stringent noise impact criteria. The adjusted Ldn at this site was 76 dBA.

Nighttime Noise Measurements

The existing noise levels during the nighttime hours of 10 PM to 7 AM were measured at Sites LT-1 through LT-6 as part of the 24 hour noise measurements. The nighttime noise measurements are summarized in Table 6-2. This data is a baseline for the existing environment at residential receivers that may be affected by nighttime construction activities.

Short Term Measurement Sites

ST-1: 111 S. Grand Avenue: This measurement was made outside the Disney Concert Hall at the street level. The measurement was for 1 hour starting at 12:10 PM on November 15, 2012. The primary source of noise at this site was traffic on Grand Avenue. The measured Leq was 67 dBA.

ST-2: 111 N. Hill Street: This measurement was made at the Mosk Courthouse on 1st Street. The measurement was for 1 hour starting at 1:20 PM on November 15, 2012. The primary source of noise was traffic on 1st Street. The measured Leq was 71dBA

ST-3: 207 S. Broadway: This measurement was made at 207 South Broadway. The measurement was for 1 hour starting at 2:35 on November 15, 2012. The primary source of noise was traffic on Broadway. The measured Leq at this site was 74 dB.

ST-4: 615 S. Broadway: This measurement was made at the Los Angeles Theatre on Broadway. The measurement was for 1 hour starting at 12:40 PM on January 8, 2013. The primary source of noise was traffic on Broadway. The measured Leq was 71 dBA.

ST-5: 842 S Broadway: This measurement was made at the Orpheum Theatre on Broadway. The measurement was for 1 hour starting at 1:50 PM on January 8, 2012. The primary source of noise was traffic on Broadway. The measured Leq was 73 dBA.

ST-6: 1050 S. Hill Street: This measurement was made at the Belasco Theatre on 11th Street. The measurement was for 1 hour starting at 1:15 PM on March 11, 2012. The primary source of noise was traffic on 11th Street. The measured Leq was 67 dBA.

ST-7: 800 W. Olympic Boulevard: This measurement was made at the LA Live Center outside of the Lawry's Carvery Restaurant. The measurement was for 1 hour starting at 2:30 PM on March 11, 2013. The primary source of noise was from traffic on Figueroa Street. The measured Leq was 68 dBA.

ST-8: 7th Street and Olive Street: This measurement was made at the northwest corner of the intersection of 7th Street and Olive Street. The measurement was for 1 hour starting at 1:50 PM on March 7, 2013. The primary source of noise was traffic on 7th Street. The measured Leq was 73 dBA.

ST-9: 501 Hill Street: This measurement was made in Pershing Square, midway between 5th and 6th Streets. The measurement was for 1 hour starting at 2:00 PM on March 7, 2013. The primary source of noise was traffic on Hill Street. The measured Leq was 69 dBA.

ST-10: This measurement was made at the rear of the Milner Hotel, between Figueroa Street and Flower Street. The measurement was for 1 hour starting at 2:00 PM on November 19, 2015. The primary source of noise was traffic on 8th and 9th Streets. The measured Leq was 65 dBA.

ST-11: This measurement was made on 11th Street midblock between Olive and Hill Streets. The measurement was for 1 hour starting at 2:00 PM on November 19, 2015. The primary source of noise was traffic on 11th Streets. The measured Leq was 69 dBA.

Table 6-1. Ambient Noise Measurement Results							
Site	**Location**	**Type of Land Use[a]**	**Duration**	**Start Time, hh:mm[b]**	**Distance, feet€**	**Leq (day) [d], dBA**	**Ldn[d], dBA**
LT-1	417 Hill St	2	24	2:30 PM	25	63	66
LT-2	330 [1]1th St	2	24	1:10 PM	25	65	66
LT-3	939 Figueroa St	2	24	11:30 AM	25	70	73
LT-4	711 Hope St	2	24	1:30 PM	25	69	72
LT-5	901 Broadway	2	24	10:00 AM	25	68	72
LT-6	756 Broadway	2	24	2:30 PM	25	73[e]	76[e]
ST-1	Disney Concert Hall	1	1	12:10 PM	15	67	67[f]
ST-2	Mosk Courthouse	3	1	1:20 PM	15	71	72[f]
ST-3	207 Broadway	3	1	2:35 PM	15	74	76[f]
ST-4	LA Theatre	1	1	12:40 PM	10	71	74[f]
ST-5	Orpheum Theatre	1	1	1:50 PM	15	73	77[f]
ST-6	Belasco Theatre	1	1	1:15 PM	15	67	70[f]
ST-7	LA Live	3	1	2:30 PM	15	68	70[f]
ST-8	7th and Olive	3	1	1:50 PM	15	73	77[f]
ST-9	Pershing Square	3	1	2:00 PM	15	69	73[f]
ST-10	Milner Hotel	2	1	2:00 PM	15	65	69[f]
ST-11	11th Street between Hill and Olive	3	1	2:00 PM	20	69	68[f]

Source: ATS Consulting, January 2013.

Notes:

(a) Land use of the nearest sensitive receiver.

(b) Start time of the measurement.

(c) Distance of microphone from the centerline of the nearest traffic lane.

(d) Leq for the duration of the measurement during the daytime hours (7 AM to 10 PM).

(e) Because the microphone at this site was on the ledge of a second floor window and within 1 foot of the closest wall, these level include a -5 dB adjustment factor to account for potential noise increase from reflections off the wall.

(f) Estimated Ldn based on the difference between the Ldn and daytime Leq at the closest long term site.

Table 6-2. Ambient Nighttime Noise Measurement Results – One Hour Leq (dBA)						
Start Hour hh:mm	**Site LT-1 417 Hill St**	**Site LT-2 330 11th St**	**Site LT-3 939 Figueroa St**	**Site LT-4 711 Hope St**	**Site LT-5 901 Broadway**	**Site LT-6 756 Broadway**
22:00	59.7	62.9	66.1	63.7	69.0	72.7
23:00	59.1	56.0	66.8	62.9	62.9	71.7
0:00	58.0	55.7	66.4	62.1	61.3	70.2
1:00	57.9	54.0	66.8	62.6	60.6	68.9
2:00	57.3	53.5	64.2	63.6	59.1	76.3
3:00	56.9	53.2	64.2	62.1	60.4	71.1
4:00	58.4	54.3	62.2	61.9	63.2	75.8
5:00	60.9	58.1	65.8	63.9	68.1	77.9
6:00	62.5	63.0	68.3	68.6	70.2	79.7

Figure 6-1: Overview of Noise and Vibration Measurement Locations

6.2 Existing Vibration Conditions

Existing vibration sources in the Project area primarily consist of vehicular traffic and intermittent construction activities. Vehicular traffic is the only permanent vibration source that was observed in the

Project area. When vehicular traffic causes perceptible vibration, the source usually is traced to potholes, wide expansion joints, or other "bumps" in the roadway surface. Therefore, the FTA assessment procedures for vibration from rail transit projects do not require measurements of existing vibration levels.

Localized geologic conditions such as soil stiffness, soil layering, and depth to bedrock, have a strong effect on groundborne vibration. Unfortunately, it is difficult to obtain information on subsurface conditions in sufficient detail so that computer models can be used to accurately predict ground vibration. As a result, most detailed predictions of ground vibration are based largely on empirical methods that involve measuring vibration propagation in the soil. The FTA Guidance Manual defines three levels of vibration assessment:

- Screening: Generalized distances of potential impacts are used to quickly determine whether there is any potential for impacts.
- General Assessment: FTA provides a general curve of train vibration vs. distance that is used to estimate the vibration levels. The curve was developed by plotting measured vibration levels from a number of different rail transit systems against distance from the tracks and drawing a line through the top range of the data. The curve provides a conservative (high) estimate of potential vibration impacts. Adjustments are made to the general curve to account for factors such as speed and special trackwork.
- Detailed Assessment: A Detailed Vibration assessment consists of using state-of-the-art tools to characterize how localized soil conditions affect the levels of groundborne vibration. The FTA Guidance Manual recommends using vibration propagation tests to measure how vibration would be transmitted from the streetcar tracks through the ground and into the foundations of nearby buildings.

Because many of the buildings with vibration sensitive land uses are within a few feet of the sidewalks, the streetcar tracks and these sensitive receivers would be relatively close to the buildings. Therefore a Detailed Vibration Assessment including vibration propagation tests was performed for this study. The description of the vibration propagation test is presented in Appendix C.

Vibration propagation tests were performed at three theaters that are currently in use and one surface parking lot. The data derived from the testing are the Line Source Transfer Mobility (LSTM) and the coherence curves for each accelerometer position. As discussed above, LSTM characterizes how vibration changes as it passes through the ground. Coherence is a measure of the "quality" of the LSTM results. A coherence close to 1 indicates that the vibration response and the exciting force from the drop hammer are closely related and that there is a relatively high level of confidence in the LSTM. A coherence less than about 0.2 indicates a relatively weak relationship between the exciting force and the vibration response and that there is a relatively low level of confidence in the measured LSTM. Low coherence would occur when the vibration signal generated by the drop hammer is lower than the ambient vibration, which would happen when ambient vibration is relatively high, when the distance between the drop hammer and the accelerometer is relatively high, or when the soil is a poor transmitter of vibration at a specific frequency.

The test sites and the measurement results are discussed below.

Site V-1, Disney Concert Hall: The impact line at this site was located on Grand Avenue as shown in Figure 6-2. Two accelerometers were mounted outdoors at 25 feet and 50 feet from the impact line. The 25 feet accelerometer was on the sidewalk, and the 50 feet accelerometer was in the Disney patio area. The four indoor accelerometers were located in the lobby (A3), box office (A4), BP Hall (A5) and the Main Concert Hall (A6). The accelerometer in the lobby area was approximately 75 feet from the impact line (The impact line refers to the line of impacts employed in the vibration propagation tests and the details of the test procedure are discussed in Appendix C).

The measured LSTM and coherence curves are shown in Figure 6-3. Between 20 and 63 Hz, the coherence inside BP Hall and the concert hall was in the acceptable range. Coherence was good up to 100 Hz for rest of the accelerometers. The LSTM curves in Figure 6-3 shows about 15 dB vibration attenuation between the 25 and 50 feet measurement positions. The LSTM in the lobby and box office were comparable to the levels at 50 feet. The LSTM inside the auditorium was approximately 5 to 10 decibels lower compared to the levels at the other three indoor measurement positions. Because of the substantial foundation of Disney Concert Hall and the number of underground structures in this area, it is unlikely that the two outdoor measurement positions are representative of propagation through undisturbed soil.

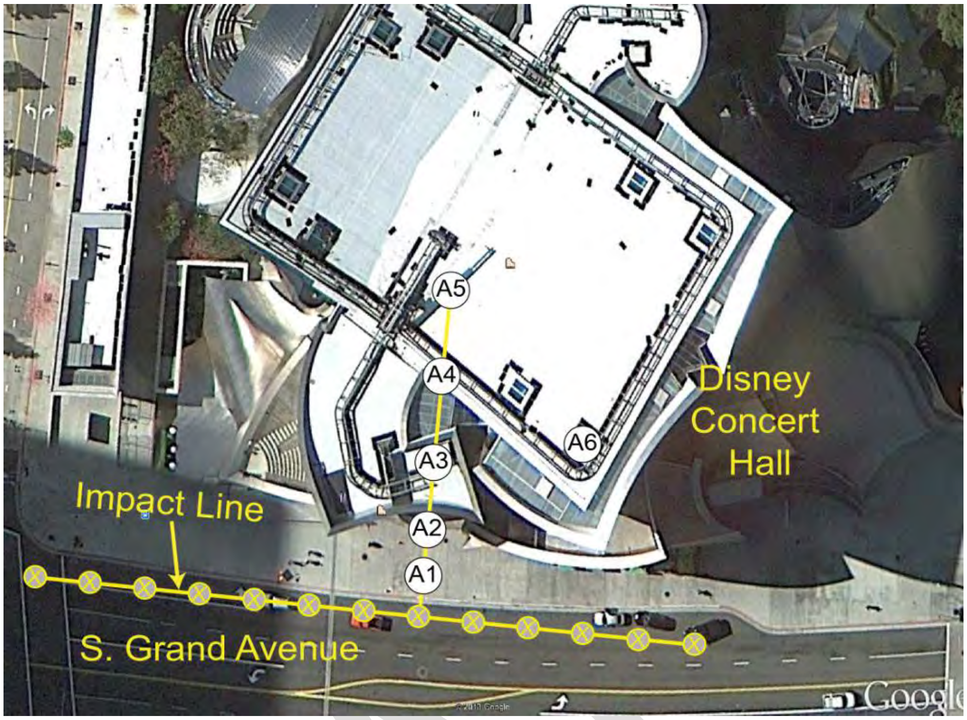
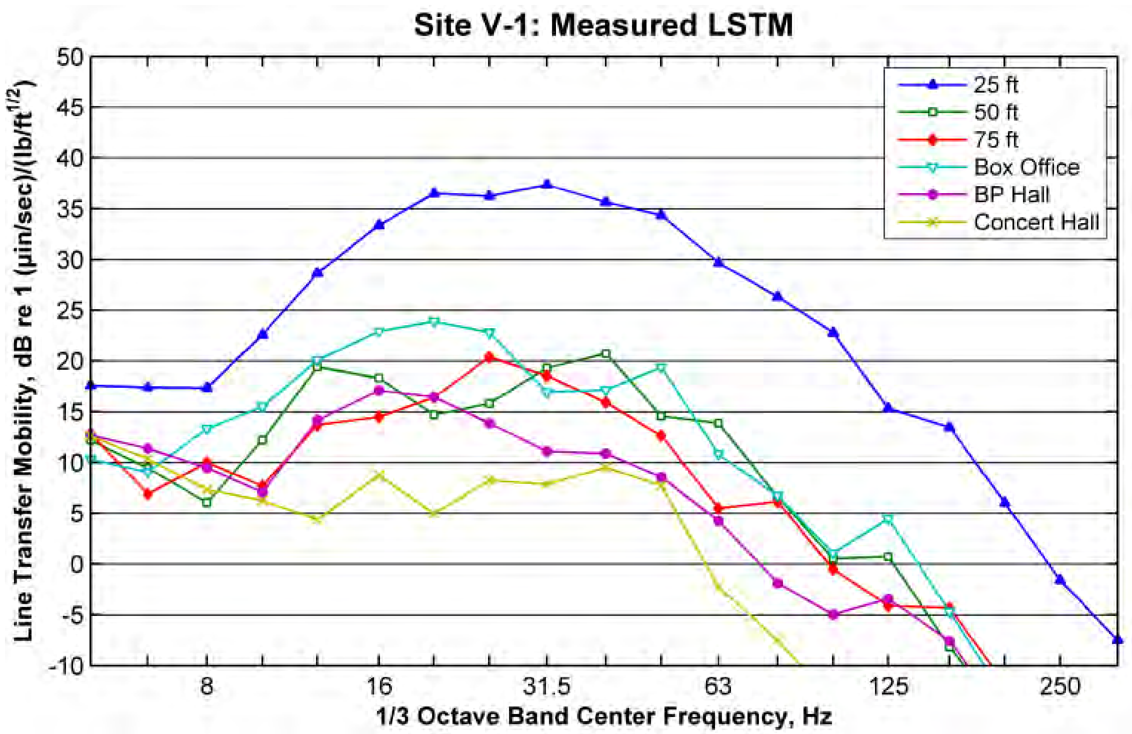


Figure 6-2: Vibration Propagation Test Site V-1, Disney Concert Hall



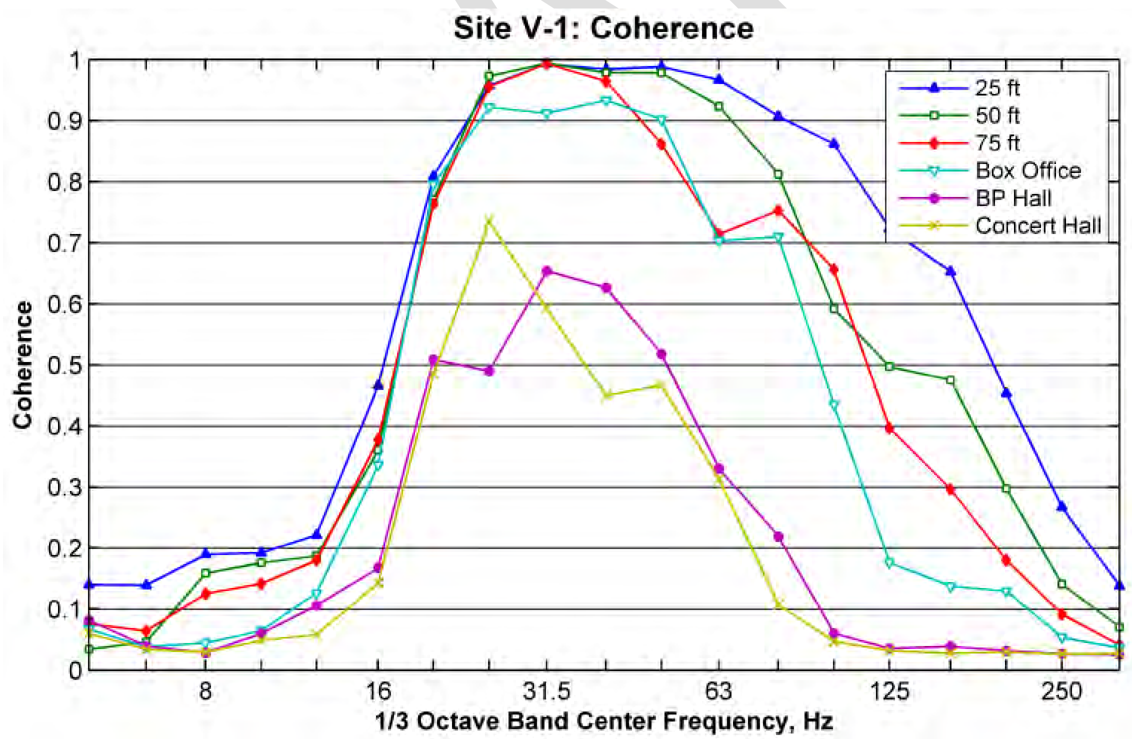


Figure 6-3: Site V-1, Measured LSTM and Coherence

Site V-2, Orpheum Theater: The Orpheum Theater is located on the east side of Broadway north of 9th Street. As shown in Figure 6-4, the impact line was along the east side of Broadway. One accelerometer was located outdoors on the sidewalk, 20 feet from the impact line and the remaining four accelerometers were located inside the theater; two in the lobby area and two under the seats in the theater. For all measurement positions, the coherence was acceptable between 20 and 200 Hz (see Figure 6-5). There is a strong peak at 20 Hz in the measurement results in the front lobby. It is not clear what the source is of this peak. One possibility is that it is caused by a resonance of the floor system. Another possibility is that the background vibration is relatively high at 20 Hz. This peak at 20 Hz would not be an issue because the front lobby is not a sensitive area and because the peak does not appear in the LSTM results at any of the three other indoor measurement positions.

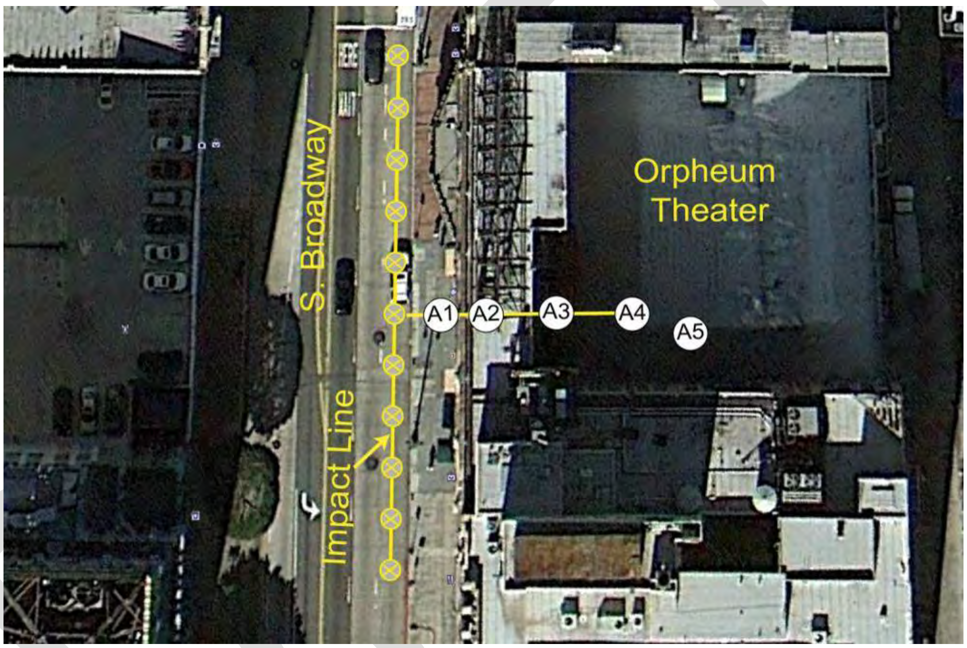


Figure 6-4: Vibration Propagation Test Site V-2, Orpheum Theater

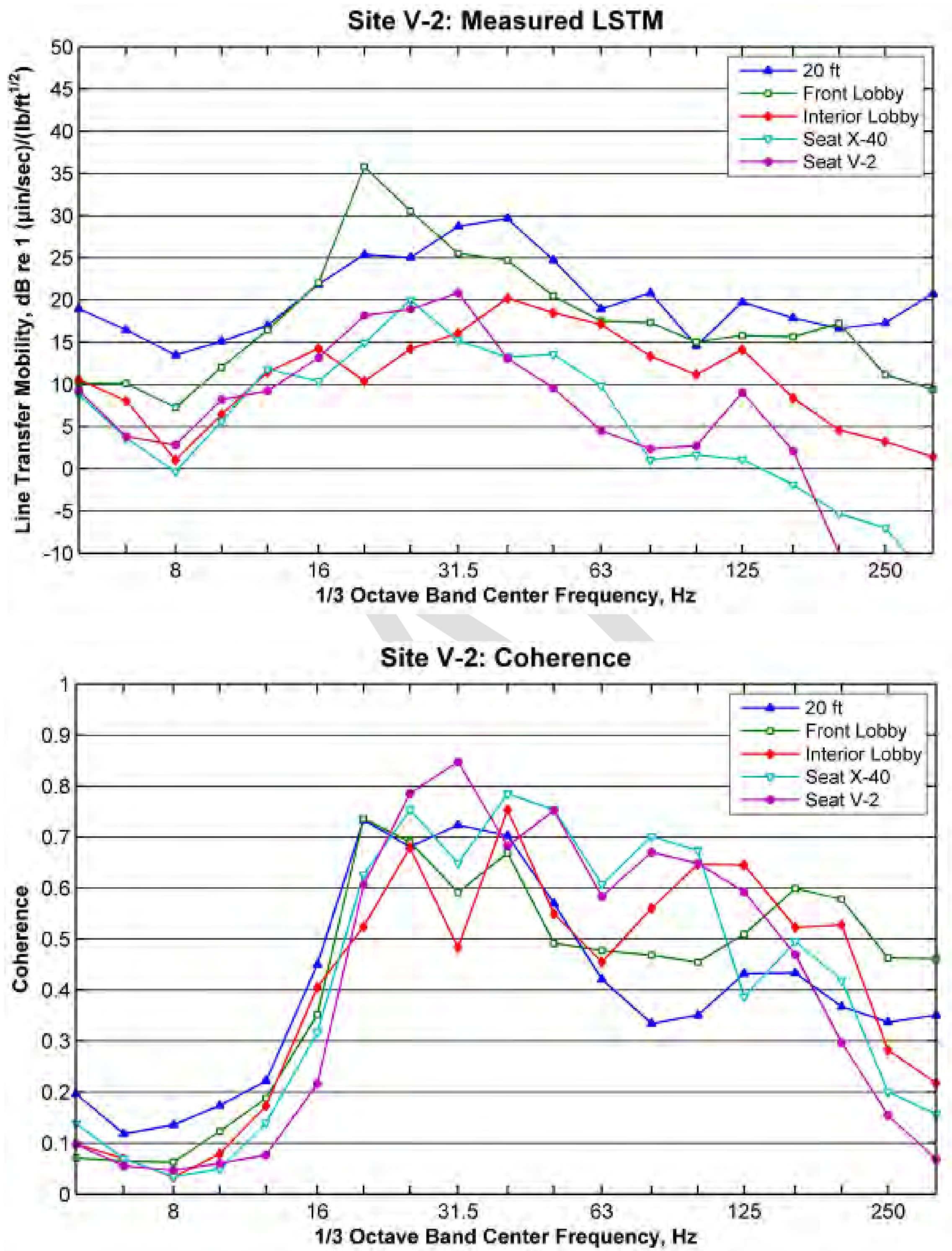


Figure 6-5: Site V-2, Measured LSTM and Coherence

Site V-3, Belasco Theater: This measurement was performed in the side lobby/loading area of the Belasco Theater. The front lobby of the Belasco Theater is on Hill Street and the performance space is 60 feet from the edge of W 11th Street. The impact line for this measurement was located on 11th Street as shown in Figure 6-6. The accelerometers were located:

- In the patio area north of 11th Street at 25, 38 and 50 feet from the impact line.
- Also in the patio area under the stairs. This accelerometer was approximately 75 feet from the impact line.
- Inside the performance space on the floor next to the stage and on the stage.

The measured LSTM and coherence curves are shown in Figure 6-7. Coherence was relatively low at the indoor measurement positions. The LSTM decreases only a few decibels from the 25 feet position to the 50 feet position and there is an approximately 15 dB decrease at key frequencies between the 50 feet and 75 feet positions. It is not clear whether there is a basement or other underground structure under the patio. Based on the measurements, it appears that the 50 feet position was over ground and the 75 feet position was over a basement or other structural part of the building. The large drop in LSTM from the 50 to 75 feet positions probably is an indication of the reduction in vibration as the vibration is transmitted from the street into the building structure. The LSTMs measured in the performance space both have peaks at 20 Hz that are likely to be the result of floor resonances.

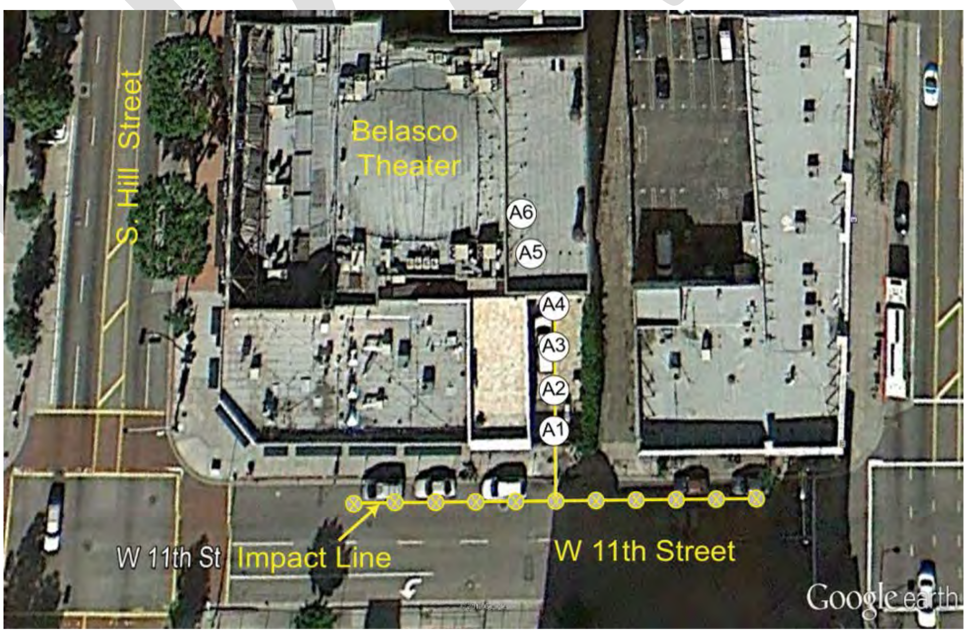
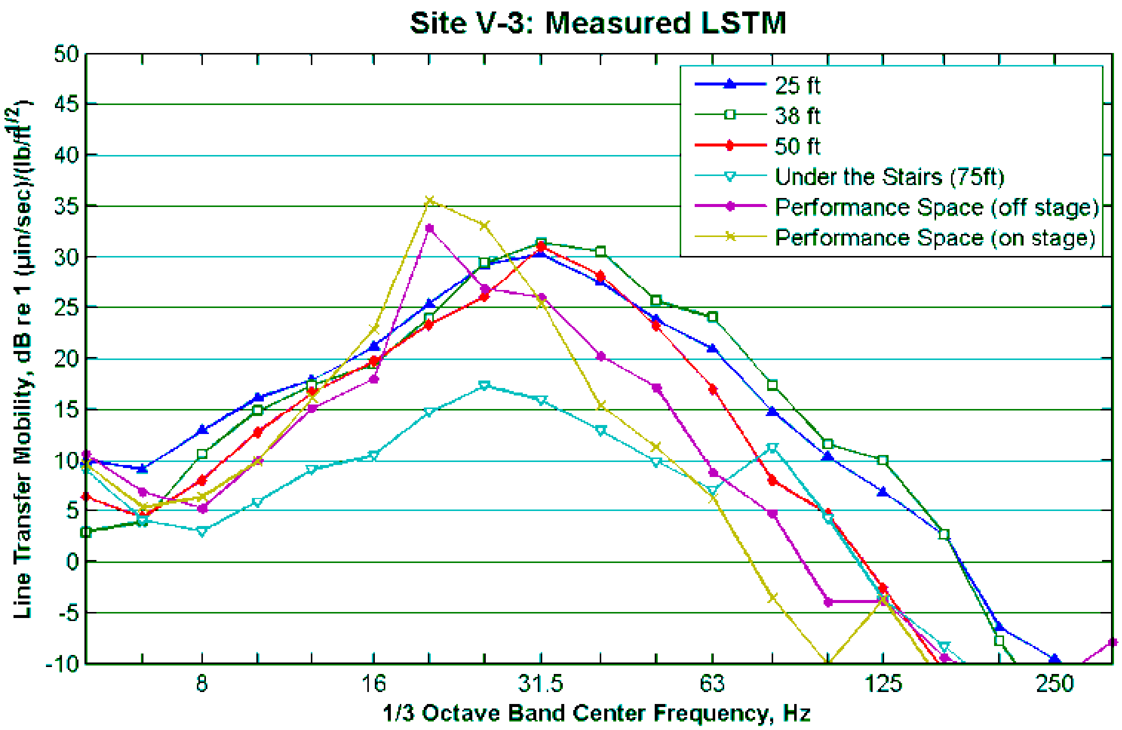


Figure 6-6: Vibration Propagation Test Site V-3, Belasco Theater



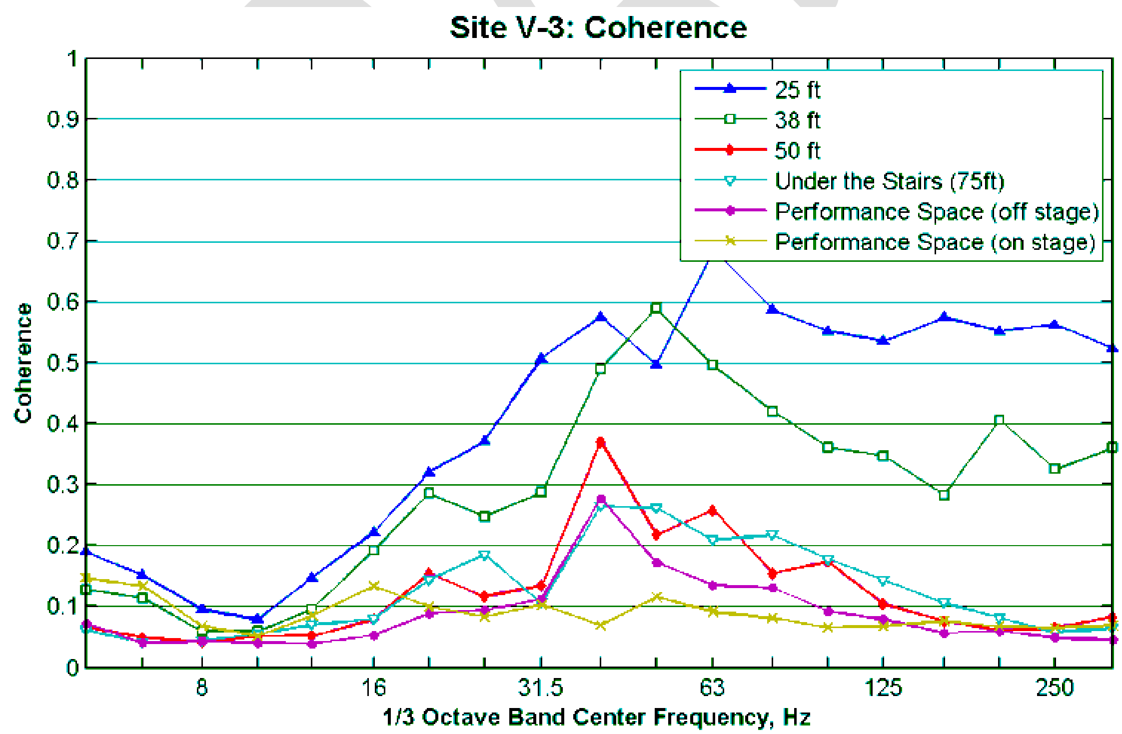


Figure 6-7: Site V-3, Measured LSTM and Coherence

Site V-4: This measurement was performed in a surface parking lot at the intersection of W 9th Street and S Hope Street. The impact line was located on the 9th Street sidewalk as shown in Figure 6-8. The accelerometers were mounted on the pavement of the parking lot at 25, 38, 50, 75, 100 and 150 feet from the impact line. The accelerometers at 25, 38 and 50 feet were located close to the footings of a billboard. The measured LSTM and coherence curves are shown in Figure 6-9. Coherence for all measurement positions was acceptable between 16 and 100 Hz. The LSTM at this site was 3 to 5 decibels higher compared to the outdoor LSTM measured at sites V-1 through V-3. This indicates that the building structures and other underground structures at the three theater measurement sites tended to reduce the levels of vibration at the ground surface and generally impede the transmission of vibration into the theater performance spaces. The measurements in the three theaters provide site-specific information on vibration propagation into the sensitive performance spaces. The measurement in the parking lot (Site V-4) was used with the measurement positions in front of and at the setback distances of the three theaters to develop a general model of how vibration propagates through soil in the Project corridor. The manner that the vibration propagation test results were used to develop predictions for all vibration sensitive land uses in the Project corridor is discussed in Appendix E.2.

Figure 6-8: Vibration Propagation Test Site V-4, Parking Lot

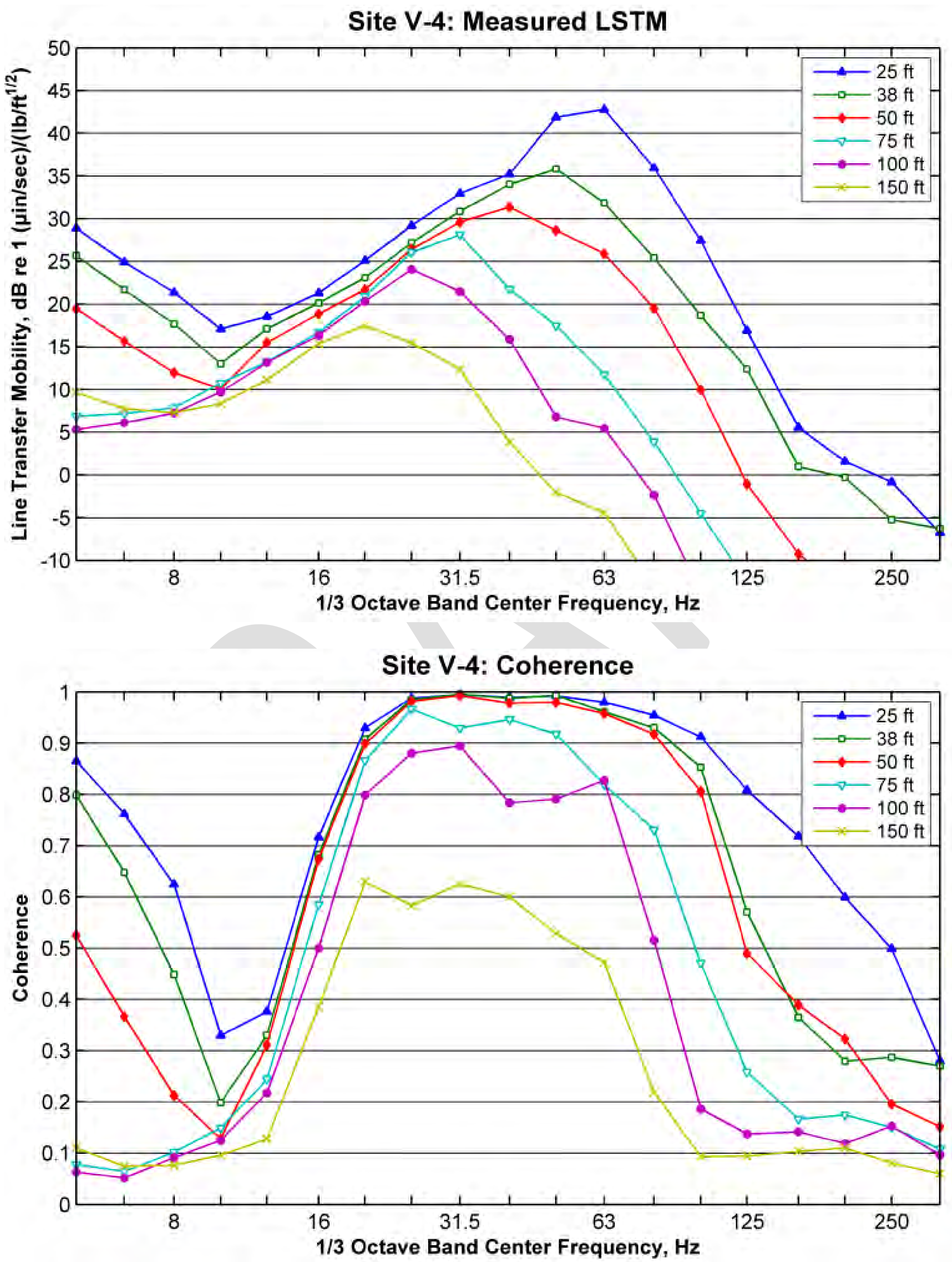


Figure 6-9: Site V-4, Measured LSTM and Coherence

7. POTENTIAL OPERATIONAL NOISE AND VIBRATION IMPACTS AND MITIGATION

7.1 Noise from Streetcar Operations

For a well-maintained streetcar system, the general trend is that at speeds below 20 mph the noise from propulsion motors, air conditioning, and other auxiliary equipment on the vehicles dominates. Above 25 mph, the rolling noise due to metal to metal contact at the wheel-rail interface dominates. This is referred to as wheel/rail noise. The level of wheel/rail noise is generally considered to vary with speed by 30*log(speed). Between 15 and 25 mph, a transition of the dominant noise source from the vehicle equipment to the wheel-rail interface occurs. Therefore, it is reasonable to expect the streetcar noise to have three regimes based on speed: a constant slope for speeds below 15 mph, a lower slope for speeds between 15 and 25 mph, and a higher slope above 25 mph.

Because the proposed vehicle and track design for the Los Angeles Streetcar system will be similar to the modern streetcar systems in Portland, OR and Seattle, WA, the noise predictions for the Los Angeles Streetcar system is based on measurements of the noise generated by the Portland and Seattle Streetcar systems (Ref. 7). Based on measurements in Portland and Seattle, reasonable speed adjustments for the maximum streetcar noise levels (Lmax) are:

- Speed-independent below 15 mph
- 12*log(speed) between 15 and 25 mph
- 30*log(speed) above 25 mph.

At a reference distance of 50 feet from the centerline of the track, the measured Lmax for streetcar noise was:

- 74.7 dBA at 25 mph

Based on the measured Lmax at 25 mph and the 30*log(speed) adjustment, the streetcar Lmax at 30 mph is estimated to be 77 dBA.

The reference levels used for this analysis are:

- Maximum sound level (Lmax) of a one-car streetcar operating at 25 mph on embedded track at a distance of 50 feet: 75 dBA
- Streetcar length: 66 feet
- Noise amplification from crossover trackwork (frogs): +6 dB

The FTA detail noise impact assessment methodlogy used to predict noise and vibration that would result from the Project are presented in Appendix E. The measured streetcar passby noise levels of the Portland and Seattle Streetcar systems were used with formulas included in the FTA Guidance Manual to predict the noise levels at each sensitive receiver.

7.2 Streetcar Operations

The currently proposed operating plan assumes that the streetcar system would operate 7 days a week with three to six streetcars running at any given time. The run time for a round trip would be approximately 35 to 40 minutes for all the Build Alternatives. As shown in Table 7-1, at morning and evening peak hours, six vehicles would be in operation, with headways of approximately 7 minutes at a given location. During non-peak mid-day hours, four vehicles would be in operation, with headways of approximately 10 minutes. During non-peak evening hours, three vehicles would be in operation, with headways of approximately 15 minutes. Hours of operation would be 6 a.m. to 12 midnight, Monday through Thursday; 6 a.m. to 2:30 a.m. on Friday; 9 a.m. to 2:30 a.m. on Saturday; and 9 a.m. to 12 midnight on Sunday and holidays. The maximum operating speed is assumed to be 30 mph on Figueroa Boulevard, and 25 mph or less everywhere else.

Table 7-1. Streetcar Headway Times

Number of Vehicles	Operation Hours	Headway (minutes)	Monday to Thursday	Friday	Saturday	Sunday/ Holidays
6	AM/PM Peak Hour	7	6 a.m.– 9 a.m. 3 p.m.–6 p.m.	6 a.m.–9 a.m. 3 p.m.–6 p.m.	--	--
4	Mid-Day Non-Peak	10	9 a.m.–3 p.m.	9 a.m.–3 p.m.	9 a.m.–5 p.m.	9 a.m.–5 p.m.
3	Evening Non-Peak	15	6 p.m.– 12 midnight	6 p.m.–2:30 a.m.	5 p.m.–2:30 a.m.	5 p.m.– 12 midnight

Source: HDR 2013.

7.3 Streetcar Related Noise

7.3.1 Operational Noise

This section discusses the noise impacts from streetcar operations at FTA Category 1, 2 and 3 noise sensitive receivers. The FTA Category 2 land uses along the proposed streetcar alignment are all multi-family residential units and hotels. The receivers were grouped together based on their location relative to the proposed alignment and the streetcar operation conditions as discussed in Section 1. All other FTA noise sensitive receivers were numbered individually. Consistent with the FTA Guidelines (Ref. 1), restaurants, bars and other commercial establishments were not evaluated for noise impacts from streetcar operations. Table 7-2, Table 7-3 and Table 7-4 show the predictions of noise from streetcar operations for Category 1, Category 2, and Category 3 land uses, respectively.

The columns in Table 7-2 through Table 7-4 include the following information:

- Receiver ID: This identifies the receiver number. The Category 1 receivers are identified as Txx (Table 7-2), the Category 2 receivers are identified as Rxx (Table 7-3), and the Category 3 receivers are identified as Ixx (Table 7-4). The receiver locations are shown on design drawings in Appendix F.
- Desc. or Receiver Name: The type of land use or name of the receiver.
- Adjacent Street: Identifies the street closest to the receiver for Category 2 land uses.
- Dist from the Track: Distance in feet from the streetcar track centerline to the closest location of the noise sensitive receiver. With the exception of Grand Avenue and 1st Street, there is only one track along the alignment. The only receivers that are exposed to streetcar noise from both inbound and outbound streetcars are Colburn School (T1), Disney Concert Hall (T2), Dorothy Chandler Pavilion (T8), Mosk Courthouse (I1) and the LA Law Library (I2).
- Speed: Maximum expected streetcar speed on the track closest to the receiver. The streetcar speeds would not exceed the posted traffic speed limits, which are 30 mph on Figueroa and 25 mph on all other streets along the alignment. The speed was assumed to be 20 mph near streetcar stops and 15 mph on the tail tracks on Grand Avenue.
- Existing Noise Site: The existing noise measurement site that is representative of the noise sensitive receiver.
- Existing: Existing noise level (Ldn) at each receiver was based on the measured Ldns for Category 2 land uses (Table 7-3). Existing Leq was used at Category 1 and 3 land uses (Table 7-2 and Table 7-4).
- Project: Predicted future noise levels from streetcar operations. This is Ldn for residential land uses and maximum hourly Leq for non-residential land uses. The noise predictions include audible warning device noise from the streetcars for all sensitive receivers that are located within 200 feet of a streetcar stop or an intersection where streetcars would stop.
- Impact Threshold: The FTA impact thresholds for moderate and severe impact based on the existing noise levels.
- Impact (Yes/No): Whether there are noise impacts at Category 1 and 3 land uses (Table 7-2 and Table 7-4).

- Number of Impacts: The number of dwelling units where the predicted levels of streetcar noise exceed the Moderate (Mod) and Severe impact thresholds (Table 7-3).

The noise impact assessment for FTA Category 1 land uses shown in Table 7-2 show that streetcar operations are predicted to exceed the FTA moderate noise impact threshold by 3 dB at Disney Hall and increase the existing noise levels by 1 dB. The predicted noise levels assume +6 dB for the wheel impacts at the turnout track frogs in front of Disney Hall and +10 dB for potential wheel squeal at the tight radii curves located at the intersection of Grand Avenue and 1st Street. It is noteworthy that the noise levels are predicted for the outdoor area in front of the Disney Concert Hall and the sensitive areas of the building are well insulated from exterior noise.

The noise impact assessment for FTA Category 2 land uses in Table 7-3 show two potential impacts:

- **Receiver R23**: There are 24 residential units from the second floor through the fifth floor facing the streetcar alignment along 11th Street where the predicted streetcar noise exceeds the FTA moderate impact threshold. The noise due to the streetcar Project is predicted to result in a 2 dB increase in cumulative noise exposure at this receiver. There are approximately 30 residential units above the fifth floor. Because these units are farther from the streetcar noise, the predicted noise levels are below the threshold for moderate noise impact.

- **Receiver R35 (Kawada Hotel):** At the Kawada Hotel the predicted streetcar noise levels exceed the moderate impact threshold at 15 rooms facing the streetcar alignment on Hill Street. The predicted noise exposure from streetcar operations is below the existing noise exposure from vehicular traffic and is predicted to increase the cumulative noise exposure by less than 1 decibel. A 1 decibel change in noise exposure is generally considered inconsequential.

As shown in Table 7-4, the noise impact assessment for FTA Category 3 land uses show moderate noise impacts at the Federal Courthouse on 1st Street. The predicted noise levels include +6 dB for the wheel impacts from the diamond crossing at the intersection of 1st and Hill Streets, and +10 dB for potential wheel squeal at the tight radii curve located at the same intersection.

Table 7-2. Summary of Noise Impact Assessment for Category 1 Land Uses

Receiver ID	Receiver Name	NT Dist.[a] (feet)	Speed (mph)	Existing Noise Site	Leq [c] (dBA)				Impact (Yes/No)	
					Existing[b]	Project [d]	Imp. Thresh.			
							Mod	Severe	Mod	Severe
T1	Colburn School	180	15	ST-1	**67**	56[d]	62	68	No	No
T2	Disney Main Concert Hall	75/150[e]	25	ST-1	**67**	65[f,g,h]	62	68	Yes	No
T3	Million Dollar Theater	35	25	ST-4	**71**	60	65	70	No	No
T4	Los Angeles Theater	35	25	ST-4	**71**	60	65	70	No	No
T5	Orpheum Theater	55	25	ST-5	**73**	58	65	72	No	No
T6	United Artist Theater	35	25	ST-5	**73**	60	65	72	No	No
T7	Belasco Theater	65	25	ST-6	**67**	57	62	68	No	No
T8	Dorothy Chandler Pavilion	75	25	ST-1	**69**	62[g]	63	68	No	No

Source: ATS Consulting, January 2016.

Notes:

(a) Distance to the near track is rounded off to the nearest 5 feet.

(b) Existing noise at receivers are adjusted for differences in distance to traffic.

(c) Leq values are rounded off to the nearest whole number unless shown otherwise.

(d) Project Leq is the additional noise that would be created by streetcar operations including streetcar AWD noise.

(e) Distance to near track and turnout frog / distance to radius curve track where wheel squeal could occur.

(f) Include both inbound and outbound streetcars.

(g) Includes +6dB adjustment for special trackwork at 75 feet.

(h) Includes +10 dB adjustment for squeal noise at 150 feet.

Table 7-3. Summary of Noise Impact Assessment for Category 2 Land Uses

Receiver ID	Desc. [a]	Dist. from Track (feet)	Location	Speed (mph)	Existing Noise Site	Ldn[b] (dBA) Existing	Ldn[b] (dBA) Project[c]	Imp. Thresh. Mod	Imp. Thresh. Severe	# of Impacts[d] Mod	# of Impacts[d] Severe
All Build Alternatives											
R1	MFR	35	Broadway/3rd St.	20	ST-3	76	62	65	74	--	--
R2	MFR	55	Broadway/3rd St.	20	ST-3	76	60	65	74	--	--
R3	MFR	35	Broadway/3rd St.	20	ST-3	76	62	65	74	--	--
R4	MFR	50	Broadway/4th St.	25	ST-4	74	57	65	73	--	--
R5	MFR	50	Broadway/5th St.	20	ST-4	74	60	65	73	--	--
R6	MFR	35	Broadway/5th St.	25	ST-4	74	62	65	73	--	--
R7	MFR	35	Broadway/5th St.	25	ST-4	74	59	65	73	--	--
R8	MFR	35	Broadway/5th St.	20	ST-4	74	62	65	73	--	--
R9	MFR	50	Broadway/6th St.	25	ST-4	74	61	65	73	--	--
R10	MFR	50	Broadway/6th St.	20	ST-4	74	60	65	73	--	--
R11	MFR	50	Broadway/6th St.	20	ST-4	74	60	65	73	--	--
R12	MFR	50	Broadway/7th St.	20	ST-4	74	60	65	73	--	--
R13	MFR	35	Broadway/7th St.	25	LT-6	76	60	65	74	--	--
R14	Hotel	50	Broadway/7th St.	25	LT-6	76	57	65	74	--	--
R15	MFR	50	Broadway/8th St.	20	LT-6	76	60	65	74	--	--
R16	MFR	35	Broadway/9th St.	25	LT-6	76	62	65	74	--	--
R17	MFR	50	Broadway/8th St.	20	LT-6	76	58	65	74	--	--
R18	MFR	50	Broadway/9th St.	20	LT-6	76	60	65	74	--	--
R19	MFR	35	Broadway/9th St.	25	LT-6	76	60	65	74	--	--
R19A	MFR	35	Broadway/9th St.	25	LT-6	76	60	65	74	--	--
R20	MFR	50	Broadway/9th St.	25	LT-6	76	58	65	74	--	--
R21	MFR	35	Broadway/11th St.	25	LT-6	76	60	65	74	--	--
R22	MFR	25	11th Street/Grand Ave.	25	LT-2	66	59	61	67	--	--
R23	MFR	25	11th Street/Hope St.	20	LT-2	66	63	61	67	24	--
R24	MFR	30	11th Street/Flower St.	25	LT-2	66	60	61	67	--	--
R25	Hotel	45	Figueroa/11th St.	35	LT-3	73	62	65	72	--	--
R26	Hotel	45	Figueroa/Olympic St.	35	LT-3	73	63	65	72	--	--
R27	MFR	40	Figueroa/Olympic St.	25	LT-3	73	62	65	72	--	--
R28	MFR	40	Figueroa/9th St.	35	LT-3	73	62	65	72	--	--
R32	MFR	45	Hill Street/5th St.	25	LT-1	68	59	63	68	--	--
R33	MFR	45	Hill Street/4th St.	25	LT-1	68	60	63	68	--	--
R34	MFR	80	Hill Street/3rd St.	25	LT-1	68	59	63	68	--	--
R35	Hotel	25	Hill Street/2nd St.	25	LT-1	68	64	63	68	15	--
7th Street Alternatives 2 and 3											
R29	Hotel	125	Figueroa/7th St.	20	LT-4	72	62[e]	65	71	--	--
R30	Hotel	35	7th Street/Flower St.	25	LT-4	72	62	65	71	--	--
R31	MFR	35	7th Street/Olive St.	25	LT-4	72	62	65	71	--	--
9th Street Alternatives 4 and 5											
R36	MFR	40	Hope Street/Flower St.	25	LT-5	72	62	65	71	--	--
R37	MFR	70	9th Street/Flower St.	25	LT-5	72	59	65	71	--	--

Table 7-3. Summary of Noise Impact Assessment for Category 2 Land Uses											
Receiver ID	Desc. [a]	Dist. from Track (feet)	Location	Speed (mph)	Existing Noise Site	Ldn[b] (dBA)				# of Impacts[d]	
						Existing	Project[c]	Imp. Thresh.			
								Mod	Severe	Mod	Severe
R38	MFR	60	9th Street/Grand Ave.	25	LT-5	72	60	65	71	--	--
R39	MFR	25	Hill Street/8th St.	25	LT-5	72	64	65	71	--	--

Notes:

(a) Desc. = Type of land use, MFR = multi-family residence.

(b) Ldn values are rounded off to the nearest whole number unless shown otherwise.

(c) Project Ldn is the additional noise that would be created by streetcar operations including streetcar AWD noise.

(d) Number of impacts. This is the estimated number of residential units from second floor through fifth floor.

(e) Includes +10 dB for potential wheel squeal at tight radius curves.

Table 7-4. Summary of Noise Impact Assessment for Category 3 Land Uses										
Receiver ID	Receiver Name [a]	NT Dist.[b] (feet)	Speed (mph)	Existing Noise Site	Leq[b] (dBA)				Impact (Yes/No)	
					Existing	Project[c]	Imp. Thresh.			
							Mod	Severe	Mod	Severe
All Build Alternatives										
I1	Mosk Courthouse	50	25	ST-2	71	69[d,e]	70	75	--	--
I2	LA Law Library	125	20	ST-2	71	66[d-f]	70	75	--	--
I2A	Federal Courthouse	30	20	ST-2	71	71[d-f]	70	75	Yes	--
I3	Guadalupe Wedding Chapel	35	25	ST-3	74	58	70	77	--	--
I4	Optometrist	35	20	ST-4	71	60	70	75	--	--
I5	Clinic	50	20	ST-4	71	58	70	75	--	--
I6	Universal Church (Formerly The State Theater)	35	25	ST-4	71	58	70	75	--	--
I7	Optometrist	50	20	ST-4	71	58	70	75	--	--
I8	SIA Tech School	30	25	ST-11	69	61	68	74	--	--
I9	YWCA Job Corps & SIA Tech School	30	20	ST-11	69	60	68	74	--	--
I10	Grammy Museum	90	25	ST-7	68	61	68	73	--	--
I11	Pershing Square	50	25	ST-9	69	58	68	74	--	--
I12	Angels Knoll Park	70	25	ST-9	69	57	68	74	--	--
9th Street Alternatives 4 and 5										
I13	Grand Hope Park	60	25	LT-5	68	57	68	73	--	--
I14	FIDM	60	25	LT-5	68	57	68	73	--	--

Source: ATS Consulting, January 2016.

Notes:

(a) Distance to the near track (NT) is rounded off to the nearest 5 feet.

(b) Leq values are rounded off to the nearest whole number unless shown otherwise.

(c) Project Leq is the additional noise that would be created by the streetcar operations. It includes streetcar AWD noise at stoplights and streetcar stops.

(d) Includes both inbound and outbound tracks.

(e) Includes +10 dB for squeal noise at tight radius curves.

(f) Includes +6 dB for impact noise from the frogs at special trackwork.

7.3.2 Ancillary Equipment

Traction power substation (TPSS) units are the only ancillary equipment associated with the proposed Project that has the potential to cause noise impacts. Five TPSS units are planned for the proposed streetcar alignment. The recommended locations of the TPSS units are:

- A1: North end of Lower Grand Avenue (approximately under 2nd Street and Upper Grand Avenue);
- A2: Southeast corner of Broadway and 2nd;
- A3: Broadway between 8th and 9th Streets (Parking lot behind Two Boots Pizza);
- A4: Alley between 8th and 9th Streets connecting Figueroa and Flower Streets;
- A5: Hill Street between 4th and 5th streets (Parking lot adjacent to Metro 417 Multi-family residential building);

There are also five alternative sites for locating the TPSS;

- B1: Northeast corner of Grand and 2nd Street;
- B2: Southwest corner of Broadway and 2nd Street;
- B3: Southwest corner of Broadway and 9th Street;
- B4: Southeast corner of Figueroa and 9th Street; and
- B5: Southeast corner of Hill and 6th Street.

It is common to include noise limits in the specifications for TPSS units to minimize the potential for noise impacts from TPSS noise. The specifications generally include maximum noise limits for potential noise generators, such as the transformer hum and any cooling systems. The cooling fans are the major noise source on many modern TPSS units and the transformer hum is usually inaudible except very close to the TPSS unit.

The first step in controlling TPSS noise is to include a noise limit for TPSS units that should be met by the contractor. The recommended limit is that the maximum noise level not exceed 50 dBA at a distance of 50 feet from any part of a TPSS unit.

Under the City of Los Angeles CEQA Thresholds' Guide noise levels of a proposed project would have a significant impact if the project causes the existing Ldn ambient to increase by 3 decibels to or within the "normally unacceptable" or "clearly unacceptable" CEQA noise exposure categories (see Table 4-3. Table

7-5 shows the predicted levels of TPSS noise at the residence nearest to each of the sites being considered along with the measured nighttime Leq for the site. A noise impact is indicated when the predicted TPSS Ldn noise level exceeds the existing level Ldn by 3 decibels. This approach for assessing TPSS noise impact is more stringent than the FTA impact criteria and ensures no impacts are overlooked. As seen in Table 7-5, impacts from the TPSS units are not predicted at any of the potential sites.

The noise of the TPSS operations would also comply with the *Los Angeles Municipal Code* Sections 112.04 and 112.05, which restrict the noise from powered equipment located within any residential zone or within 500 feet of a residence to exceed the ambient noise by more than 5 decibels.

If the locations of the TPSS units are revised in final design such that it would result in impacts, mitigation should be considered. The mitigation can be as simple as arranging for the ventilation fans to be on the side of the TPSS building that is farthest from noise sensitive receptors. Other mitigation options include building a sound wall or partial enclosure around the TPSS.

Table 7-5. Predicted TPSS Noise

TPSS Unit Site	Location	Distance to Closest Receiver, feet	Receiver Category	Existing Noise Level, dBA		Predicted TPSS Noise[b], dBA		Impacts (Yes/No)
				Nighttime Leq[a]	Ldn	Leq	Ldn	
A1	Lower Grand	120	1	63	66	42	48	No
A2	Broadway and 2nd	75	3	68	76	46	52	No
A3	Broadway and 8th	25	2	68	76	56	62	No
A4	Figueroa and 8th	100	2	66	73	44	50	No
A5	Hill and 5th	100	2	59	66	44	50	No
B1	Grand and 2nd	125	1	63	66	42	48	No
B2	Broadway and 2nd	40	3	68	76	52	58	No
B3	Broadway and 9th	40	2	68	76	52	58	No
B4	Figueroa and 9th	50	2	66	73	50	56	No
B5	Hill and 6th	40	2	59	66	52	58	No

Source: ATS Consulting, January 2016.

Notes:

(a) Average noise levels (Leq) measured between 10 PM and 7 AM. Daytime Leq used for Category 1 receivers

(b) The predicted TPSS noise levels are based on a maximum noise level of 50 dBA at a distance of 50 feet from any side of the TPSS units.

7.3.3 Maintenance and Storage Facility

There are four potential locations for the streetcar Maintenance and Storage Facility (MSF). Noise sources associated with MSFs include carwashes, blowdown facilities, repair shops, vehicles movements across track switches, potential squeal noise from tight radius curves within the facility and vehicular traffic into and out of the facility. The following are the four locations identified as potential sites for the streetcar MSFs:

- M1, Northside of Broadway between 2nd and 3rd Street;
- M2, Northeast corner of Hill Street and 5th Street;
- M3, Southwest corner of 11th Street and Olive Street; and
- M4, Southeast corner of 11^{th} Street and Olive Street.

As discussed in Section 2.3.3, the MSF would consist of an enclosed building for the maintenance shops and open area for storage. An employee parking lot may be provided. There is potential for the MSF to be housed in the ground floor of a multi-story development. When that happens all noisy activities associated with the MSF would be in enclosed spaces. However, the potential multi-story development is not part of this Project and the building may not be in place during the Opening Year. Therefore, for noise evaluation purposes the MSF is evaluated as a standard facility.

The MSF would have a single ingress/egress point for the streetcars at each of the potential sites. The streetcars would access the facility via a short segment of track connected to the mainline by one or two turnout tracks. The LA Streetcar would consist of a fleet of eight electrically powered streetcar vehicles. Each of the four proposed sites for the MSF would have the capacity to store up to twelve vehicles.

The key noise sources from the MSF activities for the four potential sites are shown in Figure 7-1 through Figure 7-4. Each of the MSF sites have turnout tracks and tight curves that have potential for wheel squeal noise. The turnout track and the tight curves are the potential noise sources from train movement within the storage facility and from ingress and egress of the streetcar vehicles at the lead tracks to the mainline. The maintenance shop noise, the movement of streetcars on the main line adjacent to the facility, the car wash facility and the movement of vehicular traffic in and out of the facility are the other noise sources. The noise sources and the assumptions of the activities at the potential MSF sites are described below:

- Traffic on Lead Tracks: The number of streetcars entering and exiting the storage facility would peak during the hours starting at 6 AM, 8 AM, 3 PM and 5 PM. These are hours when peak operations begin and end. For the 4 hours of peak activity between the main line and the MSF, the number of streetcars that would enter and exit the facility was assumed to be six. In addition, there is potential for the streetcars to enter and exit the facility when there are shift changes and/or streetcars are pulled out or fed into the mainline through the lead tracks. Therefore, we assumed the number of streetcars that would enter and exit the facility to be 2 during each hour when there is no peak activity.
- Turnout tracks: The turnout would be sources of impact noise from the wheel banging on the turnout frogs. The turnouts would experience difference amounts of traffic depending on their

location. We assumed 6 streetcars would pass through the busiest turnout track during the peak hour.

- Maintenance Shops: Noise from the maintenance facility could include hammering for minor body work or repair of other components; noise from machines such as air compressor and metal working equipment; and noise from the HVAC system. Forklift backup alarms and general repair tools could also be intermittent noise sources. The maintenance shops are assumed to be a closed facility that would have its doors open most of the time. The noise contribution from the maintenance shop activities are assumed to be less than the yard activities.

- Car Wash: We assumed that the car wash would include one vehicle wash bay and servicing area for daily cleaning and would be a non-mechanical hand wash system at all four MSFs.

- Vehicular Traffic Into/Out of Facility: A parking facility was assumed for sites M1 and M2. For site M3, the existing parking garage on Olive Street was assumed to be used for parking. We assumed 5 peak hours and 4 off-peak hours for vehicle traffic into and outside the facility. The peak hour traffic assumes 10 motor vehicles during the peak and off-peak hours. In addition, 3 trucks were assumed during the peak hours. Based on the FHWA's algorithm used in the Traffic Noise Model, the reference sound level at 50 feet for autos, SUVs and heavy trucks moving at 30 mph ranges from 65 to 77 dBA. We assumed a reference sound level (Leq) of 77 dBA at 50 feet for vehicles moving at 30 mph. This is a conservative reference level because at low speeds the vehicle noise is dominated by the engine noise, and not the tire-pavement noise.

Table 7-6 shows the noise analysis for MSF at potential site M1. Three residential land use clusters and one institutional sensitive receiver would be exposed to noise from activities related to M1. The locations of the land uses are shown in Figure 7-1. The predicted noise from activities at M1 would not exceed the FTA moderate impact threshold at receiver I3, the Guadalupe Wedding Chapel, during the peak hours of operation.

Table 7-7 shows the noise analysis for MSF at potential site M2. Two residential land use clusters would be exposed to noise from activities related to M2. The locations of the land uses are shown in Figure 7-2. The predicted noise from activities at M2 would exceed the FTA moderate impact threshold at receiver R33, multi-family residences.

Table 7-8 shows the noise analysis for MSF at potential site M3. Three residential land use clusters would be exposed to noise from activities related to M3. Note that residential receivers R22 would shield the potential wheel squeal from the tracks entering the MSF on 11th Street to receivers R23 and R23A. The locations of the land uses are shown in Figure 7-3. The predicted noise from activities at M3 would exceed the FTA moderate impact threshold at receiver R22, Grand Lofts multi-family residences.

Table 7-9 shows the noise analysis for MSF at potential site M4. Two institutional sensitive receivers would be exposed to noise from activities related to M4, Siatech High School at receiver I8 and the YWCA at receiver I9. The locations of the land uses are shown in Figure 7-4. The predicted noise from activities at M4 would not exceed the FTA moderate impact threshold at receivers I8 and I9.

Table 7-6. Unmitigated Noise From MSF at 3rd Street and Broadway (M1)					
Activity	**Potential Outdoor Noise Source[a]**	**Estimated Ldn, dBA**			**Estimated Leq, dBA**
		R1	**R34**	**R35**	**I3**
1.	Train Movements on Shop and Yard Tracks				
	1a. Main Line	Shielded[b]	49	58	53
	1b. Turnout frogs	Shielded[b]	42	50	59
	1c. Wheel squeal	Shielded[b]	48	51	65
	Total	---	**52**	**59**	**66**
3.	Vehicular Traffic Into/Out of Parking	**24**	**25**	**25**	**57**
	Total MSF Noise	**24**	**52**	**59**	**68**
Existing Noise Level (Ldn for R1, R34 and R35; Leq for I3)		**76**	**68**	**60**	**60**
FTA Threshold for Moderate Noise Impact		**65**	**63**	**63**	**63**
Moderate Impact (Yes/No)		**No**	**No**	**No**	**Yes**
FTA Threshold for Severe Noise Impact		**74**	**68**	**68**	**77**
Severe Impact (Yes/No)		**No**	**No**	**No**	**No**

Source: ATS Consulting, January 2016.

Notes:

(a) A hand car wash is proposed at this MSF which is not a potential outdoor noise source.

(b) Receiver R1 is shielded by Receiver I3.

Table 7-7. Unmitigated Noise From MSF at 5th Street and Hill Street (M2)			
Activity	**Potential Outdoor Noise Source [a]**	**Estimated Ldn, dBA**	
		R33	**R32**
1.	Train Movements on Shop and Yard Tracks		
	1a. Main Line	56	47
	1b. Turnout frogs	57	46
	1c. Wheel squeal	61	47
	Total	**63**	**51**
2.	Vehicular Traffic Into/Out of Parking	**27**	**27**
	Total MSF Noise	**63**	**51**
Existing Noise Level (Ldn)		**68**	**68**
FTA Threshold for Moderate Noise Impact		**63**	**63**
Moderate Impact (Yes/No)		**Yes**	**No**
FTA Threshold for Severe Noise Impact		**68**	**68**
Severe Impact (Yes/No)		**No**	**No**

Source: ATS Consulting, January 2016.

Notes:

(a) A hand car wash is proposed at this MSF which is not a potential outdoor noise source.

Table 7-8. Unmitigated Noise From MSF at 11th Street and Olive Street West (M3)

Activity	Potential Outdoor Noise Source [a]	Estimated Ldn, dBA		
		R22	R23	R23A
1.	Train Movements on Yard Tracks			
	1a. Main Line	53	43	43
	1b. Turnout frogs	50	42	42
	1c. Wheel squeal	66	Shielded[b]	Shielded[b]
	Total	**66**	**45**	**45**
2.	Vehicular Traffic Into/Out of Parking	**27**	**24**	**24**
Total MSF Noise		**66**	**45**	**45**
Existing Noise Level (Ldn)		**66**	**66**	**66**
FTA Threshold for Moderate Noise Impact		**61**	**61**	**61**
Moderate Impact (Yes/No)		**Yes**	**No**	**No**
FTA Threshold for Severe Noise Impact		**67**	**67**	**67**
Severe Impact (Yes/No)		**No**	**No**	**No**

Source: ATS Consulting, January 2016.

Notes:

(a) A hand car wash is proposed at this MSF which is not a potential outdoor noise source.

(b) Receivers R23 and R23A is shielded by Receiver R22.

Table 7-9. Noise From Potential MSF at 11th Street and Olive Street East (M4)

Activity	Potential Outdoor Noise Source	Estimated Leq, dBA	
		I8	I9
1.	Train Movements on Yard Tracks		
	1b. Turnout frogs	49	49
	1c. Wheel squeal	44	44
	1c. Closest source of wheel squeal	57	56
	Total	**58**	**57**
2.	Vehicular Traffic Into/Out of Parking	**57**	**56**
Total MSF Noise		**61**	**60**
Existing Noise Level		**67**	**67**
FTA Threshold for Moderate Noise Impact		**67**	**67**
Moderate Impact (Yes/No)		**No**	**No**
FTA Threshold for Severe Noise Impact		**73**	**73**
Severe Impact (Yes/No)		**No**	**No**

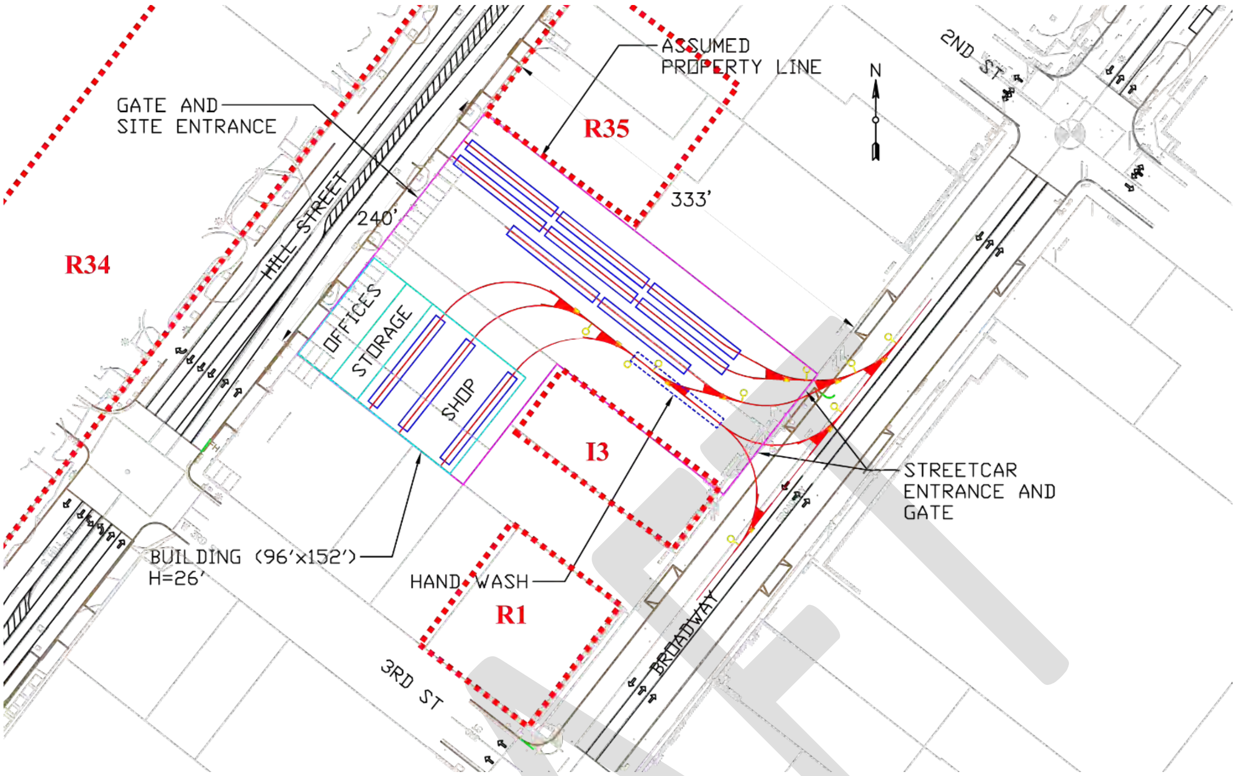


Figure 7-1: Noise Sources at Potential Site of Maintenance and Storage Facility M1

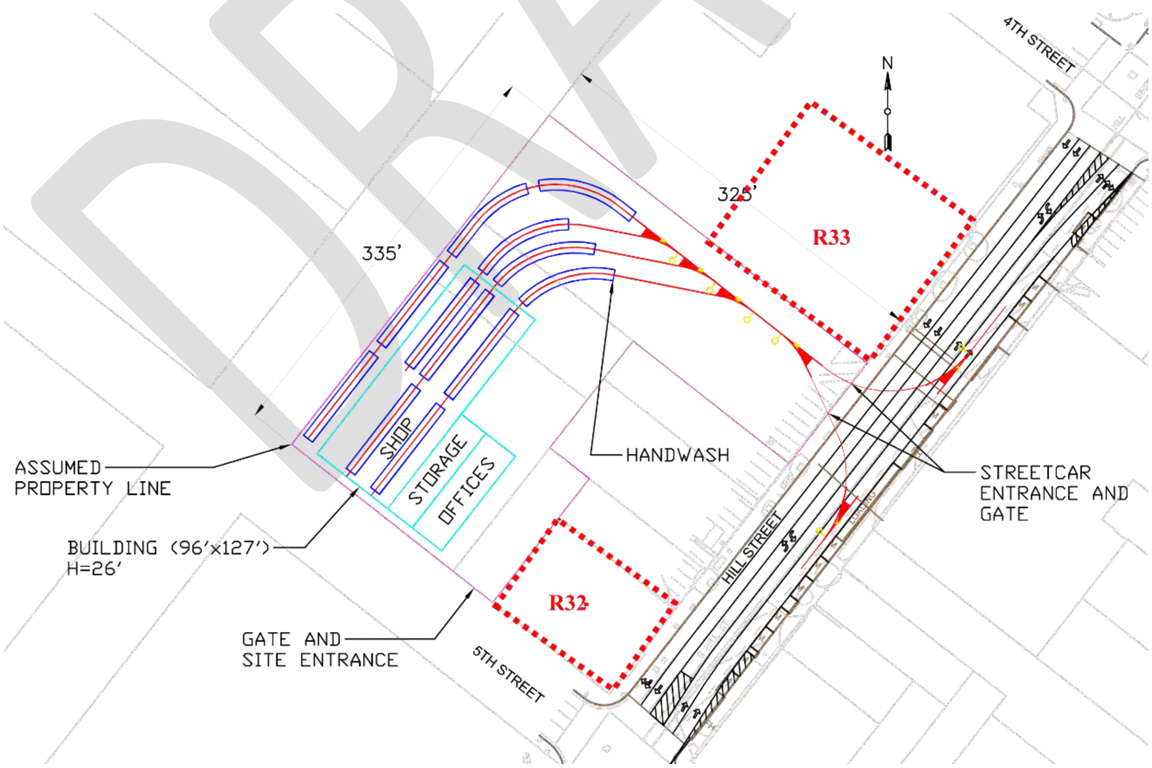


Figure 7-2: Noise Sources at Potential Site of Maintenance and Storage Facility M2

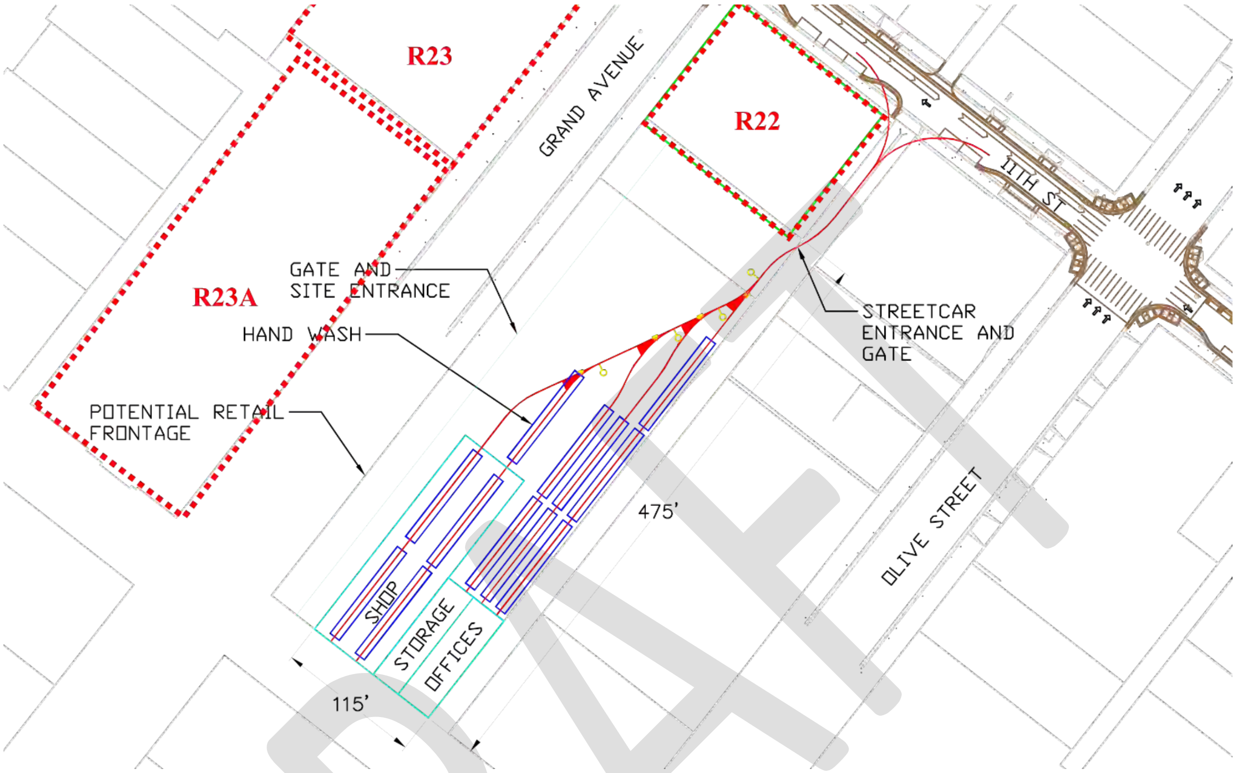


Figure 7-3: Noise Sources at Potential Site of Maintenance and Storage Facility M3

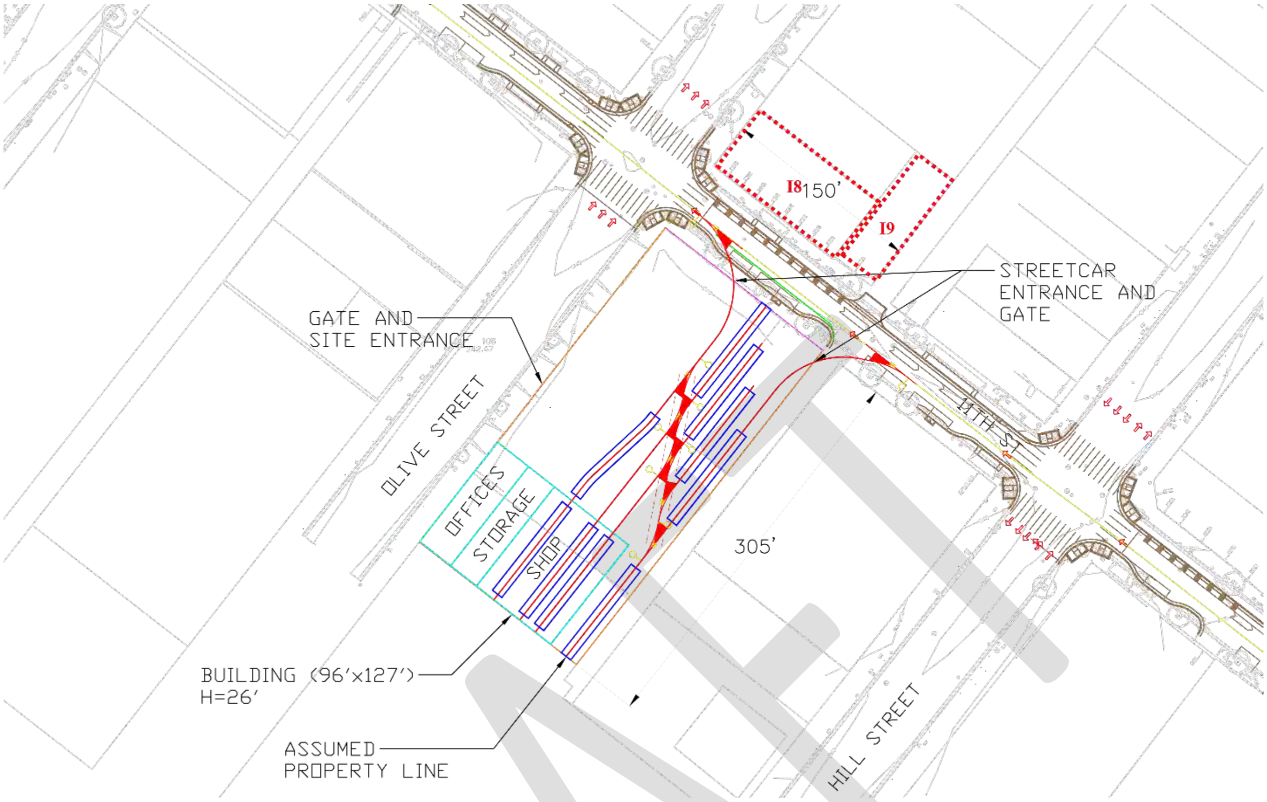


Figure 7-4: Noise Sources at Potential Site of Maintenance and Storage Facility M4

7.4 Traffic Noise

The traffic circulation and the peak hour traffic volumes in the study area would change in the future with and without the Project. An analysis was prepared that compares the existing traffic volumes (2014/2015) with the future 2020 Opening Year and 2040 Horizon Year volumes at each of the noise sensitive receivers assessed for the streetcar operations. Each of the future year scenarios assess the change in traffic volumes without the Project and with the four Build Alternatives. The methodology used to calculate the change in traffic noise is ten times the logarithmic ratio of the future traffic divided by the existing traffic volume for both the AM and PM peak hours. The results of the analysis are presented in Table 7-10 through Table 7-15. The predicted change in peak hour traffic noise levels in 2040 compared to the existing levels in 2014/2015 for the Category 1 land uses in the AM peak hour are in the range of an increase of 0.7 dBA to 2.0 dBA. In the PM peak hour the increase is in the range of 0.7 dBA to an increase of 1.4 dBA. For Category 2 land uses in the AM peak hour is an increase in the range of 0.7 dBA to 1.9 dBA over the future 2040 Project traffic. In the PM peak hour the increase is 0.7 dBA to an increase of 1.8 dBA. The change in peak hour traffic noise levels in 2040 compared to the existing levels in 2014/2015 for the Category 3 land uses in both the AM and PM peak hour is an increase of 0.7 dBA to 1.4 dBA. The change in traffic noise is not considered a significant impact under CEQA because neither the future 2020 Year traffic nor the 2040 Year traffic results in a 3 dBA or more increase over the existing conditions. It is not a significant impact under NEPA because neither the future 2020 Year traffic nor the 2040 Year traffic results in a 3 dBA or more increase over the future No Build conditions.

Table 7-10. Summary of AM Peak Hour Traffic Noise for Category 1 Land Uses – Leq(h) (dBA)

Receiver ID	Receiver Name	Existing Year (2014/15)					Opening Year (2020)					Horizon Year (2040)				
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
T1	Colburn School	66.5	66.5	66.5	66.5	66.5	66.8	66.8	66.8	66.8	66.8	67.2	67.2	67.2	67.2	67.2
T2	Disney Main Concert Hall	66.5	66.6	66.5	66.6	66.5	66.9	67.0	66.9	67.0	66.9	67.3	67.4	67.3	67.4	67.3
T3	Million Dollar Theater	71.0	71.2	71.2	71.2	71.2	71.1	71.3	71.3	71.3	71.3	71.5	71.7	71.7	71.7	71.7
T4	Los Angeles Theater	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
T5	Orpheum Theater	73.1	73.3	73.3	73.3	73.3	73.8	74.0	74.0	74.0	74.0	74.2	74.3	74.3	74.3	74.3
T6	United Artist Theater	73.1	73.3	73.3	73.3	73.3	73.8	74.0	74.0	74.0	74.0	74.2	74.4	74.4	74.4	74.4
T7	Belasco Theater	67.3	67.9	67.9	67.9	67.9	68.5	69.0	69.0	69.0	69.0	68.9	69.3	69.3	69.3	69.3
T8	Dorothy Chandler Pavilion	66.5	66.6	66.5	66.6	66.5	66.9	67.0	66.9	67.0	66.9	67.3	67.4	67.3	67.4	67.3

Source: ATS Consulting, July 2016.

Table 7-11. Summary of PM Peak Hour Traffic Noise for Category 1 Land Uses – Leq(h) (dBA)																
T1	Colburn School	66.5	66.5	66.5	66.5	66.5	67.1	67.1	67.1	67.1	67.1	67.5	67.5	67.5	67.5	67.5
T2	Disney Main Concert Hall	66.5	66.6	66.5	66.6	66.5	67.2	67.3	67.2	67.3	67.2	67.6	67.7	67.6	67.7	67.6
T3	Million Dollar Theater	71.0	71.2	71.2	71.2	71.2	71.1	71.3	71.3	71.3	71.3	71.6	71.7	71.7	71.7	71.7
T4	Los Angeles Theater	71.0	71.1	71.1	71.1	71.1	71.4	71.6	71.6	71.6	71.6	71.8	72.0	72.0	72.0	72.0
T5	Orpheum Theater	73.1	73.2	73.2	73.2	73.2	73.7	73.8	73.8	73.8	73.8	74.1	74.2	74.2	74.2	74.2
T6	United Artist Theater	73.1	73.2	73.2	73.2	73.2	73.9	74.0	74.0	74.0	74.0	74.3	74.4	74.4	74.4	74.4
T7	Belasco Theater	67.3	67.5	67.5	67.5	67.5	68.1	68.3	68.3	68.3	68.3	68.5	68.7	68.7	68.7	68.7
T8	Dorothy Chandler Pavilion	66.5	66.6	66.5	66.6	66.5	67.2	67.3	67.2	67.3	67.2	67.6	67.7	67.6	67.7	67.6

Source: ATS Consulting, July 2016.

Table 7-12. Summary of AM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)																	
Receiver ID	**Desc.**	**Location**	**Existing Year (2014/2015)**					**Opening Year (2020)**					**Horizon Year (2040)**				
			Alt. 1	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**
All Build Alternatives																	
R1	MFR	Broadway/ 3rd St.	73.5	73.7	73.7	73.7	73.7	74.1	74.3	74.3	74.3	74.3	74.6	74.7	74.7	74.7	74.7
R2	MFR	Broadway/ 3rd St.	73.5	73.7	73.7	73.7	73.7	74.1	74.3	74.3	74.3	74.3	74.6	74.7	74.7	74.7	74.7
R3	MFR	Broadway/ 5th St.	73.5	73.7	73.7	73.7	73.7	73.8	74.0	74.0	74.0	74.0	74.2	74.4	74.4	74.4	74.4
R4	MFR	Broadway/ 4th St.	71.0	71.2	71.2	71.2	71.2	71.3	71.5	71.5	71.5	71.5	71.7	71.9	71.9	71.9	71.9
R5	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.3	71.5	71.5	71.5	71.5	71.7	71.9	71.9	71.9	71.9
R6	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R7	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R8	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R9	MFR	Broadway/ 6th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R10	MFR	Broadway/ 6th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1

Table 7-12. Summary of AM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)

Receiver ID	Desc.	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
R11	MFR	Broadway/ 6th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R12	MFR	Broadway/ 7th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R13	MFR	Broadway/ 7th St.	72.8	73.0	73.0	73.0	73.0	73.6	73.8	73.8	73.8	73.8	74.0	74.2	74.2	74.2	74.2
R14	Hotel	Broadway/ 7th St.	72.8	73.0	73.0	73.0	73.0	73.6	73.8	73.8	73.8	73.8	74.0	74.2	74.2	74.2	74.2
R15	MFR	Broadway/ 8th St.	72.8	73.0	73.0	73.0	73.0	73.6	73.8	73.8	73.8	73.8	74.0	74.2	74.2	74.2	74.2
R16	MFR	Broadway/ 9th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0
R17	MFR	Broadway/ 8th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0
R18	MFR	Broadway/ 9th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0
R19	MFR	Broadway/ 9th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.1	74.1	74.1	74.1
R19A	MFR	Broadway/ 9th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.1	74.1	74.1	74.1
R20	MFR	Broadway/ 9th St.	72.8	73.0	73.0	73.0	73.0	73.5	73.7	73.7	73.7	73.7	73.9	74.1	74.1	74.1	74.1
R21	MFR	Broadway/ 11th St.	72.8	72.9	72.9	72.9	72.9	73.8	73.9	73.9	73.9	73.9	74.1	74.3	74.3	74.3	74.3
R22	MFR	11th St./ Grand Ave.	64.5	65.1	65.1	65.1	65.1	64.7	65.3	65.3	65.3	65.3	65.2	65.7	65.7	65.7	65.7
R23	MFR	11th St./Hope St.	64.5	65.0	65.0	65.0	65.0	65.0	65.5	65.5	65.5	65.5	65.4	65.9	65.9	65.9	65.9
R24	MFR	11th St./Flower St.	64.5	65.2	65.2	65.2	65.2	65.5	66.0	66.0	66.0	66.0	65.9	66.4	66.4	66.4	66.4
R25	Hotel	Figueroa/ 11th St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.8	70.8	70.8	70.8	70.8
R26	Hotel	Figueroa/Olympic St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.8	70.8	70.8	70.8	70.8
R27	MFR	Figueroa/Olympic St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.8	70.8	70.8	70.8	70.8
R28	MFR	Figueroa/9th St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.8	70.8	70.8	70.8	70.8
R32	MFR	Hill St./5th St.	64.7	64.8	64.8	64.8	64.8	64.9	65.1	65.1	65.1	65.1	65.4	65.5	65.5	65.5	65.5
R33	MFR	Hill St./4th	64.7	64.8	64.8	64.8	64.8	64.9	65.1	65.1	65.1	65.1	65.4	65.5	65.5	65.5	65.5

Table 7-12. Summary of AM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)																	
Receiver ID	**Desc.**	**Location**	**Existing Year (2014/2015)**					**Opening Year (2020)**					**Horizon Year (2040)**				
			Alt. 1	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**
		St.															
R34	MFR	Hill St./3rd St.	64.7	64.8	64.8	64.8	64.8	65.0	65.1	65.1	65.1	65.1	65.4	65.5	65.5	65.5	65.5
R35	Hotel	Hill St./2nd St.	64.7	64.8	64.8	64.8	64.8	65.0	65.1	65.1	65.1	65.1	65.4	65.5	65.5	65.5	65.5
7th Street Alternatives 2 and 3																	
R29	Hotel	Figueroa/7th St.	68.9	68.9	68.9			69.0	69.0	69.0			69.5	69.5	69.5		
R30	Hotel	7th St./ Flower St.	68.9	69.1	69.1			69.0	69.2	69.2			69.5	69.6	69.6		
R31	MFR	7th St./Olive St.	68.9	69.1	69.1			69.0	69.2	69.2			69.4	69.6	69.6		
9th Street Alternatives 4 and 5																	
R36	MFR	Hope St./ Flower St.	68.4			68.5	68.5	68.8			68.9	68.9	69.2			69.3	69.3
R37	MFR	9th St. /Flower St.	68.4			68.5	68.5	68.8			68.9	68.9	69.2			69.3	69.3
R38	MFR	9th St./ Grand Ave.	68.4			68.5	68.5	68.8			68.9	68.9	69.2			69.3	69.3
R39	MFR	Hill St./8th St.	68.4			68.5	68.5	68.7			68.8	68.8	69.1			69.2	69.2

Source: ATS Consulting, January 2016.

Table 7-13. Summary of PM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)																	
Receiver ID	**Desc.**	**Location**	**Existing Year (2014/2015)**					**Opening Year (2020)**					**Horizon Year (2040)**				
			Alt. 1	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**
All Build Alternatives																	
R1	MFR	Broadway/ 3rd St.	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0	74.3	74.4	74.4	74.4	74.4
R2	MFR	Broadway/ 3rd St.	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0	74.3	74.4	74.4	74.4	74.4
R3	MFR	Broadway/ 5th St.	73.5	73.7	73.7	73.7	73.7	73.8	74.0	74.0	74.0	74.0	74.2	74.4	74.4	74.4	74.4
R4	MFR	Broadway/ 4th St.	71.0	71.2	71.2	71.2	71.2	71.3	71.5	71.5	71.5	71.5	71.7	71.9	71.9	71.9	71.9
R5	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.3	71.5	71.5	71.5	71.5	71.7	71.9	71.9	71.9	71.9
R6	MFR	Broadway/	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1

Table 7-13. Summary of PM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)

Receiver ID	Desc.	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
		5th St.															
R7	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R8	MFR	Broadway/ 5th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R9	MFR	Broadway/ 6th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R10	MFR	Broadway/ 6th St.	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
R11	MFR	Broadway/ 6th St.	71.0	71.1	71.1	71.1	71.1	71.4	71.6	71.6	71.6	71.6	71.8	72.0	72.0	72.0	72.0
R12	MFR	Broadway/ 7th St.	71.0	71.1	71.1	71.1	71.1	71.4	71.6	71.6	71.6	71.6	71.8	72.0	72.0	72.0	72.0
R13	MFR	Broadway/ 7th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.8	73.8	73.8	73.8	74.1	74.2	74.2	74.2	74.2
R14	Hotel	Broadway/ 7th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.8	73.8	73.8	73.8	74.1	74.2	74.2	74.2	74.2
R15	MFR	Broadway/ 8th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.8	73.8	73.8	73.8	74.1	74.2	74.2	74.2	74.2
R16	MFR	Broadway/ 9th St.	72.8	72.9	72.9	72.9	72.9	73.4	73.5	73.5	73.5	73.5	73.8	73.9	73.9	73.9	73.9
R17	MFR	Broadway/ 8th St.	72.8	72.9	72.9	72.9	72.9	73.4	73.5	73.5	73.5	73.5	73.8	73.9	73.9	73.9	73.9
R18	MFR	Broadway/ 9th St.	72.8	72.9	72.9	72.9	72.9	73.4	73.5	73.5	73.5	73.5	73.8	73.9	73.9	73.9	73.9
R19	MFR	Broadway/ 9th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.7	73.7	73.7	73.7	74.0	74.1	74.1	74.1	74.1
R19A	MFR	Broadway/ 9th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.7	73.7	73.7	73.7	74.0	74.1	74.1	74.1	74.1
R20	MFR	Broadway/ 9th St.	72.8	72.9	72.9	72.9	72.9	73.6	73.7	73.7	73.7	73.7	74.0	74.1	74.1	74.1	74.1
R21	MFR	Broadway/ 11th St.	72.8	72.9	72.9	72.9	72.9	73.9	74.0	74.0	74.0	74.0	74.2	74.3	74.3	74.3	74.3
R22	MFR	11th St./ Grand Ave.	64.5	64.8	64.8	64.8	64.8	64.8	65.0	65.0	65.0	65.0	65.2	65.4	65.4	65.4	65.4
R23	MFR	11th St./Hope St.	64.5	64.8	64.8	64.8	64.8	64.8	65.0	65.0	65.0	65.0	65.2	65.4	65.4	65.4	65.4
R24	MFR	11th St./ Flower St.	64.5	64.8	64.8	64.8	64.8	64.9	65.2	65.2	65.2	65.2	65.3	65.6	65.6	65.6	65.6
R25	Hotel	Figueroa/ 11th St.	70.1	70.2	70.2	70.2	70.2	70.3	70.3	70.3	70.3	70.3	70.7	70.8	70.8	70.8	70.8
R26	Hotel	Figueroa/ Olympic St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.7	70.8	70.8	70.8	70.8
R27	MFR	Figueroa/ Olympic St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.7	70.8	70.8	70.8	70.8
R28	MFR	Figueroa/ 9th St.	70.1	70.2	70.2	70.2	70.2	70.3	70.4	70.4	70.4	70.4	70.7	70.8	70.8	70.8	70.8

Table 7-13. Summary of PM Peak Hour Traffic Noise for Category 2 Land Uses – Leq(h) (dBA)																	
Receiver ID	Desc.	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)				
			Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
R32	MFR	Hill St./5th St.	64.7	64.8	64.8	64.8	64.8	65.1	65.2	65.2	65.2	65.2	65.5	65.6	65.6	65.6	65.6
R33	MFR	Hill St./4th St.	64.7	64.8	64.8	64.8	64.8	65.1	65.2	65.2	65.2	65.2	65.5	65.6	65.6	65.6	65.6
R34	MFR	Hill St. 3rd St.	64.7	64.8	64.8	64.8	64.8	65.3	65.4	65.4	65.4	65.4	65.7	65.8	65.8	65.8	65.8
R35	Hotel	Hill St./2nd St.	64.7	64.8	64.8	64.8	64.8	65.3	65.4	65.4	65.4	65.4	65.7	65.8	65.8	65.8	65.8
7th Street Alternatives 2 and 3																	
R29	Hotel	Figueroa/ 7th St.	68.9	68.9	68.9			69.0	69.0	69.0			69.5	69.5	69.5		
R30	Hotel	7th St./ Flower St.	68.9	69.1	69.1			69.0	69.2	69.2			69.4	69.6	69.6		
R31	MFR	7th St./ Olive St.	68.9	69.1	69.1			69.0	69.2	69.2			69.5	69.6	69.6		
9th Street Alternatives 4 and 5																	
R36	MFR	Hope St./ Flower St.	68.4			68.5	68.5	69.8			69.9	69.9	70.1			70.2	70.2
R37	MFR	9th St./ Flower St.	68.4			68.5	68.5	69.8			69.9	69.9	70.1			70.2	70.2
R38	MFR	9th St./ Grand Ave.	68.4			68.5	68.5	69.2			69.3	69.3	69.6			69.7	69.7
R39	MFR	Hill St.8th St.	68.4			68.5	68.5	68.8			68.8	68.8	69.2			69.2	69.2

Source: ATS Consulting, January 2016.

Table 7-14. Summary of AM Peak Hour Traffic Noise for Category 3 Land Uses – Leq(h) (dBA)																
Receiver ID	Desc.	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)				
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
All Build Alternatives																
I1	Mosk Courthouse	71.0	71.2	71.1	71.2	71.1	71.3	71.4	71.3	71.4	71.3	71.7	71.8	71.7	71.8	71.7
I2	LA Law Library	71.0	71.1	71.0	71.1	71.0	71.2	71.3	71.2	71.3	71.2	71.7	71.7	71.7	71.7	71.7
I2A	Federal Courthouse	71.0	71.0	71.0	71.0	71.0	71.3	71.3	71.3	71.3	71.3	71.7	71.8	71.8	71.8	71.8
I3	Guadalupe Wedding Chapel	73.5	73.7	73.7	73.7	73.7	74.1	74.3	74.3	74.3	74.3	74.6	74.7	74.7	74.7	74.7
I4	Optometrist	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
I5	Clinic	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
I6	Universal Church	71.0	71.2	71.2	71.2	71.2	71.8	72.0	72.0	72.0	72.0	72.2	72.4	72.4	72.4	72.4

	(Formerly The State Theater)															
I7	Optometrist	71.0	71.2	71.2	71.2	71.2	71.7	71.9	71.9	71.9	71.9	72.1	72.2	72.2	72.2	72.2
I8	SIA Tech School	67.3	67.9	67.9	67.9	67.9	67.7	68.3	68.3	68.3	68.3	68.1	68.6	68.6	68.6	68.6
I9	YWCA Job Corps & SIA Tech School	67.3	67.9	67.9	67.9	67.9	67.7	68.3	68.3	68.3	68.3	68.1	68.6	68.6	68.6	68.6
I10	Grammy Museum	68.0	68.1	68.1	68.1	68.1	68.2	68.3	68.3	68.3	68.3	68.7	68.7	68.7	68.7	68.7
I11	Pershing Square	68.6	68.7	68.7	68.7	68.7	68.8	68.9	68.9	68.9	68.9	69.2	69.3	69.3	69.3	69.3
I12	Angels Knoll Park	68.6	68.7	68.7	68.7	68.7	68.9	69.0	69.0	69.0	69.0	69.3	69.4	69.4	69.4	69.4
9th Street Alternatives 4 and 5																
I13	Grand Hope Park	68.4			68.5	68.5	68.8			69.0	69.0	69.2			69.4	69.4
I14	FIDM	68.4			68.5	68.5	68.8			69.0	69.0	69.2			69.4	69.4

Source: ATS Consulting, January 2016.

Table 7-15. Summary of PM Peak Hour Traffic Noise for Category 3 Land Uses – Leq(h) (dBA)

Receiver ID	Desc.	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)				
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5
All Build Alternatives																
I1	Mosk Courthouse	71.0	71.1	71.0	71.1	71.0	71.3	71.4	71.3	71.4	71.3	71.7	71.8	71.7	71.8	71.7
I2	LA Law Library	71.0	71.1	71.0	71.1	71.0	71.2	71.3	71.2	71.3	71.2	71.7	71.7	71.7	71.7	71.7
I2A	Federal Courthouse	71.0	71.0	71.0	71.0	71.0	71.6	71.7	71.7	71.7	71.7	72.0	72.1	72.1	72.1	72.1
I3	Guadalupe Wedding Chapel	73.5	73.7	73.7	73.7	73.7	73.9	74.0	74.0	74.0	74.0	74.3	74.4	74.4	74.4	74.4
I4	Optometrist	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
I5	Clinic	71.0	71.2	71.2	71.2	71.2	71.5	71.7	71.7	71.7	71.7	71.9	72.1	72.1	72.1	72.1
I6	Universal Church (Formerly The State Theater)	71.0	71.1	71.1	71.1	71.1	71.8	72.0	72.0	72.0	72.0	72.3	72.4	72.4	72.4	72.4
I7	Optometrist	71.0	71.1	71.1	71.1	71.1	71.6	71.7	71.7	71.7	71.7	72.0	72.1	72.1	72.1	72.1
I8	SIA Tech School	67.3	67.6	67.6	67.6	67.6	67.8	68.0	68.0	68.0	68.0	68.2	68.4	68.4	68.4	68.4
I9	YWCA Job Corps & SIA Tech School	67.3	67.6	67.6	67.6	67.6	67.8	68.0	68.0	68.0	68.0	68.2	68.4	68.4	68.4	68.4
I10	Grammy Museum	68.0	68.1	68.1	68.1	68.1	68.2	68.2	68.2	68.2	68.2	68.6	68.7	68.7	68.7	68.7
I11	Pershing Square	68.6	68.7	68.7	68.7	68.7	68.9	69.0	69.0	69.0	69.0	69.3	69.4	69.4	69.4	69.4
I12	Angels Knoll	68.6	68.7	68.7	68.7	68.7	69.0	69.1	69.1	69.1	69.1	69.4	69.5	69.5	69.5	69.5

	Park															
9th Street Alternatives 4 and 5																
I13	Grand Hope Park	68.4			68.5	68.5	69.6			69.7	69.7	70.0			70.1	70.1
I14	FIDM	68.4			68.5	68.5	69.6			69.7	69.7	70.0			70.1	70.1

Source: ATS Consulting, January 2016.

7.5 Streetcar Operational Vibration

As discussed in Section 4.4, FTA guidelines provide two sets of criteria for assessing vibration impacts. The first is based on the overall vibration velocity level and is intended for use with a general impact assessment. The second is for use with a detailed impact assessment when the predictions include the 1/3 octave band spectra. The approach used for this assessment is:

1. The predicted overall vibration velocity level is compared to the applicable General Assessment threshold. The thresholds are 72 VdB for residential land uses (FTA Category 2) and 75 VdB for institutional land uses (FTA Category 3).

2. If the predicted level is below the General Assessment threshold, no additional analysis is performed.

3. If the predicted level is above the General Assessment threshold, the predicted 1/3 octave band spectrum is compared to the threshold for a Detailed Impact Assessment. Over the 8 to 80 Hz range, the thresholds are a maximum in any 1/3 octave band of 72 VdB for residential land uses and 75 VdB for institutional land uses. This level is referred to as the ***band maximum*** level.

4. Mitigation is evaluated if the predicted vibration levels exceed both the General and Detailed Assessment thresholds.

For "special" land uses such as theaters and concert halls, the FTA impact criteria do not have a separate threshold for detailed impact assessments. Mitigation is evaluated for land uses that fall into one of the FTA special land uses when the predicted vibration level exceeds the applicable General Assessment impact threshold. The streetcar vibration inside the "special" buildings is evaluated individually for each receiver later in this section.

The vibration impact assessment for residential land uses is presented in Table 7-16 and for institutional land uses is presented in Table 7-17. Included in Table 7-17 are land uses such as schools, churches, clinics, and optometrists. However, because outdoor activities are generally not affected by groundborne vibration, land uses such as parks are not included in Table 7-17.

As shown in Table 7-16, there are two receivers in the alignment that are common to all four build alternatives where the predicted vibration levels at residential land uses exceed the General Assessment impact threshold. The predicted vibration levels exceed the General Assessment impact threshold at one additional receiver for the 9th Street Alternatives 4 and 5. The predicted indoor vibration levels do not exceed the Detailed Assessment impact threshold at any of these receivers. The conclusion is that no vibration impacts from the streetcar operations are predicted at any Category 2 land uses.

The predicted vibration levels for Category 3 land uses are shown in Table 7-17, and as can be seen, all of the predicted vibration levels except for the Federal Courthouse are below the General Assessment impact threshold. The predicted indoor vibration levels do not exceed the Detailed Assessment impact threshold at the Federal Courthouse. Therefore no vibration impacts from streetcar operations are predicted at any Category 3 land uses.

Table 7-16. Summary of Vibration Impact Assessment for Category 2 Land Uses

Receiver	Desc.[a]	NT Dist.[b] (feet)	Adjacent Street	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
					Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[l] (VdB)	Impact Yes/No	# of Units [d]
All Build Alternatives										
R1	MFR	35	Broadway	20	69	72	No	--	--	--
R2	MFR	55	Broadway	20	65	72	No	--	--	--
R3	MFR	35	Broadway	20	69	72	No	--	--	--
R4	MFR	50	Broadway	25	67	72	No	--	--	--
R5	MFR	50	Broadway	20	66	72	No	--	--	--
R6	MFR	35	Broadway	25	71	72	No	--	--	--
R7	MFR	35	Broadway	25	71	72	No	--	--	--
R8	MFR	35	Broadway	20	69	72	No	--	--	--
R9	MFR	50	Broadway	25	67	72	No	--	--	--
R10	MFR	50	Broadway	20	66	72	No	--	--	--
R11	MFR	50	Broadway	20	66	72	No	--	--	--
R12	MFR	50	Broadway	20	66	72	No	--	--	--
R13	MFR	35	Broadway	25	71	72	No	--	--	--
R14	Hotel	50	Broadway	25	67	72	No	--	--	--
R15	MFR	50	Broadway	20	66	72	No	--	--	--
R16	MFR	35	Broadway	25	71	72	No	--	--	--
R17	MFR	50	Broadway	20	66	72	No	--	--	--
R18	MFR	50	Broadway	20	66	72	No	--	--	--
R19	MFR	35	Broadway	25	71	72	No	--	--	--
R19A	MFR	35	Broadway	25	71	72	No	--	--	--
R20	MFR	50	Broadway	25	67	72	No	--	--	--
R21	MFR	35	Broadway	25	71	72	No	--	--	--
R22	MFR	25	[1]1th St.	25	73	72	Yes	67	No	--
R23	MFR	25	[1]1th St.	20	72	72	No	--	--	--
R24	MFR	30	[1]1th St.	25	72	72	No	--	--	--
R25	Hotel	45	Figueroa	35	71	72	No	--	--	--
R26	Hotel	45	Figueroa	35	71	72	No	--	--	--
R27	MFR	40	Figueroa	25	69	72	No	--	--	--
R28	MFR	40	Figueroa	35	72	72	No	--	--	--
R32	MFR	45	Hill	25	68	72	No	--	--	--
R33	MFR	45	Hill	25	68	72	No	--	--	--
R34	MFR	80	Hill	25	62	72	No	--	--	--
R35	Hotel	25	Hill	25	73	72	Yes	67	No	--
7th Street Alternatives 2 and 3										
R29	Hotel	12[5]	7th St.	20	54	72	No	--	--	--
R30	Hotel	3[5]	7th St.	25	71	72	No	--	--	--
R31	MFR	3[5]	7th St.	25	71	72	No	--	--	--
9th Street Alternatives 4 and 5										
R36	MFR	4[0]	9th St.	25	69	72	No	--	--	--
R37	MFR	7[0]	9th St.	25	64	72	No	--	--	--

Table 7-16. Summary of Vibration Impact Assessment for Category 2 Land Uses										
Receiver	Desc.[(a)]	NT Dist.[(b)] (feet)	Adjacent Street	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
					Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[l] (VdB)	Impact Yes/No	# of Units [(d)]
R38	MFR	6^0	9th St.	25	65	72	No	--	--	--
R39	MFR	2^5	9th St.	25	73	72	Yes	67	No	--

Notes:

(a) Desc. = Type of land use, MFR = multi-family residence.

(b) Distance to the streetcar track is rounded off to the nearest 5 feet.

(c) Maximum 1/3 octave band level in 8 to 80 Hz frequency range.

(d) Number of impacted dwelling units based on Detailed Assessment vibration criteria. Note that only units that are within the impact distance and where people sleep are counted for the vibration impacts.

Table 7-17. Summary of Vibration Impact Assessment for Category 3 Land Uses									
Receiver #	Receiver Name	NT Dist.[(a)] (feet)	Speed (mph)	General Impact Assessment			Detailed Impact Assessment		
				Lv (VdB)	Thresh. (VdB)	Impact (Yes/No)	Band Max[(b)] (VdB)	Impact Yes/No	# of Units
All Build Alternatives									
I1	Mosk Courthouse	50	25	67[(c,d)]	75	No	--	--	--
I2	LA Law Library	125	20	64	75	No	--	--	--
I2A	Federal Courthouse	30	20	82	80	Yes	77	No	--
I3	Guadalupe Wedding Chapel	35	25	71	75	No	--	--	--
I4	Optometrist	35	20	69	75	No	--	--	--
I5	Clinic	50	20	66	75	No	--	--	--
I6	Universal Church (Formerly The State Theater)	35	25	71	75	No	--	--	--
I7	Optometrist	50	20	66	75	No	--	--	--
I8	SIA Tech School	30	25	72	75	No	--	--	--
I9	YWCA Job Corps & SIA Tech School	30	20	70	75	No	--	--	--
I10	Grammy Museum	90	25	60	75	No	--	--	--
I11	Pershing Square	50	25	67	75	No	--	--	--
I12	Angels Knoll Park	70	25	64	75	No	--	--	--
9th Street Alternatives 4 and 5									
I13	Grand Hope Park	60	25	65	75	No	--	--	--
I14	FIDM	60	25	65	75	No	--	--	--

Source: ATS Consulting, January 2013.

Notes:

Receivers I1 through I12 are common to all the build alternatives. There are no additional Category 3 land uses for Alternatives 2 and 3.

(a) Distance to the near track (NT) is rounded off to the nearest 5 feet.

(b) Maximum 1/3 octave band level in 8 to 80 Hz frequency range.

(c) Includes both inbound and outbound tracks.

(d) Includes +10 dB for vibration amplification due to wheel impacts at special trackwork.

In addition to the FTA vibration Category 1 through 3 land uses, FTA provides separate impact thresholds for several types of “special” buildings. The “special” buildings along the streetcar corridor include the Colburn School, Disney Concert Hall, Orpheum Theater, Belasco Theater and the United Artist Theater renovated and opened as the Theatre at Ace Hotel. In addition, there is potential for two other theaters on Broadway that are not currently in use to be restored/revived after the streetcars are in operation. The Million Dollar Theater would undergo its own noise and vibration studies and CEQA analysis when they are renovated. Because the theaters hold concerts and use the space for recording of TV shows and commercials, they were evaluated as concert halls. The vibration predictions for each “special” building are discussed below.

Disney Concert Hall

The predictions for the Disney Concert Hall are based on the measurements at site V-1. The measured LSTMs inside the BP Hall and the concert hall (main performance space) were combined with the force density to predict the levels of groundborne noise and vibration at the Disney Hall. The measurement locations are shown in Figure 7-5. The assumptions used in the prediction are:

Train Speed: 25 mph

Safety Factor: +5 decibels

Adjustment for converting VdB to dBA: 0 decibels

Adjustment for amplification from the turnout track on Grand Avenue: +10 decibels

Adjustment for impact line offset from the track centerline based on the composite curves given in Appendix E.

The predicted groundborne noise and vibration spectra inside the Disney Concert Hall are shown in Figure 7-6. The shaded area in the figure represents the range where the impact thresholds would be approached or exceeded. If the predicted spectrum is below the shaded area it means there would be no impacts. The predicted groundborne noise and vibration spectra in Figure 7-6 show peaks at 125 Hz; however, this seems to be due to background noise because there was very poor coherence at this frequency during the LSTM measurements (Section 6.2). Poor coherence could be caused by a number of factors including higher background vibration and relatively high attenuation of the vibration energy by the building foundation. The predicted levels are well below the shaded area in Figure 7-6 although predictions include a +10 dB adjustment factor for amplification from the turnout track frogs. The predicted overall levels are shown in Table 7-18 and they do not exceed the FTA impact threshold for groundborne noise and vibration. Therefore, no groundborne noise and vibration impacts from the streetcar operations are predicted at the Disney Concert Hall.

Figure 7-5: Measurement Locations Inside Disney Concert Hall Auditorium (Left) and BP Hall (Right)

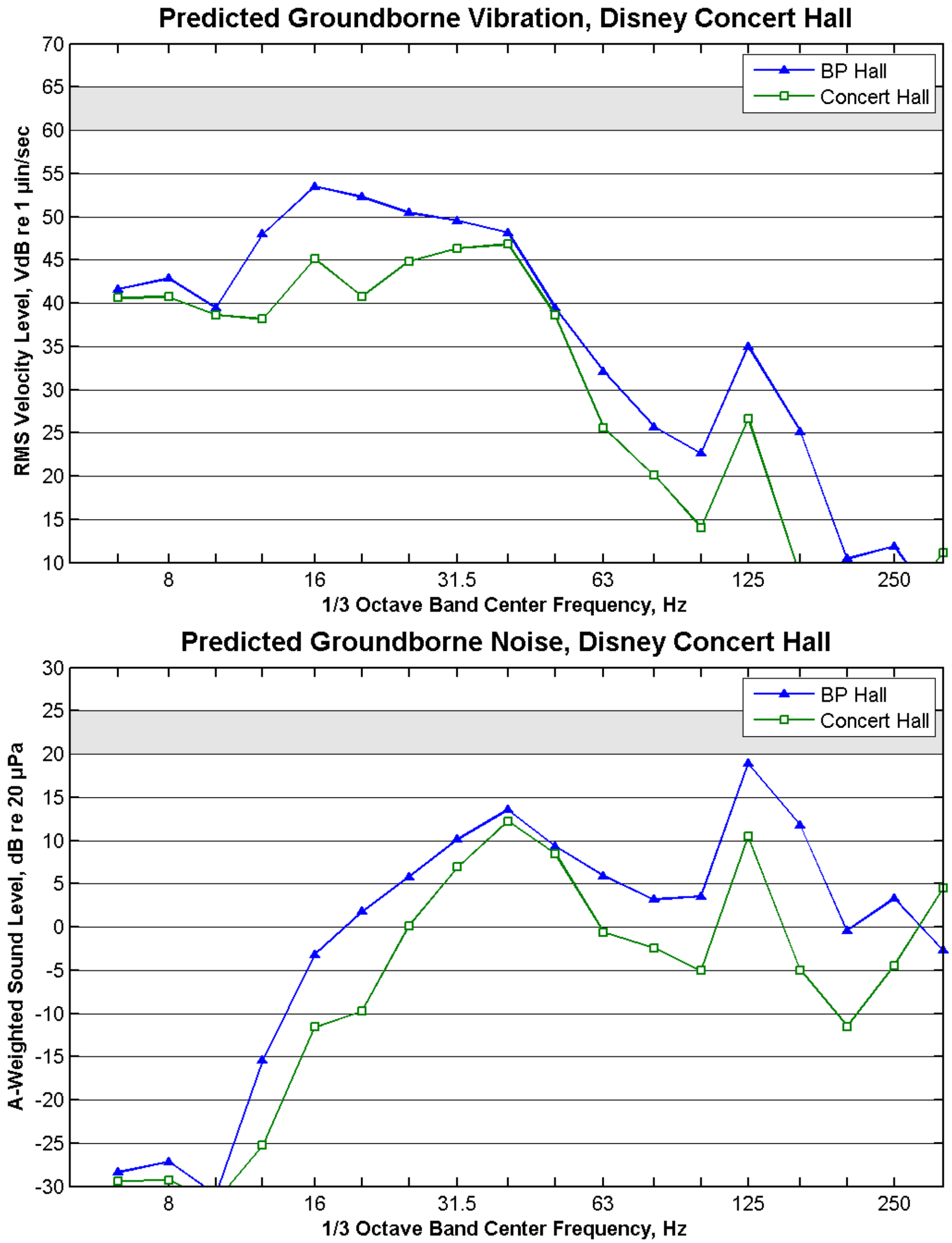


Figure 7-6: Predicted Groundborne Vibration and Groundborne Noise, Disney Concert Hall

(Shaded area indicates range where vibration and noise levels approach and may exceed the FTA impact threshold for concert halls)

Orpheum Theater

The current use of the Orpheum Theater includes vibration-sensitive activities such as TV recordings, film shootings and theatrical productions. The vibration predictions for the Orpheum Theater are based on the measurements at site V-2. The LSTM measurements inside the auditorium area were performed at seats X-40 and V-2 (see Section 6.2). The measurement locations are shown in Figure 7-7. For predicting vibration from streetcar operations, the measured LSTMs were combined with the force density and adjustments based on the following assumptions:

Train Speed: 25 mph

Safety Factor: +5 decibels

Adjustment for converting VdB to dBA: 0 decibels

Adjustment for impact line offset from the track centerline: Based on the composite curves given in Appendix E.

The predicted groundborne noise and vibration spectra inside the Orpheum Theater auditorium are shown in Figure 7-8. Table 7-18 shows the predicted overall levels. The predicted groundborne noise and vibration are well below the shaded area in Figure 7-8 and the overall levels are 10 to 15 decibels below the FTA impact threshold (see Table 7-18). Therefore, no groundborne noise and vibration impacts from the streetcar operations are predicted at the Orpheum Theater.

Figure 7-7: Measurement Locations at the Orpheum Theater Seat X-40 (Left) and Seat V-2 (Right)

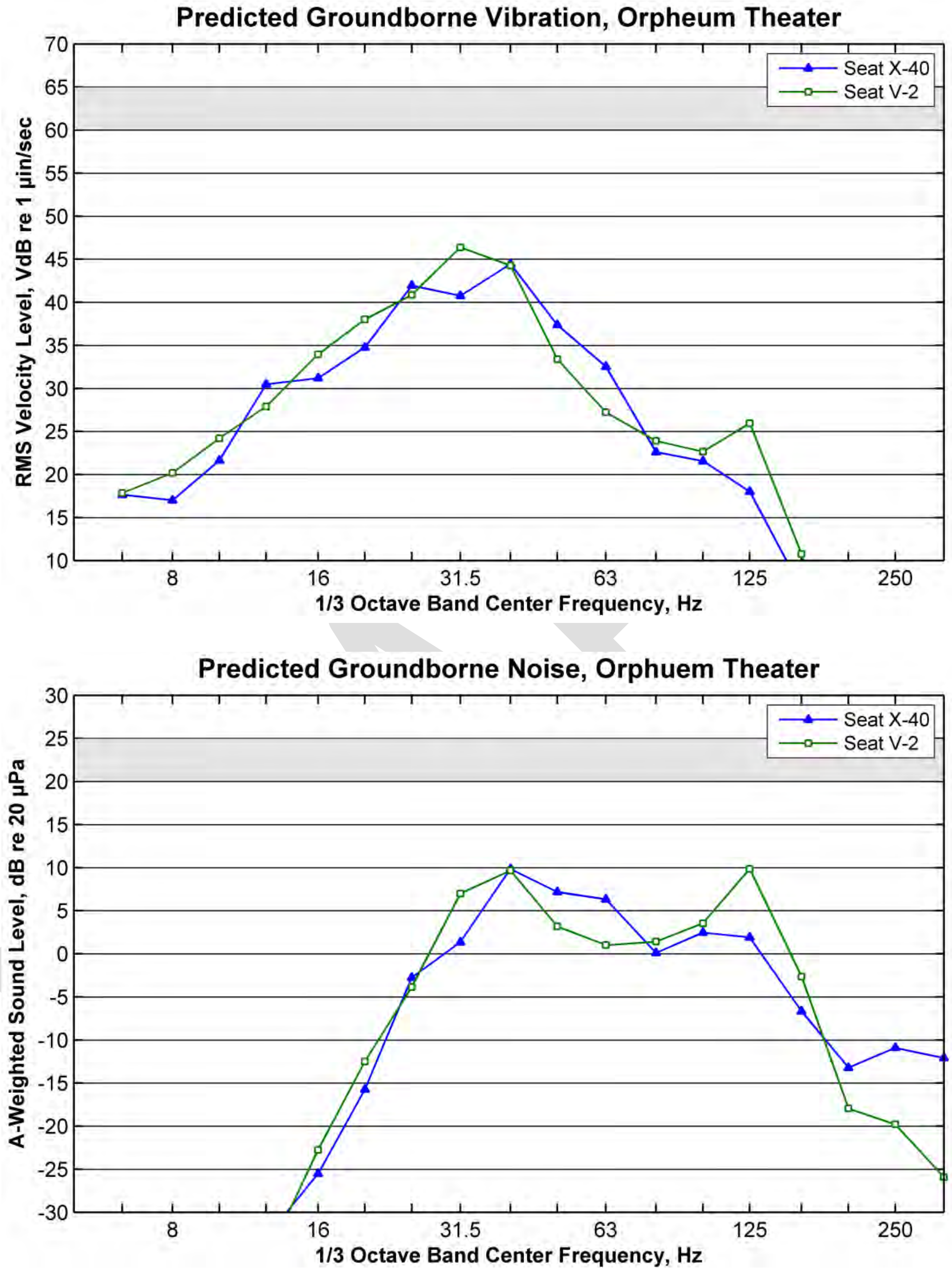


Figure 7-8: Predicted Groundborne Vibration and Groundborne Noise, Orpheum Theater

(Shaded area indicates range where vibration and noise levels approach and may exceed the FTA impact threshold recording studios)

Belasco Theater

The current use of the Belasco Theater includes concerts and performances. The vibration predictions for the Belasco Theater are based on the measurements at site V-3. The LSTM measurements inside the auditorium area were performed on a dance floor (off stage) and on a raised wooden stage (on stage). The details of the test and the LSTM data for this site are discussed in Section 6.2. The measurement locations are shown in Figure 7-9. For predicting vibration from the streetcar operations, the measured LSTMs were combined with the force density and adjustments based on the following assumptions:

Train Speed: 25 mph

Safety Factor: +5 decibels

Adjustment for converting VdB to dBA: 0 decibels

Adjustment for impact line offset from the track centerline: Based on the composite curves shown in Appendix E.

The predicted groundborne noise and vibration inside the Belasco Theater performance area are shown in Figure 7-9. The vibration spectrum shows a peak between 16 and 20 Hz and rolls off after indicating resonance amplification. Because the spectrum both on and off stage behaved similarly, it seems that the floor vibration could be the source of amplification. The predicted groundborne vibration on stage is in the shaded area (Figure 7-10) and the overall vibration level is within 1 decibel of the FTA impact threshold (see Table 7-18). The groundborne noise is about 6 decibels below the FTA impact threshold. Although no groundborne noise and vibration impacts from the streetcar operations are predicted at the Belasco Theater, streetcar operations could be amplified inside this theater because of the characteristics of the floor vibration. Therefore we recommend that the vibration inside the theater be verified after the streetcars are in operation. If the levels exceed the predicted groundborne vibration, mitigation could involve stiffening the floors by reducing the floor joist spacing.

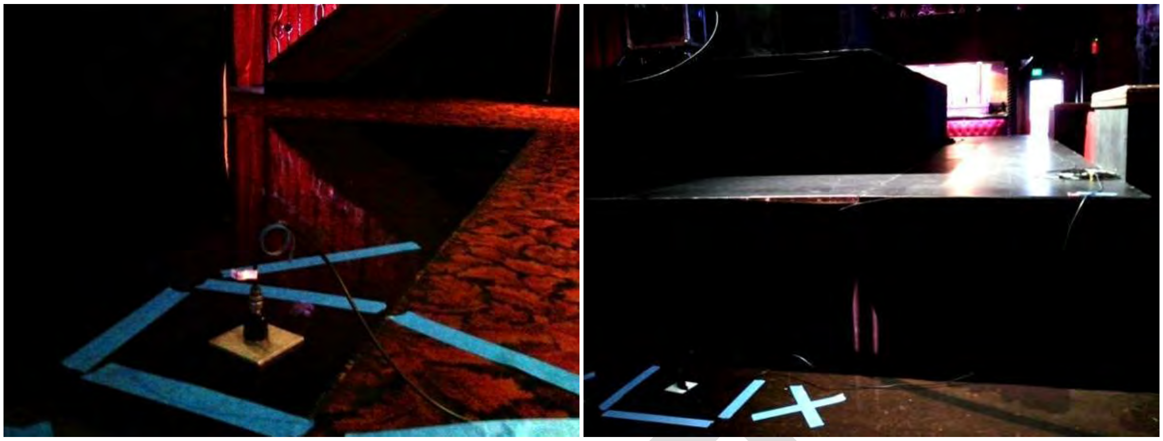


Figure 7-9: Measurement Locations inside Belasco Theater Stage Floor (Left) and On Stage (Right)

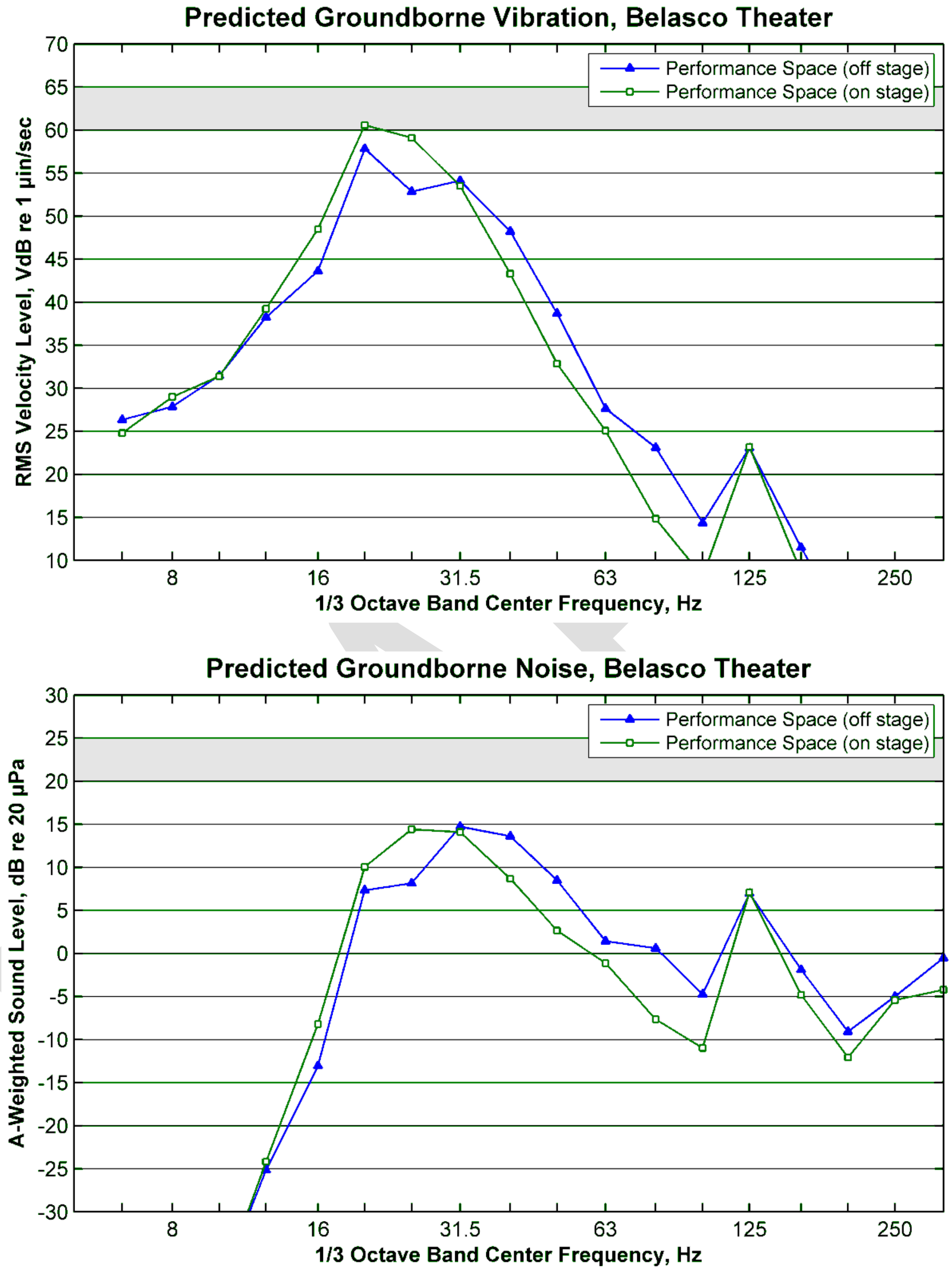


Figure 7-10: Predicted Groundborne Vibration and Groundborne Noise, Belasco Theater

(Shaded area indicates range where vibration and noise levels approach and may exceed the FTA impact threshold recording studios)

Colburn School

The Coburn School is a school of performing arts and a conservatory of music with recording facilities. It is located 180 feet south of the streetcar tail tracks on Grand Avenue and is within 200 feet from Disney Hall. The proposed streetcar tracks are relatively far from the building and streetcar speeds would be only 5 to 15 mph on the tail tracks. Thus, a site-specific test is not required because the groundborne noise and vibration from the streetcars would be substantially lower than the impact thresholds. Groundborne noise and vibration was predicted for this site based on the LSTM measurements in the BP Hall at the Disney Concert Hall after adjusting for the outdoor propagation using the curves shown in Appendix E. No adjustment was used for the turnout track frogs in the tail tracks because amplification of vibration from the wheel impacts is unlikely at 180 feet up to 15 mph. The assumptions used in the predictions include:

Train Speed: 15 mph

Safety Factor: +5 decibels

Adjustment for converting VdB to dBA: 0 decibels

Adjustment for amplification from the turnout track on Grand Avenue: 0 decibels

Adjustment for impact line offset from the track centerline: Based on the composite curves shown in Appendix E.

The predicted groundborne noise and vibration inside the Colburn School are 2 dBA and 41 VdB, respectively (see Table 7-18). These levels are more than 20 dB below the FTA impact threshold. Although variations in outdoor to indoor transmission and floor amplification may be expected between the Disney Concert Hall and the Colburn School, the differences are unlikely to be over 10 dB. Therefore, no groundborne noise and vibration impacts are predicted at the Colburn School.

Theaters on Broadway

There are at least three theaters on Broadway that would be affected by the Streetcar operations. One of these is the United Artist Theater which has been renovated and opened as the Theatre at ACE Hotel was evaluated as both a theater (Site T6) and a residential land use (Site R19A). The groundborne noise and vibration from the streetcar operations were estimated for the Million Dollar Theater and Los Angeles Theater. These theaters were evaluated as concert halls. The setback distance of these theaters from the future streetcar track is 35 feet. It is noteworthy that the streetcar tracks would be closer to these theaters than the Orpheum Theater. The estimated overall groundborne noise and vibration for these theaters are based on measurements at the Orpheum Theater, after adjusting for the setback distance.

Because site-specific tests were not performed at these theaters, the estimates were used as a preliminary screening of the vibration levels. The estimated groundborne noise at the theaters is within 2 decibels of the FTA impact threshold, therefore not a significant impact (see Table 7-18). If there are plans to renovate/revive these theaters in the future, we recommend site-specific vibration tests at these receivers during the Final Design of the Project. In case potential for vibration impacts are identified from the streetcar operations, appropriate mitigation measures should be incorporated in the building renovation plans or in the track design to eliminate the impacts.

Table 7-18. Summary of Vibration Impact Assessment for "Special" Buildings								
Receiver #	Receiver Name	Location	Groundborne Vibration, VdB			Groundborne Noise, dBA		
			Threshold	Predicted	Impacts	Threshold	Predicted	Impacts
"Special" Buildings Currently in Use								
T1	Colburn School	Indoors	65	41[a]	No	25	2[a]	No
T2	Disney Concert Hall	BP Hall	65	59	No	25	22	No
		Concert Hall	65	53	No	25	17	No
T5	Orpheum Theater	Seat X-40	65	48	No	25	14	No
		Seat V-2	65	50	No	25	15	No
T7	Belasco Theater	Off Stage	65	61	No	25	19	No
		On Stage	65	64	No	25	19	No
T8	Dorothy Chandler Pavilion	Indoors	65	49[a]	No	25	12[a]	No
Theaters on Broadway								
T3	Million Dollar Theater	Performance Space	65	54[b]	No[c]	25	23[a]	No[b]
T4	Los Angeles Theater	Performance Space	65	54[b]	No[c]	25	23[a]	No[b]
T6	United Artist Theater	Performance Space	65	54[b]	No[c]	25	23[a]	No[b]

Source: ATS Consulting, January 2013.

Notes:

(a) The predictions are based on LSTM measured at the Disney Concert Hall.

(b) The estimates are based on measurements in the Orpheum Theater and not on site-specific tests at these receivers.

(c) The results need to be confirmed during Final Design.

7.6 Operational Noise Mitigation

The potential for noise impacts along the proposed streetcar alignments are predicted as moderate noise impacts at residential receivers R23 and R35, at the Disney Concert Hall, and at the future Federal Courthouse. A predicted Project noise level in the severe noise impact range is considered significant for both NEPA and CEQA, which would require mitigation. Sensitive receivers that show FTA moderate impacts are not considered to be severely or significantly adversely impacted under NEPA and CEQA. When the predicted Project noise level is in the FTA moderate noise impact range, FTA guidance states that mitigation measures should be considered along with the magnitude of the impact and the need for mitigation. Other factors could include the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-indoor sound insulation, and the cost effectiveness of mitigating noise to more acceptable levels.

It may be noted that the FTA noise impacts are based on outdoor noise levels. The outdoor noise sensitive activities at the Disney Concert Hall are shielded from the streetcar noise and would not be impacted. As an interior land use, Disney Concert Hall building has well designed sound insulation so the indoor noise from traffic and other exterior noise sources meet the very stringent criteria of a world class concert hall. The streetcar noise, which would be no louder than a bus or truck passby on Grand Avenue, would be unlikely to affect the sensitive interior spaces of the building.

At residential receivers R23 and R35, the predicted Project noise level is in the FTA moderate noise impact range. FTA guidance is that mitigation for moderate impact should be based on consideration of factors including the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-indoor sound insulation and the cost effectiveness of mitigating noise to more acceptable levels. Each sensitive receiver where predicted noise levels exceed the applicable impact threshold and potential mitigation measures is discussed below:

- **Receiver R23 (Moderate Impacts)**: This is a multi-family residential receiver located on W 11th Street between S Grand Avenue and S Hope Street. It includes receivers in two high-rise mixed use buildings. The 1st floor land uses include a coffee shop, fitness centers and a salon. There are 24 residential units in these two buildings that would be exposed to the streetcar noise. The predicted streetcar noise level increases from the existing level by only 2 decibels. Moderate noise impact is predicted at the balconies of these residential units, which are the only outdoor noise sensitive areas that would be exposed to streetcar noise. Use of sound walls as mitigation for the balconies is not feasible because these walls would impede the flow of traffic. Since this multi-family residence is sound insulated with double pane windows there is no other mitigation that would be feasible for this receiver. ***Recommendation: No Mitigation***.

- **Receiver R35 (Moderate Impacts)**: This receiver is the Kawada Hotel located on the southeast corner of S Hill Street and 2nd Street. The 1st floor land uses include a cafe, a restaurant and a bakery. There are 15 rooms in the upper levels of this hotel that would be exposed to the streetcar noise. The predicted streetcar noise level increases the existing level by less than 1decibel. Use of sound walls as mitigation is not feasible because these walls would impede the flow of traffic. There are no outdoor noise sensitive areas at this building that would be affected by streetcar noise. Since this hotel is sound insulated with double pane windows there is no other mitigation that would be feasible for this receiver. ***Recommendation: No Mitigation***.

- **Disney Concert Hall T2 (Moderate Impacts)**: The sources of streetcar noise impacts outside the Disney Concert Hall are the combination of: 1) wheel impacts at special trackwork and 2) potential squeal noise from tight curves located on Grand Avenue and 1st Street. The use of a “low impact” frog at the special trackwork would reduce the wheel impact noise. Use of one of several rail lubricants is usually sufficient to control wheel squeal. However because of the steep grade of the track there is concern with the use of a lubricant at this location. The FTA Guidance discusses wheel squeal from LRT vehicles and not from streetcars. It is less likely that wheel squeal would occur with a streetcar which is about 20 feet shorter than an LRT vehicle and 66-foot radii curves that are designed for the LA streetcar. The issue of wheel squeal, if it occurs at this location, would be addressed during pre-revenue operations. If it does occur the use of wheel dampers would control the wheel squeal without using a lubricant. ***Recommendation: Use of "low impact" frog such as a "well designed" flange-bearing frog with a ramp angle of between 1:20 and 1:100 for special trackwork and wheel dampers if wheel squeal occurs.***

- Federal Courthouse I2A (Moderate Impacts): Similar to the Disney Concert Hall, the sources of streetcar noise impacts outside the Federal Courthouse are the combination of: 1) wheel impacts at special trackwork and 2) potential squeal noise from tight curves located on Hill Street and 1st Street. The use of a "low impact" frog at the special trackwork would reduce the wheel impact noise. Wheel squeal can be minimized or avoided by use of wheel dampers. ***Recommendation: Use of "low impact" frog such as a "well designed" flange-bearing frog with a ramp angle of between 1:20 and 1:100 for special trackwork and wheel dampers if wheel squeal occurs.***

7.7 Maintenance and Storage Facility Noise Mitigation

Potential moderate noise impacts were predicted at the Guadalupe Wedding Chapel (I3), multi-family apartments (R33) and the Grand Lofts (R22) for MSF sites M1, M2 and M3, respectively. The mitigation measures recommended for each of these impacts to be implemented at MSF sites M1, M2, and M3 are:

- A "low impact" frog, such as a "well designed" flange bearing frog with a ramp angle between 1:20 and 1:100 for all turnouts within the MSF.
- Rail lubricators at all tight radius curves within the MSF to reduce and control wheel squeal.

7.8 Operational Vibration Mitigation

There are no sensitive receivers in the Project corridor where the predicted vibration levels exceed the FTA General Assessment or Detailed Assessment vibration impact thresholds. Therefore, no mitigation is recommended for vibration from the streetcar operations. However, we recommend that any vibration sensitive facility in the Project corridor such as a theater, concert hall or a recording studio located within 100 feet of the streetcar alignment that has not been evaluated in detail would be studied during Final Design. This includes the currently unoccupied Million Dollar Theater, and Los Angeles Theater and the renovated United Artist Theater opened as the Theatre at Ace Hotel. The four vibration test results for the current Project, although comparable, indicate that the vibration propagation paths in the downtown area are not just in soil but in the numerous underground structures whose transmission efficiencies are not straightforward to predict. Performing site-specific tests at these sensitive spaces would verify whether streetcar operations would result in vibration impacts inside the sensitive spaces and design suitable mitigation.

If the streetcar track would be less than 1 foot from any part of a building foundation, mitigation measures, such as a resilient mat installed under the trackbed or comparable design measure, would be used.

If plans are developed to renovate/revive the unoccupied theaters in the future, site-specific vibration tests shall be conducted at these receivers during final design of the Project. In case potential vibration impacts are identified resulting from streetcar operations, appropriate mitigation measures shall be incorporated in the building renovation plans or in the track design to eliminate the impacts.

If during final design vibration impacts are identified at the unoccupied theaters, a number of different approaches have been used by light rail and streetcar systems to reduce the levels of groundborne vibration. These measures range from very simple approaches such as stiffening the floors at the receivers to the very expensive such as placing the entire track system on a concrete slab that is supported by springs (a floating slab). The most common measure used to mitigate train vibration consists of placing some sort of resilient layer between the track and the soil. Some common approaches for installing standard vibration mitigation measures with embedded track are:

- Isolation mat under Track Slab: Isolation mats are similar to ballast mats that are designed to be placed under ballast and tie track and concrete slab track.
- QTrack Embedded Track: QTrack is a proprietary embedded track system supplied by Pandrol-CDM. It is a fastenerless continuously supported track with rubber profiles decoupling the whole rail from its environment.
- High-resilience boot: A common embedded track system is to place the rails in a rubber "boot", position the rails, and then pour concrete around the boot.

7.9 CEQA Noise and Vibration Impacts

The CEQA impact analysis for this Project assesses the:

- the existing conditions without the Project to the future Build conditions with the Project; and
- the future No Build conditions to the future Build conditions with the Project

As part of the CEQA noise analysis the following scenarios were evaluated for the No Project Alternative and the four build alternatives:

- Existing Year (2014/2015)
- Opening Year (2020)
- Horizon Year (2040)

7.9.1 Existing with the Streetcar Project

The noise levels due to the Project were added to the existing noise levels to determine the cumulative effect of the Project for the 2014/2015 Year. The Project noise levels for the assessment of the Category 1 land uses presented in Table 7-19 range from an Ldn of 58 to 61 dBA with the exception of Site T2, Disney Concert Hall where the Project noise level is 67 dBA due to the streetcar passby noise, noise squeal, and turnout impact noise. The Category 1 Project noise levels at Sites T1, and T3 through T8 are less than the existing traffic noise. At Site T2, Disney Concert Hall, the Project noise level is the same as the existing traffic noise.

The Project noise levels at the Category 2 land uses presented in Table 7-20 range from an Leq of 56 to 63 dBA which are less than the existing traffic noise. The Project noise levels at the Category 3 land uses presented in Table 7-21 range from an Leq of 56 to 63 dBA which are less than the existing traffic noise.

The Project noise levels were also added to the future traffic noise for the 2020 Opening Year and the 2040 Horizon Year. Table 7-19 through Table 7-21 present the traffic noise levels, combined traffic plus Project noise, and change in level due to the Project for all noise sensitive receivers (Categories 1, 2, and 3).

The increase in existing noise levels with the Project would be less than 3 dB at all the noise sensitive receivers with the exception of the following receivers:

T2 - Disney Concert Hall: Existing noise levels would increase in the range of 3.1 to 4.7 dBA.

T7 – Belasco Theater: Existing noise levels would increase in the range of 3.1 to 3.8 dBA.

T8 – Dorothy Chandler Pavilion: Existing noise levels would increase in the range of 3.0 to 3.1 dBA

R21 – Apartments at Broadway and 11th Street: Existing noise levels would increase by 3.0 dBA.

R23 – Apartments at Hope and 11th Streets: Existing noise levels would increase in the range of 3.1 to 3.8 dBA.

R24 - Metlofts: Existing noise levels would increase in the range of 3.2 to 3.8 dBA.

R35 – Kawada Hotel: Existing noise level would increase in the range of 3.0 to 3.1 dBA.

R36 – Apartments: Existing noise level would increase in the range of 3.0 to 3.6 dBA.

R37 – Skyline Apartments: Existing noise level would increase in the range of 3.0 to 3.5 dBA.

I1 – Mosk Courthouse: Existing noise level would increase in the range of 3.0 to 3.1 dBA.

I2A – Federal Courthouse: Existing noise levels would increase in the range of 3.8 to 4.5 dBA.

I13 – Grand Hope Park: Existing noise levels would increase by 3.3 dBA.

I14 – FIDM: Existing noise levels would increase by 3.3 dBA.

The exceedance of the existing noise levels at Receiver T2, Disney Concert Hall is due to the operation of the streetcar, specifically wheel squeal and impact noise from special trackwork. At Receiver T8, Dorothy Chandler Pavilion and I2A, Federal Courthouse, the exceedance is due to wheel squeal. These impacts can be mitigated as discussed in Section 7.3.1. The exceedances of the existing noise levels at the other receivers is due to the projected increase in future traffic with the proposed Project. Traffic noise mitigation would not be feasible or reasonable at any of these receivers.

7.9.2 Future No Build without the Streetcar Project

The Opening Year condition would include the existing projects and improvements committed to be implemented by the first year of operation, 2020. The 2040 Horizon Year would include projects and improvements committed to be implemented by 2040. The measured existing noise levels are not expected to increase by more than 2 dB by 2040.

Table 7-19. CEQA Noise Impact Analysis for Category 1 Land Uses – Ldn (dBA)

Receiver ID	Receiver Name	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [(a)]				Future (2020) Minus Exist (2014/2015) Noise [(a)]				Future (2040) Minus Exist (2014/2015) Noise [(a)]			
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
T1	Colburn School	67.2	67.5	67.5	67.5	67.5	67.8	68.6	68.6	68.6	68.6	68.2	69.0	69.4	69.4	69.4	0.3	0.3	0.3	0.3	1.4	1.4	1.4	1.4	1.8	2.2	2.2	2.2
T2	Disney Concert Hall	67.2	70.3	70.2	70.3	70.2	67.9	71.3	71.4	71.3	71.4	68.3	71.5	71.9	72.0	71.9	**3.1**	**3.0**	**3.1**	**3.0**	**4.1**	**4.2**	**4.1**	**4.2**	**4.3**	**4.7**	**4.8**	**4.7**
T3	Million Dollar Theater	74.4	74.8	74.8	74.8	74.8	74.5	74.8	75.0	75.0	75.0	75	75.5	75.7	75.9	75.9	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	1.1	1.3	1.5	1.5
T4	Los Angeles Theater	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.4	76.5	76.5	0.4	0.4	0.4	0.4	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
T5	Orpheum Theater	76.8	77.0	77.0	77.0	77.0	77.5	78.3	78.4	78.4	78.4	77.9	78.8	79.0	79.2	79.2	0.2	0.2	0.2	0.2	1.5	1.6	1.6	1.6	2.0	2.2	2.4	2.4
T6	United Artist Theater	76.8	77.1	77.1	77.1	77.1	77.6	78.5	78.6	78.6	78.6	78	79.0	79.3	79.4	79.4	0.3	0.3	0.3	0.3	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
T7	Belasco Theater	70.3	71.2	71.2	71.2	71.2	71.5	72.9	73.4	73.4	73.4	71.9	73.8	73.7	74.1	74.1	0.9	0.9	0.9	0.9	2.6	**3.1**	**3.1**	**3.1**	**3.5**	**3.4**	**3.8**	**3.8**
T8	Dorothy Chandler Pavilion	67.2	68.4	68.3	68.4	68.3	67.9	69.5	69.6	69.5	69.6	68.3	69.9	70.2	70.3	70.2	1.2	1.1	1.2	1.1	2.3	2.4	2.3	2.4	2.7	**3.0**	**3.1**	**3.0**

Source: ATS Consulting, January 2016.

Notes:

(a) A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.

(b) Bold red fonts indicate that the predicted noise levels exceed the CEQA thresholds.

	Table 7-20. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA)																												
Receiver ID	Description	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [(a)]				Future (2020) Minus Exist (2014/2015) Noise [(a)]				Future (2040) Minus Exist (2014/2015) Noise [(a)]			
			Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
All Build Alternatives																													
R1	MFR	Broadway /3rd St.	76.2	76.5	76.5	76.5	76.5	76.8	77.6	77.7	77.7	77.7	77.3	78.2	78.5	78.6	78.6	0.3	0.3	0.3	0.3	1.4	1.5	1.5	1.5	2.0	2.3	2.4	2.4
R2	MFR	Broadway /3rd St.	76.2	76.5	76.5	76.5	76.5	76.8	77.5	77.7	77.7	77.7	77.3	78.2	78.4	78.6	78.6	0.3	0.3	0.3	0.3	1.3	1.5	1.5	1.5	2.0	2.2	2.4	2.4
R3	MFR	Broadway /3rd St.	76.2	76.5	76.5	76.5	76.5	76.5	76.9	77.1	77.1	77.1	76.9	77.5	77.8	77.9	77.9	0.3	0.3	0.3	0.3	0.7	0.9	0.9	0.9	1.3	1.6	1.7	1.7
R4	MFR	Broadway /4th St.	74.4	74.7	74.7	74.7	74.7	74.7	75.1	75.2	75.2	75.2	75.1	75.6	75.9	76.0	76.0	0.3	0.3	0.3	0.3	0.7	0.8	0.8	0.8	1.2	1.5	1.6	1.6
R5	MFR	Broadway /5th St.	74.4	74.7	74.7	74.7	74.7	74.7	75.2	75.3	75.3	75.3	75.1	75.7	76.0	76.1	76.1	0.3	0.3	0.3	0.3	0.8	0.9	0.9	0.9	1.3	1.6	1.7	1.7
R6	MFR	Broadway /5th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.2	76.4	76.6	76.6	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.8	2.0	2.2	2.2
R7	MFR	Broadway /5th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.5	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.1	1.3	1.3	1.3	1.7	1.9	2.1	2.1
R8	MFR	Broadway /5th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.2	76.4	76.6	76.6	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.8	2.0	2.2	2.2
R9	MFR	Broadway /6th St.	74.4	74.8	74.8	74.8	74.8	74.9	75.6	75.8	75.8	75.8	75.3	76.1	76.4	76.5	76.5	0.4	0.4	0.4	0.4	1.2	1.4	1.4	1.4	1.7	2.0	2.1	2.1
R10	MFR	Broadway /6th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.4	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
R11	MFR	Broadway /6th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1

Table 7-20. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA)

Receiver ID	Description	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [a]				Future (2020) Minus Exist (2014/2015) Noise [a]				Future (2040) Minus Exist (2014/2015) Noise [a]			
			Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
R12	MFR	Broadway /7th St.	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1
R13	MFR	Broadway /7th St.	75.6	75.9	75.9	75.9	75.9	76.4	77.3	77.5	77.5	77.5	76.9	78.0	78.2	78.3	78.3	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.7	2.7
R14	Hotel	Broadway /7th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.9	77.9	78.2	78.3	78.3	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.3	2.6	2.7	2.7
R15	MFR	Broadway /8th St.	75.6	75.9	75.9	75.9	75.9	76.4	77.3	77.5	77.5	77.5	76.9	78.0	78.2	78.4	78.4	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.8	2.8
R16	MFR	Broadway /9th St.	75.6	76.0	76.0	76.0	76.0	76.3	77.1	77.3	77.3	77.3	76.7	77.7	77.9	78.1	78.1	0.4	0.4	0.4	0.4	1.5	1.7	1.7	1.7	2.1	2.3	2.5	2.5
R17	MFR	Broadway /8th St.	75.6	75.8	75.8	75.8	75.8	76.3	77.1	77.2	77.2	77.2	76.7	77.6	77.8	78.0	78.0	0.2	0.2	0.2	0.2	1.5	1.6	1.6	1.6	2.0	2.2	2.4	2.4
R18	MFR	Broadway /9th St.	75.6	75.9	75.9	75.9	75.9	76.3	77.1	77.3	77.3	77.3	76.7	77.6	77.9	78.0	78.0	0.3	0.3	0.3	0.3	1.5	1.7	1.7	1.7	2.0	2.3	2.4	2.4
R19	MFR	Broadway /9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.1	78.2	78.2	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
R19A	MFR	Broadway /9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.1	78.2	78.2	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.5	2.6	2.6
R20	MFR	Broadway /9th St.	75.6	75.8	75.8	75.8	75.8	76.4	77.3	77.4	77.4	77.4	76.8	77.8	78.0	78.1	78.1	0.2	0.2	0.2	0.2	1.7	1.8	1.8	1.8	2.2	2.4	2.5	2.5
R21	MFR	Broadway /11th St.	75.6	75.8	75.8	75.8	75.8	76.7	77.8	77.9	77.9	77.9	77	78.2	78.5	78.6	78.6	0.2	0.2	0.2	0.2	2.2	2.3	2.3	2.3	2.6	2.9	**3.0**	**3.0**
R22	MFR	11th St./Grand Ave.	65.8	66.9	66.9	66.9	66.9	66.1	66.9	67.4	67.4	67.4	66.5	67.8	67.7	68.1	68.1	1.1	1.1	1.1	1.1	1.1	1.6	1.6	1.6	2.0	1.9	2.3	2.3
R23	MFR	11th	65.8	68.2	68.2	68.2	68.2	66.3	68.5	68.9	68.9	68.9	66.7	69.2	69.1	69.6	69.6	2.4	2.4	2.4	2.4	2.7	**3.1**	**3.1**	**3.1**	**3.4**	**3.3**	**3.8**	**3.8**

Table 7-20. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA)

Receiver ID	Description	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [(a)]				Future (2020) Minus Exist (2014/2015) Noise [(a)]				Future (2040) Minus Exist (2014/2015) Noise [(a)]			
			Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
		St./Hope St.																											
R24	MFR	11th St./Flower St.	65.8	67.2	67.2	67.2	67.2	66.8	68.5	69.0	69.0	69.0	67.2	69.3	69.2	69.6	69.6	1.4	1.4	1.4	1.4	2.7	**3.2**	**3.2**	**3.2**	**3.5**	**3.4**	**3.8**	**3.8**
R25	Hotel	Figueroa/ 11th St.	73.3	73.6	73.6	73.6	73.6	73.5	73.9	74.0	74.0	74.0	74	74.5	74.8	74.9	74.9	0.3	0.3	0.3	0.3	0.6	0.7	0.7	0.7	1.2	1.5	1.6	1.6
R26	Hotel	Figueroa/ Olympic St.	73.3	73.7	73.7	73.7	73.7	73.5	74.0	74.1	74.1	74.1	74	74.5	74.9	74.9	74.9	0.4	0.4	0.4	0.4	0.7	0.8	0.8	0.8	1.2	1.6	1.6	1.6
R27	MFR	Figueroa/ Olympic St.	73.3	73.7	73.7	73.7	73.7	73.5	74.0	74.1	74.1	74.1	74	74.5	74.9	74.9	74.9	0.4	0.4	0.4	0.4	0.7	0.8	0.8	0.8	1.2	1.6	1.6	1.6
R28	MFR	Figueroa/ 9th St.	73.3	73.5	73.5	73.5	73.5	73.5	73.9	73.9	73.9	73.9	74	74.4	74.8	74.8	74.8	0.2	0.2	0.2	0.2	0.6	0.6	0.6	0.6	1.1	1.5	1.5	1.5
R32	MFR	Hill St./5th St.	68.1	68.6	68.6	68.6	68.6	68.5	69.3	69.3	69.3	69.3	68.9	69.7	70.0	70.1	70.1	0.5	0.5	0.5	0.5	1.2	1.2	1.2	1.2	1.6	1.9	2.0	2.0
R33	MFR	Hill St./4th St.	68.1	68.7	68.7	68.7	68.7	68.5	69.3	69.4	69.4	69.4	68.9	69.8	70.1	70.2	70.2	0.6	0.6	0.6	0.6	1.2	1.3	1.3	1.3	1.7	2.0	2.1	2.1
R34	MFR	Hill St./3rd St.	68.1	68.6	68.6	68.6	68.6	68.7	69.7	69.8	69.8	69.8	69.1	70.2	70.5	70.5	70.5	0.5	0.5	0.5	0.5	1.6	1.7	1.7	1.7	2.1	2.4	2.4	2.4
R35	Hotel	Hill St./2nd St.	68.1	69.4	69.4	69.4	69.4	68.7	70.4	70.5	70.5	70.5	69.1	70.8	71.1	71.2	71.2	1.3	1.3	1.3	1.3	2.3	2.4	2.4	2.4	2.7	**3.0**	**3.1**	**3.1**
7th Street Alternatives 2 and 3																													

Table 7-20. CEQA Noise Impact Analysis for Category 2 Land Uses – Ldn (dBA)

Receiver ID	Description	Location	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [a]				Future (2020) Minus Exist (2014/2015) Noise [a]				Future (2040) Minus Exist (2014/2015) Noise [a]			
			Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
R29	Hotel	Figueroa/ 7th St.	71.6	71.9	71.9	71.9	71.9	71.7	72.1	72.1	72.1	72.1	72.2	72.6	73.0	73.0	73.0	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5	1.0	1.4	1.4	1.4
R30	Hotel	7th St./Flower St.	71.6	72.2	72.2	72.0	72.0	71.7	72.2	72.4	72.4	72.2	72.2	72.7	73.1	73.3	73.3	0.6	0.6	0.4	0.4	0.6	0.8	0.8	0.6	1.1	1.5	1.7	1.7
R31	MFR	7th St./Olive St.	71.6	72.2	72.2	72.0	72.0	71.7	72.2	72.4	72.4	72.2	72.2	72.7	73.1	73.3	73.3	0.6	0.6	0.4	0.4	0.6	0.8	0.8	0.6	1.1	1.5	1.7	1.7
9th Street Alternatives 4 and 5																											
R36	MFR	Hope St./Flower St.	72.1	72.4	72.4	72.6	72.6	73.5	75.1	75.1	75.1	75.2	73.8	75.5	75.7	75.7	75.7	0.3	0.3	0.5	0.5	**3.0**	**3.0**	**3.0**	**3.1**	**3.4**	**3.6**	**3.6**	**3.6**
R37	MFR	9th St./Flower St.	72.1	72.3	72.3	72.4	72.4	73.5	75.0	75.0	75.0	75.1	73.8	75.4	75.6	75.6	75.6	0.2	0.2	0.3	0.3	2.9	2.9	2.9	**3.0**	**3.3**	**3.5**	**3.5**	**3.5**
R38	MFR	9th St./Grand Ave.	72.1	72.3	72.3	72.4	72.4	72.9	73.9	73.9	73.9	74.0	73.3	74.4	74.7	74.7	74.7	0.2	0.2	0.3	0.3	1.8	1.8	1.8	1.9	2.3	2.6	2.6	2.6
R39	MFR	Hill St./8th St.	72.1	72.7	72.7	72.7	72.7	72.5	73.4	73.4	73.4	73.4	72.9	73.8	74.1	74.2	74.2	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.3	1.7	2.0	2.1	2.1

Source: ATS Consulting, January 2016.

Notes:

(a) A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.

(b) Bold red fonts indicate that the predicted noise levels exceed the CEQA thresholds.

Table 7-21. CEQA Noise Impact Analysis for Category 3 Land Uses – Ldn (dBA)

Receiver ID	Receiver Name	Existing Year (2014/2015)					Opening Year (2020)					Horizon Year (2040)					2014/2015 With Project Minus Exist (2014/2015) Noise [a]				Future (2020) Minus Exist (2014/2015) Noise [a]				Future (2040) Minus Exist (2014/2015) Noise [a]			
		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 2	Alternative 3	Alternative 4	Alternative 5
I1	Mosk Courthouse	71.6	73.6	73.5	73.6	73.5	71.9	73.9	74.0	73.9	74.0	72.3	74.2	74.6	74.7	74.6	2.0	1.9	2.0	1.9	2.3	2.4	2.3	2.4	2.6	**3.0**	**3.1**	**3.0**
I2	LA Law Library	71.6	72.9	72.8	72.9	72.8	71.8	73.2	73.2	73.2	73.2	72.3	73.5	74.0	74.0	74.0	1.3	1.2	1.3	1.2	1.6	1.6	1.6	1.6	1.9	2.4	2.4	2.4
I2A	Federal Courthouse	71.6	74.5	74.5	74.5	74.5	72.2	75.4	75.5	75.5	75.5	72.6	75.7	76.0	76.1	76.1	2.9	2.9	2.9	2.9	**3.8**	**3.9**	**3.9**	**3.9**	**4.1**	**4.4**	**4.5**	**4.5**
I3	Guadalupe Wedding Chapel	76.2	76.4	76.4	76.4	76.4	76.8	77.5	77.7	77.7	77.7	77.3	78.1	78.4	78.6	78.6	0.2	0.2	0.2	0.2	1.3	1.5	1.5	1.5	1.9	2.2	2.4	2.4
I4	Optometrist	74.4	74.7	74.7	74.7	74.7	74.9	75.6	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.2	1.3	1.3	1.3	1.7	1.9	2.1	2.1
I5	Clinic	74.4	74.7	74.7	74.7	74.7	74.9	75.5	75.7	75.7	75.7	75.3	76.1	76.3	76.5	76.5	0.3	0.3	0.3	0.3	1.1	1.3	1.3	1.3	1.7	1.9	2.1	2.1
I6	Universal Church (Formerly The State Theater)	74.4	74.7	74.7	74.7	74.7	75.2	76.1	76.3	76.3	76.3	75.7	76.8	77.0	77.1	77.1	0.3	0.3	0.3	0.3	1.7	1.9	1.9	1.9	2.4	2.6	2.7	2.7
I7	Optometrist	74.4	74.7	74.7	74.7	74.7	75.1	75.9	76.0	76.0	76.0	75.5	76.4	76.7	76.8	76.8	0.3	0.3	0.3	0.3	1.5	1.6	1.6	1.6	2.0	2.3	2.4	2.4
I8	SIA Tech School	70.3	71.4	71.4	71.4	71.4	70.8	71.6	72.1	72.1	72.1	71.2	72.5	72.4	72.9	72.9	1.1	1.1	1.1	1.1	1.3	1.8	1.8	1.8	2.2	2.1	2.6	2.6
I9	YWCA Job Corps & SIA Tech School	70.3	71.3	71.3	71.3	71.3	70.8	71.6	72.1	72.1	72.1	71.2	72.5	72.4	72.8	72.8	1.0	1.0	1.0	1.0	1.3	1.8	1.8	1.8	2.2	2.1	2.5	2.5
I10	Grammy Museum	70.4	71.0	71.0	71.0	71.0	70.6	71.3	71.4	71.4	71.4	71.1	71.8	72.2	72.3	72.3	0.6	0.6	0.6	0.6	0.9	1.0	1.0	1.0	1.4	1.8	1.9	1.9
I11	Pershing Square	73.1	73.4	73.4	73.4	73.4	73.4	73.9	73.9	73.9	73.9	73.8	74.3	74.7	74.7	74.7	0.3	0.3	0.3	0.3	0.8	0.8	0.8	0.8	1.2	1.6	1.6	1.6
I12	Angels Knoll Park	73.1	73.3	73.3	73.3	73.3	73.5	74.0	74.1	74.1	74.1	73.9	74.5	74.8	74.9	74.9	0.2	0.2	0.2	0.2	0.9	1.0	1.0	1.0	1.4	1.7	1.8	1.8
9th Street Alternatives 4 and 5																												

Table 7-21. CEQA Noise Impact Analysis for Category 3 Land Uses – Ldn (dBA)

13	Grand Hope Park	72.1	72.2	72.4	72.4	73.3	74.6	74.6	74.6	74.7	73.7	75.1	75.4	75.4	75.4	75.3	0.1	0.1	0.3	0.3	2.5	2.5	2.5	2.6	**3.0**	**3.3**	**3.3**	**3.3**
I14	FIDM	72.1	72.2	72.4	72.4	73.3	74.6	74.6	74.6	74.7	73.7	75.1	75.4	75.4	75.4	75.3	0.1	0.1	0.3	0.3	2.5	2.5	2.5	2.6	**3.0**	**3.3**	**3.3**	**3.3**

Source: ATS Consulting, January 2016.

Notes:

(a) A positive number indicates that future noise level due to the Project would increase compared to the existing noise level (2014/2015). A negative number indicates the future noise level would decrease relative to the existing noise level.

(b) Bold red fonts indicate that the predicted noise levels exceed the CEQA thresholds.

7.10 California Environmental Quality Act (CEQA) Determination

The CEQA determination for this Project compares the cumulative effects of the Project added to the existing conditions and to the Opening Year and the Horizon Year.

Applying CEQA guidelines, any vibration or noise impacts identified as a significant impact must be mitigated unless mitigation is infeasible or no abatement measures are available, due to economic, social, environmental, legal, or technological conditions. For the proposed Project, the noise and vibration impact criterion, as defined by FTA for transit and for construction vibration, and FHWA for traffic, was applied as the CEQA threshold for significance.

In conformance with CEQA, the Project's operational noise and operational vibration were evaluated to determine if the Project would cause significant noise or vibration impacts to the environment. The Project's impact analyses concluded that the Project as described, would result in the following:

- Would not expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies
- Would not expose persons to or generate excessive ground-borne vibration or would exceed thresholds of significance for ground-borne noise levels.
- Would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project
- Would not result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project
- The Project would not expose people residing or working in the Project area to excessive noise level.
- Operational noise levels would exceed the CEQA significance thresholds at the Disney Concert Hall. The noise impact at this receiver can be mitigated to a less than significant level by a combination of "low impact" frogs at the turnout track in front of Disney Hall and wheel dampers that would reduce squeal noise at tight radii curves.
- The future noise from the Project (2040) would result in a significant increase in level of more than 3 dBA over the existing levels (2014/2015) at the Disney Concert Hall. The use of "low impact" frogs at the turnout track in front of Disney Hall and rail lubricant or wheel dampers to reduce the wheel squeal and overall Project noise to levels below the CEQA significance threshold.

The future noise from the Project (2040) would result in a significant increase in level of more than 3 dBA over the existing levels (2014/2015) at the Belasco Theater (T7), Apartments at Hope and

11th Streets (R23), Metlofts (R24), Kawada Hotel (R35), Apartments at 7th and Olive Streets (R36), Skyline Apartments (R37), Grand Park (I13), and FIDM (I14). These exceedances are due to the increase in future traffic with the proposed Project. Traffic noise mitigation is not feasible or reasonable at these receivers.

8. POTENTIAL CONSTRUCTION NOISE AND VIBRATION IMPACTS AND MITIGATION

8.1 Construction Noise

The construction of the Project is expected to last for 24 months and the work is anticipated to be sequenced over several stages (Ref. 6). The key steps are:

- Work Zone Staging
- Rail Storage
- Site Preparation and Utility Construction
- Track Construction
- Station Platform Construction
- TPSS Installation
- OCS Installation
- MSF Construction

All construction materials and construction equipment would be stored in the laydown and staging area. Materials would be moved to the staging area during the workday. Three potential locations for the laydown and staging area have been identified. One of the potential locations is adjacent to noise and vibration sensitive receivers between 8th and 9th Streets from Grand Avenue to Olive Street. The primary activity at the laydown staging area is truck movement. It should be noted that selection of the actual laydown area(s) would be determined by the contractor in consultation with the City's Department of Transportation and Bureau of Engineering.

Construction staging area would be located on or near the work zone and would be used to store estimated 80-foot long rail sticks. The delivery of the rail sticks would occur during the workday, although delivery at night or on weekends may occur after prior authorization. The construction staging area would occupy a space approximately 12 feet wide for the length of a city block. The primary activity at the construction staging area would be to facilitate welding of the rail sticks into strings.

At the first stage of construction it may be necessary to prepare the site and relocate, modify, or protect in place all utilities and underground structures that would conflict or interfere with excavation for street level concrete pavement and trackwork. This would include several noisy activities including excavation, backfill of soil and reconstruction of pavement. Equipment typically used for utility relocation work includes diamond saws, pavement breakers, excavators, cranes, generators, rollers, compactors, dump trucks, concrete trucks, welding machines and other construction equipment.

Track construction would involve demolition of the roadway sections being displaced by the guideway, preparation of the track bed, construction of the supporting track slab, laying of the rails, installation of rebar, and pouring of concrete. For special trackwork, welding would be an additional step. Typical equipment employed in track construction include rubber-tired excavators, loaders, graders, bulldozers, concrete trucks, compactors and water trucks. Construction of station platform foundations, restoration of pavement, and reconstruction of any sidewalks and ramps would begin simultaneously or immediately following the track slab within each segment. Once the track is placed, the pavement is restored, and sidewalks and ramps are reconstructed, the closed roadway lanes can generally be reopened to traffic. Equipment used for station platform construction include backhoes, dump trucks, small cranes and concrete trucks.

Construction of TPSS begins with each site cleared and graded. Underground utility connections would be dug and installed, followed by the grounding mat. The foundation would be poured once the utility connections are completed. The TPSS building would be delivered or constructed on-site, mounted on the foundation, and connected to the incoming power supply conduits and outgoing feeder conduits. Fencing or another type of barrier may be installed around the perimeter of the site, and architectural treatments would be applied as feasible. Graders, bobcats, forklifts, flatbed trucks, heavy cranes, and concrete and materials/equipment trucks would be required.

The installation of OCS generally follows the completion of track construction. Finishing for platforms usually overlaps with systems work and is completed prior to final testing and pre-revenue operations. Systems installation work is significantly less disruptive to communities as compared to track construction work. Construction equipment would include cranes, bucket trucks, and other equipment for installation of the wires from the guideway area.

The construction of the MSF generally follows the same sequencing as for the TPSS. The site would be cleared and graded, and underground utility connections would be installed. Following the underground work and site preparation, the pit and foundation would be installed. Structural walls and heavy industrial equipment such as shop cranes, would be installed on the foundation. Once the structure is enclosed, the shop would be finished with mechanical and electrical equipment, plumbing, and furnishings. Construction of the MSF streetcar storage area entails placing tracks and turnouts, paving, installation of OCS poles and construction of security fencing and walls. The construction equipment would consist of backhoes, dump trucks, concrete trucks, flatbed trucks, cranes, and lifts. Other activities such as overhead contact wire, communications and train/traffic signaling, curb, and wire stringing would use a combination of equipment described above. The use of this equipment during Project construction has the potential to result in substantial, yet temporary, increases in local noise levels along the Project alignments. The City of Los Angeles noise ordinance allows construction only between 7 AM to 9 PM on any weekday. Construction noise levels depend on the number of pieces and type of equipment, their general condition, the amount of time each piece operates per day, the presence or lack of noise attenuating features such as walls, and the location of the construction activities relative to the sensitive receivers.

Nighttime construction activities may include but not be limited to the following:

- Concrete pouring which includes concrete trucks entering and leaving the work site.
- Field welding of track and special trackwork.
- Underground utility work in a trench.

These nighttime activities would require a variance to Section 41.40 of the *Los Angeles Municipal Code* for nighttime work scheduled after 9 PM and before 7 AM weekdays, after 6 PM and before 8 AM on Saturdays, and anytime on Sunday.

Table 8-1 shows the maximum noise generated by the construction equipment at 50 feet during the various stages of construction and the estimated duration of construction. Utility relocation and track construction are anticipated to be the loudest stages of construction. Approaches to mitigating the noise impacts are discussed in Section 8.3.

Table 8-1. Construction Activity and Equipment Typical Noise Levels (dBA) at 50 feet

Activity	Duration (months)	Typical Maximum Noise Levels from Construction Equipment at 50 feet, dBA															
		Dozers	Back hoe	Grader	Excavator	Crane	Pavers	Rollers	Generators	Compactor	Welding Machine	Pavement Breaker	Concrete Diamond Saw	Dump Truck	Utility Truck	Water Truck	Concrete Truck
Work zone Staging	24	--	--	--	--	--	--	--	--	--	--	--	--	--	81	--	--
Rail Storage	6-12	--	--	--	--	--	--	--	--	--	74	--	--	76	--	--	--
Site Preparation & Utility Construction	12-18	82	78	85	81	81	80	77	81	83	74	89	90	76	81	75	78
Track Construction	12-18	82	--	85	81	--	--	--	81	83	--	--	--	--	--	75	78
Station Platform Construction	6-12	--	--	--	--	81	--	--	81	--	--	--	--	76	--	--	78
TPSS Installation	3-6	--	--	85	--	81	--	--	81	--	--	--	--	76	--	--	78
OCS Installation	3-6	--	--	--	--	81	--	--	81	--	--	--	--	--	81	--	78
MSF Construction	12-15	--	78	--	--	81	--	--	81	--	--	--	--	76	81	--	78

Sources: FHWA Roadway Construction Noise Model, 2006 (Ref. 9)

HDR Inc., July 2013 (Ref 6)

8.2 Construction Vibration

Some activities, such as compaction, pavement breaking, and the use of excavators, could result in perceptible levels of groundborne vibration. However, these activities would be limited in duration and the vibration levels are likely to be well below thresholds for minor cosmetic building damage.

The FTA damage risk vibration limits are shown in Table **8**-**2**. Construction of the Project would not involve the use of sonic or impact pile drivers and vibratory rollers. Typical Streetcar construction activities such as pavement breaking, soil compaction, use of hoe ram and bulldozer are not expected to generate vibration that approaches the limit in Table **8**-**2**. However, if there are fragile building that are extremely susceptible to vibration damage (Category IV) bulldozers and hoe rams may not be used within 21 feet of the building setback distance.

There is no FTA, state, county, or criteria for assessing the potential annoyance from the use of high-vibration construction equipment such as hoe rams, large bulldozers, jack hammers and load trucks. Using the FTA ground-borne noise impact thresholds, which are intended for the assessment of transit operations and not construction, provides some measure of assessment for annoyance. Within 20 feet of Category 2 land uses and 16 feet of Category 3 land uses the operation of high-vibration construction equipment could potentially exceed the FTA ground-borne noise impact thresholds for annoyance for transit operations (Table 4-5 and Table 4-6) inside the sensitive receivers. However the noise from these construction equipment is more likely to be higher than the groundborne noise generated by the vibration at the interior of these land uses. Since noise from these construction activities are limited to the noise level limits of the Los Angeles Noise Ordinance of 75 dBA during the hours of 7 a.m. to 9 p.m. weekdays the vibration effects would be regarded as less than significant.

The use of hoe rams and bulldozers within 50 feet of “special” land uses such as theaters and concert halls may potentially be audible as groundborne noise on the interior of the buildings. Because the high vibration equipment would be used only intermittently, scheduling its use such that it does not overlap with the timings of the sensitive activities inside these buildings would ensure there are no significant impacts. Implementing additional mitigation measures described in Section 8.4 would further reduce the vibration levels from construction activities.

Table 8-2**. FTA Damage Risk Vibration Criteria**

Building Category	Peak Particle Velocity (PPV), in/sec	Approximated Vibration Level, VdB
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA Guidance Manual, 2006 (Ref. 1)

8.3 Construction Noise Mitigation

Listed below are some typical approaches to reducing noise levels associated with the construction phase of major projects and are otherwise called as best construction practices. Requiring the contractor to employ these methods should leave the contractor with enough flexibility to perform the work without undue financial or logistical burdens while protecting adjacent noise sensitive receivers from excessive construction noise levels.

- Limit nighttime construction to activities and equipment that generate lower noise levels, which may include but not be limited to concrete pouring, field welding, and underground utility as discussed in Section 8.1.
- Use specialty equipment with enclosed engines and/or high-performance mufflers.
- Locate equipment and staging areas as far from noise-sensitive receivers as practicable.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers. This approach can be particularly effective for stationary noise sources such as compressors and generators.
- Route construction related truck traffic away from residential buildings.
- Sequence the use of equipment such that the simultaneous use of the loudest pieces of equipment are avoided as much as practicable.
- Avoid the use of impact equipment and where possible, use non-impact equipment.
- Use portable noise control enclosures for welding in the construction staging area.
- For the construction of TPSS and MSF, the contractor should employ best construction practices described above including the use of temporary noise barrier at the site, enclosures for generators and, where possible, sequencing the construction activities such that the simultaneous used of two or more loudest pieces of equipment at the same location are avoided.

If a noise variance from Section 41.40(a) of the *Los Angeles Municipal Code* is required, a noise limit would be specified. The contractor should employ a combination of the above-listed noise reducing approaches to meet the noise limit. Specific measures to be employed to mitigate construction noise impacts would be developed by the contractor and presented in the form of a Noise Control Plan. The Noise Control Plan would be submitted for review and approval before the beginning of construction activities. Because many of the construction activities would be located in close proximity to noise sensitive receivers, staging the construction to minimize the amount of time that noise producing activities affect specific receivers may be an alternative to using quieter equipment that may extend the exposure to construction activities.

8.4 Construction Vibration Mitigation

Construction related vibration activities are unlikely to exceed the impact thresholds shown in Table **8**-**2**. However, the following vibration mitigation strategies are recommended to minimize the potential for damage to any structures in the corridor:

1. Pre-Construction Survey: The survey would include inspection of building foundations and taking photographs of pre-existing conditions of important and potentially fragile historic resources in the Project area. The survey can be limited to (1) the first row of buildings along the selected alignment and would include the locations of the glass blocks and associated subterranean vaults and (2) buildings within approximately 200 feet of the construction zone that are deemed to be extremely susceptible to vibration. These would be included in the survey.

   Glass blocks and associated subterranean vaults have been identified at the following locations:

   - Million Dollar Theater (301–313 Broadway),
   - Palace Theater (626–636 Broadway),
   - Signer Building (806–808 Broadway), and
   - Blackstone’s Department Store (901 Broadway).

   In addition, glass blocks were previously identified at the following two additional locations:

   - Jewelry Trades Building (500–508 Broadway) and
   - 523–525 Broadway.
2. Vibration Limits: As per the FTA Guidance Manual, the construction vibration shall be limited to the peak particle velocity (PPV) ranging from 0.12 in/sec for “buildings extremely susceptible to vibration damage” to 0.5 in/sec for “Reinforced-concrete, steel or timber” buildings. The contract specifications would establish appropriate damage risk vibration limits for each of the historic properties that are within 200 feet of the construction.

3. Vibration Monitoring: The contractor would be required to monitor vibration at any buildings where the lower vibration limit is applicable and at any location where complaints about vibration are received from building occupants. This would include “special” land uses such as the Disney Concert Hall.

4. If the contractor’s plan calls for high-vibration construction activities being performed close to structures, it may be necessary for the contractor to use alternative procedures that produces lower vibration levels. Examples of high-vibration construction activities include the use of pavement breakers, vibratory compaction, and hoe rams next to sensitive buildings. Alternative

procedures would be to use of non-vibratory compaction in limited areas and concrete saws in place of a jackhammers or pavement breakers for demolition. To avoid potential interference to the “special” land uses from construction vibration, the contractor would be required to coordinate with the building owners to limit the high vibration activities to the duration of the day when there are no sensitive activities inside the building. For example, the contractor may avoid the use of high-vibration equipment during a scheduled performance or recording at the Disney Concert Hall.

The above measures would be sufficient to reduce the vibration from construction activities to below significant levels.

9. REFERENCES

1. Federal Transit Administration Office of Planning and Environment, *Transit Noise and Vibration Impact Assessment*. Document FTA-VA-90-1003-06, May 2006.

2. City of Los Angeles, *L.A. CEQA Thresholds Guide*, I-Noise, 2006.

3. *Los Angeles Municipal Code*, Section 114.02, "Noise Due to Vehicle Engine, Horn and Vehicle Noise".

4. *Los Angeles Municipal Code*, Section 41.40, "Noise Due to Construction, Excavation Work - When Prohibited".

5. CEQA Title 14 *California Code of Regulations*, Chapter 3, Sections 15000 - 15007.

6. "Restoration of Historic Streetcar Service in Downtown Los Angeles, Draft Construction Methods Technical Memorandum", Prepared by HDR, Inc., 17 July 2016.

7. "Tempe Streetcar Environmental Assessment, Noise and Vibration Technical Report", Appendix D and Appendix E, February 2012.

8. "Restoration of Historic Streetcar Service in Downtown Los Angeles, Transportation Technical Study for the Draft EIR", Prepared by Intueor Consulting, Inc., June 2016.

9. Federal Highway Administration Office of Planning and Environment, *Roadway Construction Noise Model User's Guide*. Document FHWA-HEP-05-054, January 2006.

Appendix J
Restoration of Historic Streetcar Service in Downtown Los Angeles—Transportation Technical Study

RESTORATION OF HISTORIC STREETCAR SERVICE IN DOWNTOWN LOS ANGELES

Transportation Technical Study
for the Environmental Impact Report

Prepared for:
HDR Engineering, Inc.

Prepared by:
Intueor Consulting, Inc.

INTUEOR
MAXIMIZING VALUE

June 2016

Table of Contents

CHAPTER 1 – INTRODUCTION **1**
1.1 Background **1**
1.2 Project Alternatives **1**
1.2.1 Alternative 1 – No Project Alternative 2
1.2.2 Alternative 2 – 7th Street Alternative With Grand Avenue Extension 2
1.2.3 Alternative 3 – 7th Street Alternative Without Grand Avenue Extension 2
1.2.4 Alternative 4 – 9th Street Alternative With Grand Avenue Extension 2
1.2.5 Alternative 5 – 9th Street Alternative Without Grand Avenue Extension 2
1.3 Elements of the Streetcar Alternatives **2**
1.3.1 Vehicles 2
1.3.2 Platforms 3
1.4 Support Facilities **10**
1.4.1 Overhead Contact System 10
1.4.2 Traction Power Substations 10
1.4.3 Maintenance and Storage Facility 10
1.4.4 Signaling 11
1.4.5 Potential Layover Locations 11
1.5 Construction Activities **12**
CHAPTER 2 – METHODOLOGY **13**
2.1 Study Intersections **13**
2.2 Regulatory Setting **17**
2.3 Analytical Tools and Data Sources **18**
2.3.1 Intersection Volumes 18
2.3.2 Traffic Analysis Scenarios 18
2.3.3 Intersection Level of Service Methodology 19
2.3.4 Threshold for Significant Impact 19
2.3.5 Streetcar Characteristics 20
2.3.6 Background Traffic Forecasts 22
CHAPTER 3 – AFFECTED ENVIRONMENT **24**
3.1 Public Transit **24**
3.1.1 Metro 24
3.1.2 LADOT 25
3.2 Streets and Highways **31**
3.2.1 Roadway Network 31
3.2.2 Planned Projects Affecting Roadway Capacity 32
3.2.3 Study Intersections and Existing Levels of Service 36
3.3 Parking **40**
3.4 Other Modes **43**
3.4.1 Pedestrians 43
3.4.2 Bicycles 43
CHAPTER 4 – ENVIRONMENTAL IMPACTS **45**
4.1 Public Transit **45**
4.1.1 Existing Conditions 45
4.1.2 Opening Year (2020) 45
4.1.3 Horizon Year (2040) 46

4.2 Streets and Highways **47**
4.2.1 Existing (2014/2015) Conditions 49
4.2.2 Opening Year (2020) 73
4.2.3 Horizon Year (2040) 102
4.3 Parking **131**
4.4 Pedestrian and Bicycle Facilities **132**
4.5 Construction Phase **135**
4.5.1 Public Transit 135
4.5.2 Streets and Highways 135
4.5.3 Parking 136
4.5.4 Pedestrian and Bicycle Facilities 136
CHAPTER 5 – PROJECT IMPROVEMENTS AND DESIGN ELEMENTS **137**
5.1 Project Improvements and Project Design Elements **137**
5.2 Additional Design Elements **138**
CHAPTER 6 – MITIGATION MEASURES **140**
6.1 Mitigation Measures **140**
6.1.1 Existing (2014/2015) With Project 140
6.1.2 Opening Year (2020) With Project 142
6.1.3 Horizon Year (2040) With Project 144
6.2 Construction Phase Mitigation **147**
6.2.1 Public Transit 147
6.2.2 Streets and Highways 147
6.2.3 Parking 148
6.2.4 Pedestrian and Bicycle Facilities 148
6.3 Impacts Remaining After Mitigation **149**
CHAPTER 7 – REFERENCES **150**

List of Tables

Table 2-1: Signalized Intersections – LOS Definitions 19
Table 2-2: Intersection Significance Thresholds 20
Table 3-1: Metro Bus Routes within the Study Area 27
Table 3-2: Existing (2014/2015) Intersection LOS Analysis 39
Table 3-3: Existing On-Street Parking Inventory and Conditions 41
Table 4-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis 52
Table 4-2: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 54
Table 4-3: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 56
Table 4-4: Existing (2014/2015) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis 60
Table 4-5: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 60
Table 4-6: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 60
Table 4-7: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis 64
Table 4-8: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 66
Table 4-9: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (20014/2015) With and Without Project) 68
Table 4-10: Existing (2014/2015) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis 72
Table 4-11: AM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 72
Table 4-12: PM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project) 72
Table 4-13: Opening Year (2020) Without Project Intersection LOS Analysis 76
Table 4-14: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis 81
Table 4-15: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) 83
Table 4-16: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) 85
Table 4-17: Opening Year (2020) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis 89
Table 4-18: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) 89
Table 4-19: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) 89
Table 4-20: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis 93
Table 4-21: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) 95

Table 4-22: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) ... 97
Table 4-23: Opening Year (2020) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis ... 101
Table 4-24: AM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) ... 101
Table 4-25: PM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project) ... 101
Table 4-26: Horizon Year (2040) Without Project Intersection LOS Analysis ... 105
Table 4-27: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis ... 110
Table 4-28: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 112
Table 4-29: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 114
Table 4-30: Horizon Year (2040) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis ... 118
Table 4-31: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 118
Table 4-32: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 118
Table 4-33: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis ... 122
Table 4-34: AM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 124
Table 4-35: PM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 126
Table 4-36: Horizon Year (2040) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis ... 130
Table 4-37: AM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 130
Table 4-38: PM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project) ... 130
Table 4-39: On-Street Parking for Future Conditions ... 133
Table 6-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 140
Table 6-2: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 142
Table 6-3: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 143
Table 6-4: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 144
Table 6-5: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 145
Table 6-6: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service ... 146

List of Figures

Figure 1-1: Regional Location Map ... 4
Figure 1-2: Proposed Downtown Los Angeles Streetcar Route ... 5
Figure 1-3: Typical Cross-Sections along the Streetcar Alignment ... 6
Figure 2-1: Existing Intersection Lane Configuration ... 15
Figure 3-1: Metro Rail and Bus Service in Downtown Los Angeles ... 26
Figure 3-2: DASH Service in Downtown Los Angeles ... 29
Figure 3-3: Commuter Express Service Map ... 30
Figure 3-4: Future Intersection Lane Configuration Without Project ... 34
Figure 3-5: Existing (2014/2015) AM/PM Peak Hour Traffic Volumes ... 37
Figure 4-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 50
Figure 4-2: Existing (2014/2015) – 7th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 59
Figure 4-3: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 62
Figure 4-4: Existing (2014/2015) – 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 71
Figure 4-5: Opening Year (2020) Without Project AM/PM Peak Hour Traffic Volumes ... 74
Figure 4-6: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 79
Figure 4-7: Opening Year (2020) – 7th Street Alternative without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 88
Figure 4-8: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 91
Figure 4-9: Opening Year (2020) – 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 100
Figure 4-10: Horizon Year (2040) Without Project AM/PM Peak Hour Traffic Volumes ... 103
Figure 4-11: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 108
Figure 4-12: Horizon Year (2040) – 7th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 117
Figure 4-13: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 120
Figure 4-14: Horizon Year (2040) – 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes ... 129

List of Appendices

Appendix A: Intersection Turning Movement Counts
Appendix B: List of Related Projects
Appendix C: Existing (2014/2015) Without Project HCM Analysis Output
Appendix D: Existing (2014/2015) With 7th Street Alternative HCM Analysis Output
Appendix E: Existing (2014/2015) With 9th Street Alternative HCM Analysis Output
Appendix F: Opening Year (2020) Without Project HCM Output
Appendix G: Opening Year (2020) With 7th Street Alternative HCM Analysis Output
Appendix H: Opening Year (2020) With 9th Street Alternative HCM Analysis Output
Appendix I: Horizon Year (2040) Without Project HCM Analysis Output
Appendix J: Horizon Year (2040) With 7th Street Alternative HCM Analysis Output
Appendix K: Horizon Year (2040) With 9th Street Alternative HCM Analysis Output
Appendix L: Speed Improvement Study

Chapter 1 – Introduction

This report, which focuses on the evaluation and analysis of potential impacts to the transportation environment, is one of a series of technical studies prepared in support of the Environmental Impact Report (EIR) for the Restoration of Historic Streetcar Service in Downtown Los Angeles (Project). The analysis evaluates transportation impacts due to the proposed Project on public transit, streets and highways, parking, and other modes such as pedestrians and bicycles. This report summarizes the existing and future conditions of the transportation environment due to the proposed alignment alternatives for the streetcar project. Chapter 1 of this report presents a background of the proposed Project and outlines the alternatives being considered for evaluation. Chapter 2 describes the analysis methodology and criteria of significance. Chapter 3 presents each component of the affected environment. Chapter 4 evaluates the affected transportation environment for each one of its components, which consists of public transit, streets and highways, parking, pedestrians, and bicycles. This chapter also assesses the environmental impacts for each alternative being considered. Chapter 5 describes the proposed project improvements and design elements. Finally, Chapter 6 identifies potential feasible mitigation measures due to significant operational and construction impacts, if any, based on the difference between the No Project and the proposed Project exceeding the significance thresholds criteria.

1.1 BACKGROUND

The Project consists of the construction and operation of streetcar service in downtown Los Angeles, California, along an up to 3.8-mile route. The Project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street. The Project route would cover an area composed primarily of commercial land uses with a mix of residential, public, and entertainment land uses. The Project would link several neighborhoods or districts within the Central City Community Plan Area of the City of Los Angeles: Civic Center, Bunker Hill, Historic Core, Jewelry District, Financial Core, South Park, Fashion District, and LA Live/Convention Center.

The proposed project is intended to fulfill the following objectives: (1) support growth and revitalization of downtown Los Angeles; (2) enhance mobility and transit circulation in the downtown Los Angeles area; (3) create pedestrian oriented amenities that are interconnected with sidewalks and public space; and (4) protect and improve aspects of the downtown core.

Figure 1-1 depicts the regional location of the Project. **Figure 1-2** shows the Project's routing within Downtown Los Angeles.

1.2 PROJECT ALTERNATIVES

Five project alternatives are being considered; these include four build alternatives for the proposed Project and a No Project Alternative. The streetcar alignment would run along several downtown streets. Typical conceptual cross-sections at mid-block locations for these streets are shown in **Figure 1-3**. Each of these alternative alignments is described in the following sections below.

1.2.1 Alternative 1 – No Project Alternative

The No Project Alternative, which is required by Section 15126.6(e) of the State CEQA Guidelines, represents conditions in the Project study area that would remain if the proposed Project would not occur.

1.2.2 Alternative 2 – 7th Street Alternative With Grand Avenue Extension

The 7th Street with Grand Avenue Extension Alternative would construct and implement streetcar service along an alignment that would begin on Grand Avenue north of 2nd Street adjacent to the Disney Concert Hall, then continue northward until turning east on 1st Street. From 1st Street, the streetcar would turn south on Broadway, traveling to 11th Street where it would turn west and continue on to Figueroa Street. The streetcar would then turn north on Figueroa Street and travel to 7th Street, where it would turn east. From 7th Street, the streetcar would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue.

1.2.3 Alternative 3 – 7th Street Alternative Without Grand Avenue Extension

Alternative 3 would follow the same alignment as Alternative 2, with the exception that the Grand Avenue Extension would not be incorporated. Therefore, Hill and 1st Streets would be the terminal point, rather than Grand Avenue north of 2nd Street.

1.2.4 Alternative 4 – 9th Street Alternative With Grand Avenue Extension

The 9th Street with Grand Avenue Extension Alternative would follow the same alignment as the 7th Street with Grand Avenue Extension Alternative, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street, and the Project alignment would still begin and terminate on Grand Avenue, north of 2nd Street.

1.2.5 Alternative 5 – 9th Street Alternative Without Grand Avenue Extension

Alternative 5 would follow the same alignment as Alternative 3, but it would run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street.

1.3 ELEMENTS OF THE STREETCAR ALTERNATIVES

A brief overview of the elements common to all build alternatives of the Project is presented below.

1.3.1 Vehicles

The Project's operating plan calls for approximately 7-minute headways (i.e., time spacing between vehicles) during peak periods. A fleet of six electrically powered streetcars is currently estimated to be needed to operate on the system. An estimated two additional streetcars would serve as backup vehicles to the operating fleet, for a total estimated fleet size of eight vehicles. Each vehicle would measure between 65 and 85 feet long and be approximately 13 feet high. The streetcars would be articulated to make tight turns and have a capacity of approximately 100 passengers. The streetcars would be similar to the modern streetcar models that are currently used in other cities in the United States. Examples of similar streetcars can be found in Portland, Oregon; both Tacoma and Seattle, Washington; Tucson, Arizona; Dallas, Texas; Atlanta, Georgia; and Charlotte, North Carolina. The streetcars would be designed with low floors to be compliant with the *Americans with Disabilities Act* (ADA). Operating speeds would be at the maximum posted downtown speed limit, which is currently 25 miles per hour (mph) on all streets other than Figueroa Street, between 5th Street and Pico Boulevard, where it is 30 mph. Power for the streetcars would be transmitted by overhead catenary wires supported by poles along the streetcar tracks.

1.3.2 Platforms

The streetcars would make stops at approximately 25 platforms along the alignment; the number of platforms is subject to change based upon further design of the Project. With varying configurations, the platforms would generally consist of a raised concrete pad approximately 8 feet wide by 70 feet long. Some of the streetcar platforms would be shared by buses operated by Metro, LADOT DASH, and other regional operators. Shared platforms would generally be approximately 120 feet long, though physical constraints on some street segments could limit them to shorter lengths. The maximum curb height would be approximately 8 to 14 inches. Platforms could be located either in the center of the roadway or adjacent to the sidewalk, along the curb. Platforms would transition from the sidewalk to match or nearly match the floor height of the streetcar vehicles. Platforms would be designed and constructed to connect to the sidewalk in a way that meets ADA and building access requirements.

Figure 1-1: Regional Location Map

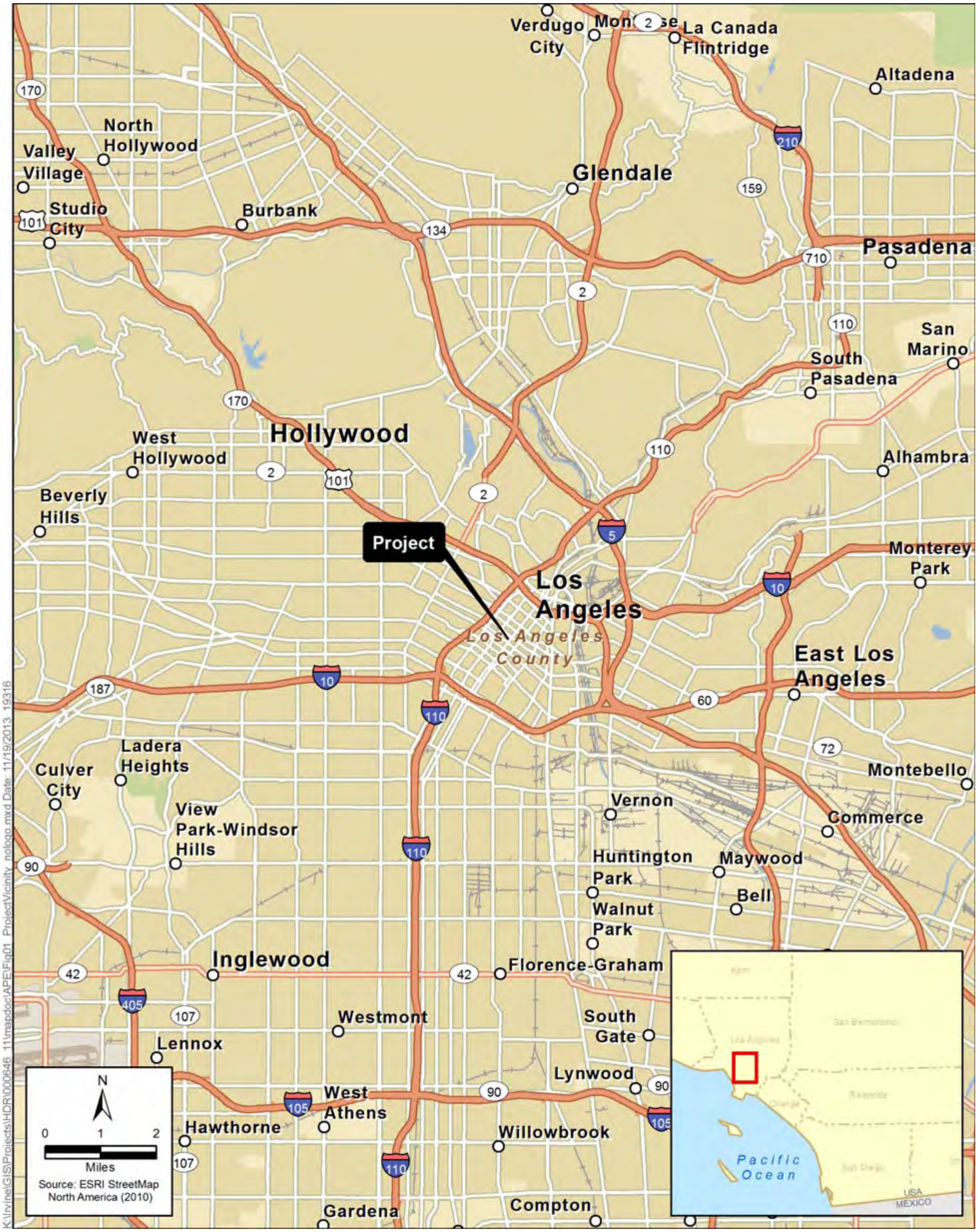


Figure 1-2: Proposed Downtown Los Angeles Streetcar Route

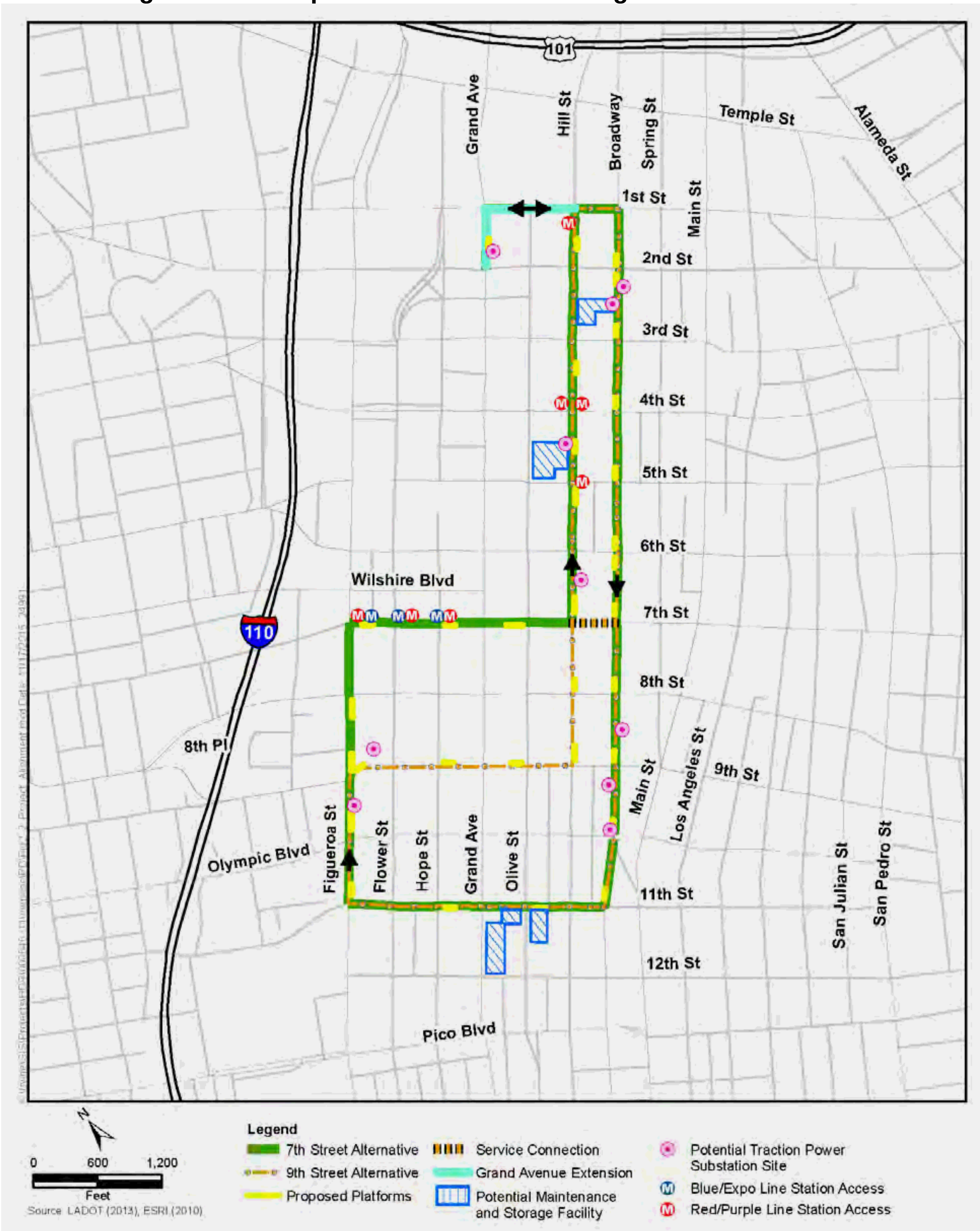


Figure 1-3: Typical Cross-Sections along the Streetcar Alignment

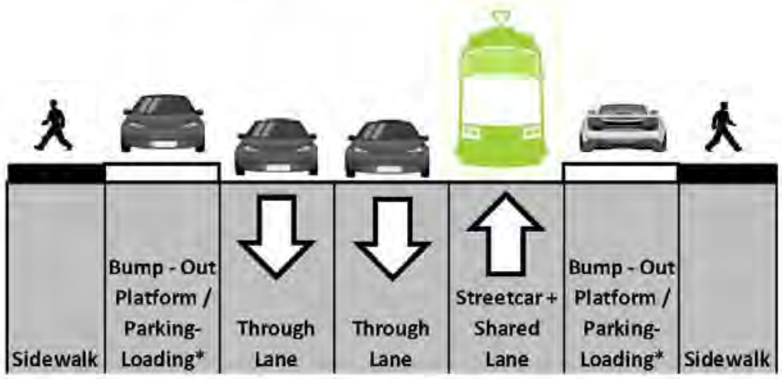
1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

Figure 1-3: Typical Cross-Sections along the Streetcar Alignment (continued)

3 Broadway 310 feet north of 3rd Street

(Between 2nd St & 3rd St looking SW)



1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

* There will be parking and/or loading spaces in those areas between the bump-out platforms

4 11th Street 65 feet west of Olive Street

(Between Olive St & Grand Ave looking NW)

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

* There will be parking and/or loading spaces in those areas between the bump-out platforms

Figure 1-3: Typical Cross-Sections along the Streetcar Alignment (continued)

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

* There will be parking and/or loading spaces in those areas between the bump-out platforms

Figure 1-3: Typical Cross-Sections along the Streetcar Alignment (continued)

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

* There will be parking and/or loading spaces in those areas between the bump-out platforms

1. These are future baseline conditions that reflect related projects to be implemented prior to the construction of the Project
2. These are conceptual mid-block sections to be further evaluated during final design
3. Not to scale

* There will be parking and/or loading spaces in those areas between the bump-out platforms

1.4 SUPPORT FACILITIES

1.4.1 Overhead Contact System

There are two potential configurations for the OCS contact wires, which would supply electrical power to the streetcar vehicles. One configuration would be to support the contact wire with a span wire between two poles located on either side of the street, perpendicular to the streetcar track. Another configuration would support the contact wire from cantilever arms connected to single poles. Configurations would be site-specific and be made based upon engineering design and aesthetic considerations. Either of these configurations could use decorative poles chosen to be consistent with the streetscape along the Project alignment. It is possible that poles used for delivering streetcar power could also be integrated with other streetscape infrastructure such as street lighting, traffic signals, or traffic signs. OCS suspension at corner turning locations (e.g., Hill/1st Streets, 1st Street/ Broadway, Broadway/11th Street, 11th/Figueroa Streets, Figueroa/9th or /7th Streets, 9th/ or 7th/Hill Streets) would be more specialized and tailored to each location, possibly requiring a combination of wire-mounting configurations. OCS poles would be approximately 25 to 30 feet tall and would be typically installed at intervals of about 80 to 120 feet, with added poles at turns. Wire heights above the tracks would typically range between approximately 18 and 19 feet in the public right-of-way.

1.4.2 Traction Power Substations

The streetcars would be powered by an estimated five TPSS units spaced relatively evenly throughout the alignment to provide Direct Current (DC) power for the streetcars; the final number and placement will be determined by further Project design. Each unit would be a durable structure containing electrical and electronic equipment. Based on typically-sized equipment used in other cities, the TPSS units would most likely measure approximately 17 feet long by 11 feet wide by 11 feet high, although these dimensions could vary. The footprint needed for the TPSS installations could be up to approximately 250 square feet. The substations, typically rated at 350 kilowatts, would convert 480-volt commercial Alternating Current (AC) power to 750-volt DC power for the streetcars.

Each TPSS would typically be placed in an off-street location, such as a parking lot or other suitable site. At one location, 2nd Street and Grand Avenue, the currently recommended potential TPSS site may need to occupy space in the public right-of-way. A number of potential TPSS locations and alternate sites are being evaluated in the event that primary sites are found to be infeasible

1.4.3 Maintenance and Storage Facility

The Project would require an MSF to provide a location for secure storage of streetcar vehicles when they are not in operation, and regular light maintenance of the vehicles to keep them clean and in good operating condition.

Four sites are currently being considered as a potential location for the MSF: (1) the southwest corner of 11th and Olive Streets; (2) the southeast corner of 11th and Olive Streets; (3) the northwest corner of Hill and 5th Streets; or (4) the west side of Broadway between 2nd and 3rd Streets. All four candidate sites are currently being used as parking lots. The MSF would consist of an enclosed building and an outdoor area where routine inspections, maintenance work, and light repairs could be performed. The facility would have sufficient storage capacity to handle the needs of the streetcar system, with paved maintenance aisles, a pit track, overhead crane, paved truck access, staff offices, parts storage areas, and a machine shop. An employee parking area may also be provided. A maintenance building for a system of the size of the Project would generally be 12,000 to 18,000 square feet, approximately two to three stories tall, contain tracks inside a garage enclosure for maintenance of the vehicles, and be constructed to comply with the City's Green Building Code and also meet minimum Leadership in Energy & Environmental Design (LEED) certification requirements. Acquisition of private property for the MSF site would be required. Streetcars would gain access to the facility from a short segment of track that would be connected to the mainline. A storage area outside of the maintenance facility would provide an area for overnight cleaning (i.e., wash facility with clarifier) and secure storage of streetcar vehicles.

1.4.4 Signaling

Streetcar movement would be governed by "line-of-sight" operations, with passage through intersections controlled by traffic signals. "Line-of-sight" operations means that streetcars would be controlled by an operator who would proceed when traffic signals and traffic allow, and who would stop for traffic signals, station stops, pedestrians, bicycles, and other vehicles. A separate signal head may be provided at intersections for streetcar control. The streetcar control signal would be interconnected with the traffic signals and would clearly indicate to the streetcar operator when it is clear for the streetcar to move or required to stop.

Transit signals (i.e., special signals separated from the general purpose signal system) would be necessary where the streetcar would require a special traffic signal phase to maneuver so as to avoid conflicts with general traffic. These signals are also required at locations where a track switch is used by the streetcar operator to choose between different paths. Most of the route for the proposed Project would not have separate transit signals. Where they are needed, operation of transit signals would be separated from the normal traffic signals in order to not confuse the general public.

1.4.5 Potential Layover Locations

Locations on the streetcar route are needed to provide space for a streetcar to layover out of traffic, to allow dispatch according to a regular schedule, or to provide space for a streetcar to be temporarily taken out of service. In addition, these locations would allow the streetcar operator to take a short break. For the route currently proposed, two such locations would be desirable.

Under the Grand Avenue Extension (Alternatives 2 and 4), at the stop on Grand Avenue north of 2nd Street, a single track in an exclusive median is currently proposed. This configuration would allow the streetcars to complete their round trip and layover out of traffic for several minutes until the next scheduled departure. The streetcar vehicles would have operator cabs on both ends of the cars so that they would be able to operate in either direction of travel.

In addition to the Grand Avenue location, four other locations have currently been identified as potential second layover sites. Should Alternative 3 or 5 be ultimately selected, two of these locations may be needed. At each of these locations, a short section of parallel track would need to be provided to allow space for the streetcar to move off the main line while the layover is taking place. These sites include (a) Broadway, near-side at 2nd Street; (b) Broadway, far-side at 2nd Street; (c) Broadway, mid-block between 2nd and 3rd Streets; and (d) 11th Street, near-side at Hill Street.

All of the above currently considered layover locations are being evaluated as part of further design advancement of the Project, and are therefore subject to change with regard to location and/or track layout.

1.5 CONSTRUCTION ACTIVITIES

Construction activities associated with the Project would affect portions of Grand Avenue, 1st Street, Broadway, 11th Street, Figueroa Street, 7th Street or 9th Street, and Hill Street, as well as the selected MSF and TPSS sites. Construction activities would include: (a) pavement removal, (b) utility relocation, (c) excavation, (d) construction of track drains, (e) installation of concrete track slab and rails, (f) construction of station platforms, (g) installation of special track work units, (h) reconstruction of ramps and sidewalks, (i) paving, and (j) striping. Other activities would include installation of specialty system work, such as traction power, overhead contact wire, communications systems, train/traffic signaling, and OCS pole foundations.

Laydown and storage area(s) for construction would be established near the Project alignment and would be used for storage of equipment and materials. The laydown and storage area(s) could be located within the right-of-way, in parking lots, or on vacant land, and would be used to store equipment and materials. Four potential laydown and storage areas have currently been identified for evaluation: (1) the southeast corner of 3rd Street and Main Street; (2) northeast corner of 3rd Street and Spring Street; (3) 243 S. Spring Street; and (4) Grand Avenue to Olive Street, between 8th and 9th Streets. These should be regarded as example sites; other locations within the study area may become available and could also be chosen. All four example locations are currently being used as parking lots adjoining City streets within one block of the Project alignment.

Project construction activities would typically take place on weekdays between 7 a.m. and 9 p.m., in accordance with *Los Angeles Municipal Code* (LAMC) 41.40(a). To expedite construction, certain construction activities may be permitted to occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak periods (i.e., 6 a.m. to 9 a.m. and 3:30 p.m. to 7 p.m.) in accordance with Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406, which provide an exemption to the rush hour roadway construction prohibition for major public works projects having traffic mitigation plans. Construction activities will be required to follow the City Planning Department's new policy (in effect June 2015) to maintain safe adjacent pedestrian access at all times during construction.

The analysis in this document assumes that, unless otherwise stated, the Project would be designed, constructed, and operated following all applicable laws, regulations, ordinances, and formally adopted City standards, including but not limited to the LAMC; LADOT design standards and special provisions; California Manual on Uniform Traffic Control Devices; and all City bureaus' design manuals, special provisions, and standard plans, including the latest Standard Specification for Public Works Construction (SSPWC or Greenbook); the City of Los Angeles Department of Public Works, Bureau of Engineering (LABOE) Brown Book; the *Work Area Traffic Control Handbook*; and any Federal Transit Administration (FTA) requirements.

Chapter 2 – Methodology

This chapter describes the methodology and assumptions used to evaluate and analyze the potential effect on the transportation environment due to the Restoration of Historic Streetcar Service in Downtown Los Angeles Project. The following sections describe how the proposed Project would affect the various transportation modes including streets and highways, public transit, parking, and other modes such as pedestrians and bicycles.

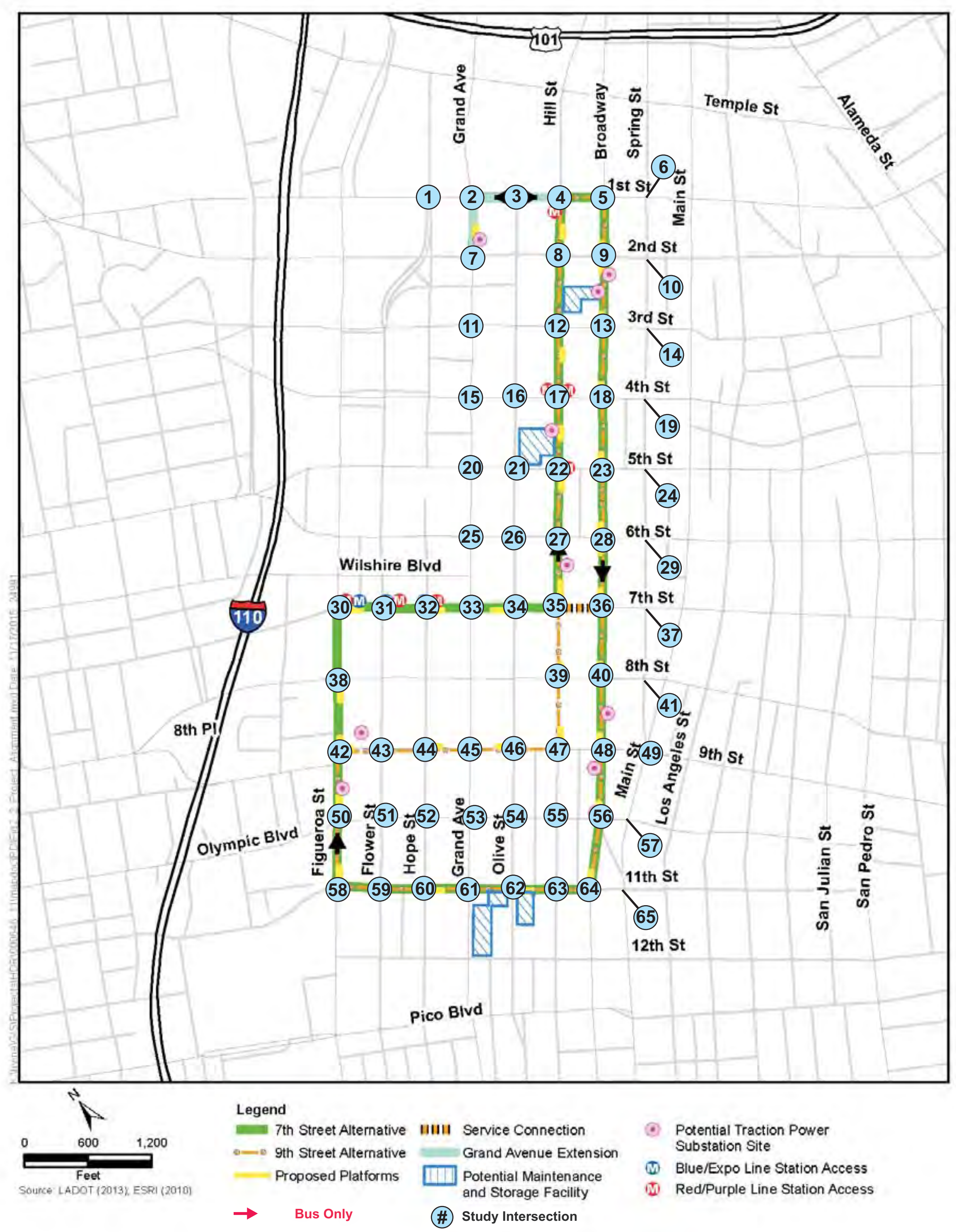
2.1 STUDY INTERSECTIONS

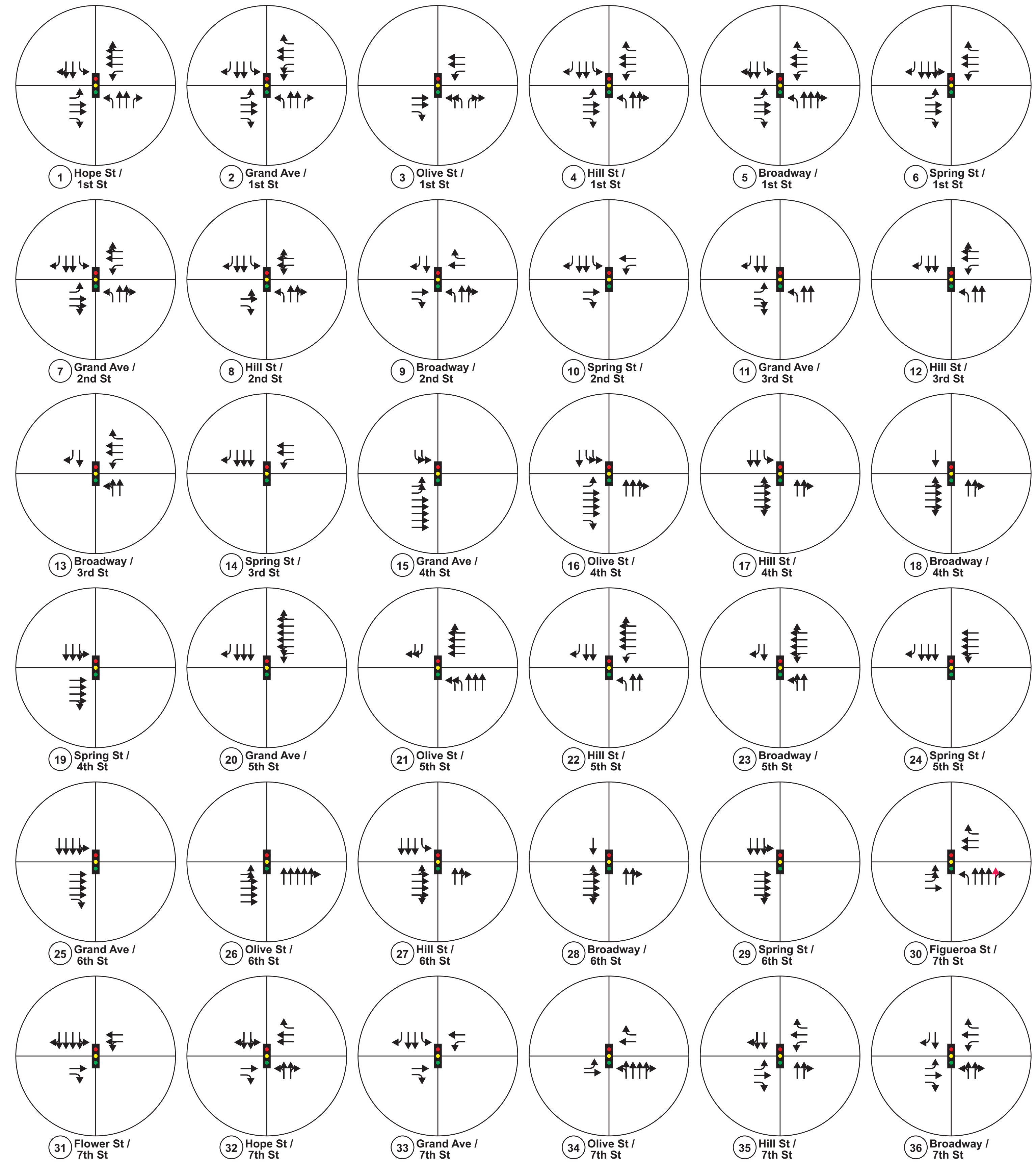
A list of intersection locations to be studied was identified at the beginning of the proposed Project scoping process and reviewed by LADOT to gain concurrence. The list consisted of 65 intersection locations, which make up the study area for the purposes of this traffic study. These intersections are located along the streetcar alignment and along adjacent parallel roadways that are one block away from the alignment. Intersections located along adjacent parallel roadways that are one block away from the alignment were included to capture potential traffic diversions (as noted in Section 3.2.2) that may occur due to the reduction in roadway capacity along the alignment and the proposed turn restrictions along Broadway due to the implementation of the *Broadway Streetscape Master Plan* (BSMP). It should be noted that the reduction in roadway capacity is due to other programmed public improvement projects that are not a part of this Project and will be in place prior to the construction of this Project. These other programmed public improvement projects and their specific roadway capacity reductions are presented in Section 3.2.2. The study intersections that were evaluated in this traffic study are as follows:

1. Hope Street / 1^{st} Street
2. Grand Avenue / 1^{st} Street
3. Olive Street / 1^{st} Street
4. Hill Street / 1^{st} Street
5. Broadway / 1^{st} Street
6. Spring Street / 1^{st} Street
7. Grand Avenue / 2^{nd} Street
8. Hill Street / 2^{nd} Street
9. Broadway / 2^{nd} Street
10. Spring Street / 2^{nd} Street
11. Grand Avenue / 3^{rd} Street
12. Hill Street / 3^{rd} Street
13. Broadway / 3^{rd} Street
14. Spring Street / 3^{rd} Street
15. Grand Avenue / 4^{th} Street
16. Olive Street / 4^{th} Street
17. Hill Street / 4^{th} Street
18. Broadway / 4^{th} Street
19. Spring Street / 4^{th} Street
20. Grand Avenue / 5^{th} Street
21. Olive Street / 5^{th} Street
22. Hill Street / 5^{th} Street
23. Broadway / 5^{th} Street
24. Spring Street / 5^{th} Street
25. Grand Avenue / 6^{th} Street
26. Olive Street / 6^{th} Street
27. Hill Street / 6^{th} Street
28. Broadway / 6^{th} Street
29. Spring Street / 6^{th} Street
30. Figueroa Street / 7^{th} Street
31. Flower Street / 7^{th} Street
32. Hope Street / 7^{th} Street
33. Grand Avenue / 7^{th} Street
34. Olive Street / 7^{th} Street
35. Hill Street / 7^{th} Street
36. Broadway / 7^{th} Street
37. Spring Street / 7^{th} Street
38. Figueroa Street / 8^{th} Street
39. Hill Street / 8^{th} Street
40. Broadway / 8^{th} Street
41. Spring Street / 8^{th} Street
42. Figueroa Street / 9^{th} Street
43. Flower Street / 9^{th} Street
44. Hope Street / 9^{th} Street
45. Grand Avenue / 9^{th} Street
46. Olive Street / 9^{th} Street
47. Hill Street / 9^{th} Street
48. Broadway / 9^{th} Street

49. Spring Street / 9th Street
50. Figueroa Street / Olympic Boulevard
51. Flower Street / Olympic Boulevard
52. Hope Street / Olympic Boulevard
53. Grand Avenue / Olympic Boulevard
54. Olive Street / Olympic Boulevard
55. Hill Street / Olympic Boulevard
56. Broadway / Olympic Boulevard
57. Main Street / Olympic Boulevard
58. Figueroa Street / 11th Street
59. Flower Street / 11th Street
60. Hope Street / 11th Street
61. Grand Avenue / 11th Street
62. Olive Street / 11th Street
63. Hill Street / 11th Street
64. Broadway / 11th Street
65. Main Street / 11th Street

The location and existing lane configuration for each listed intersection is illustrated in **Figure 2-1**. It should be noted that as part of the Speed Improvement Analysis, field observations were performed over a 2-day period in August 2015 to observe traffic operating conditions and to collect and verify the latest intersection lane configurations. In order to maintain consistency with the collected traffic volume data and recognizing the current lane configuration changes that are continuously taking place within the downtown Los Angeles area, it was assumed that existing lane configurations and associated existing signal timings, as of August 2015, would be used for the existing (2014/2015) traffic operating conditions. Lane configuration changes that take place after August 2015 would be assumed to be in place in the Opening Year (2020) prior to the inclusion of the proposed streetcar project (No Project Alternative).

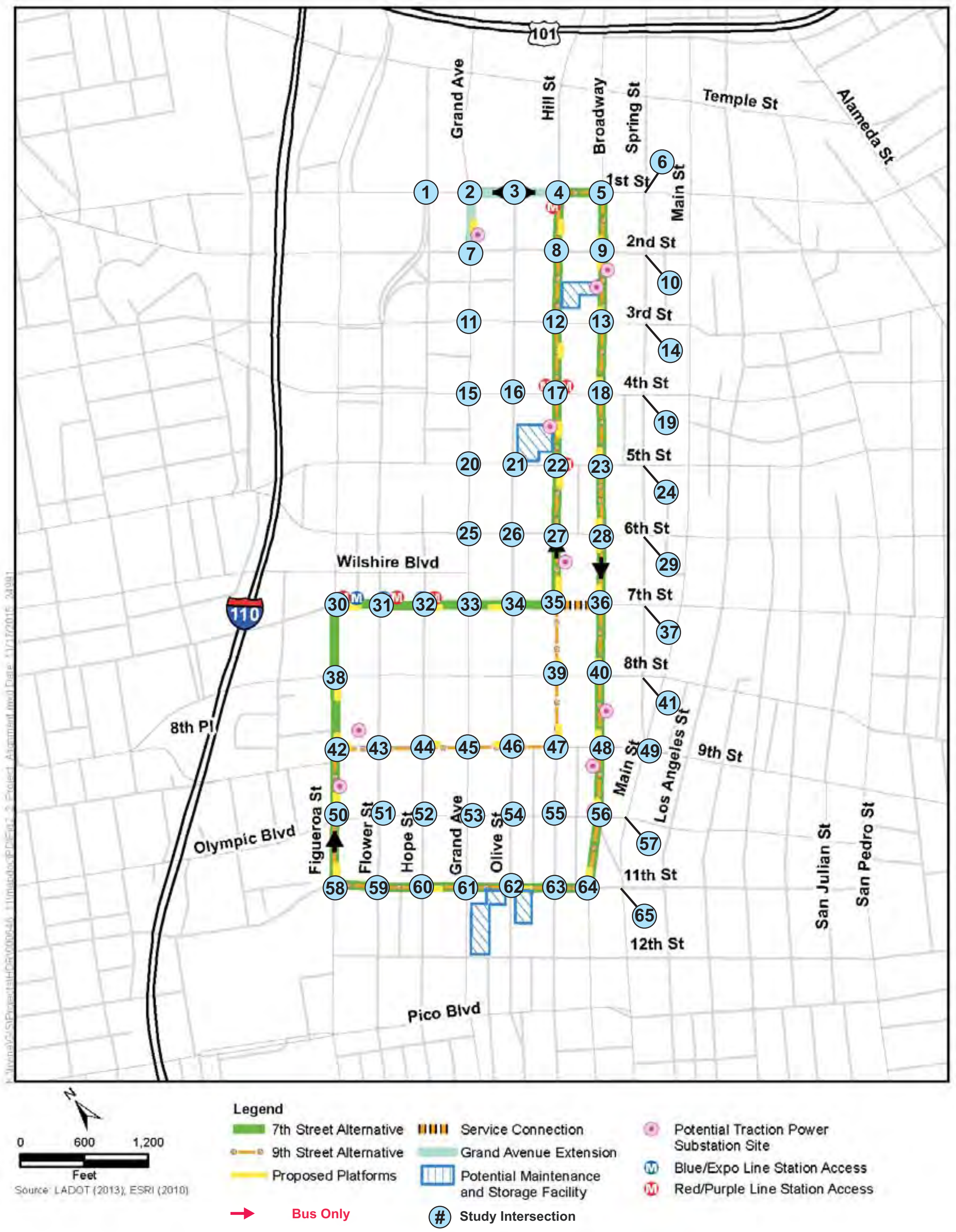




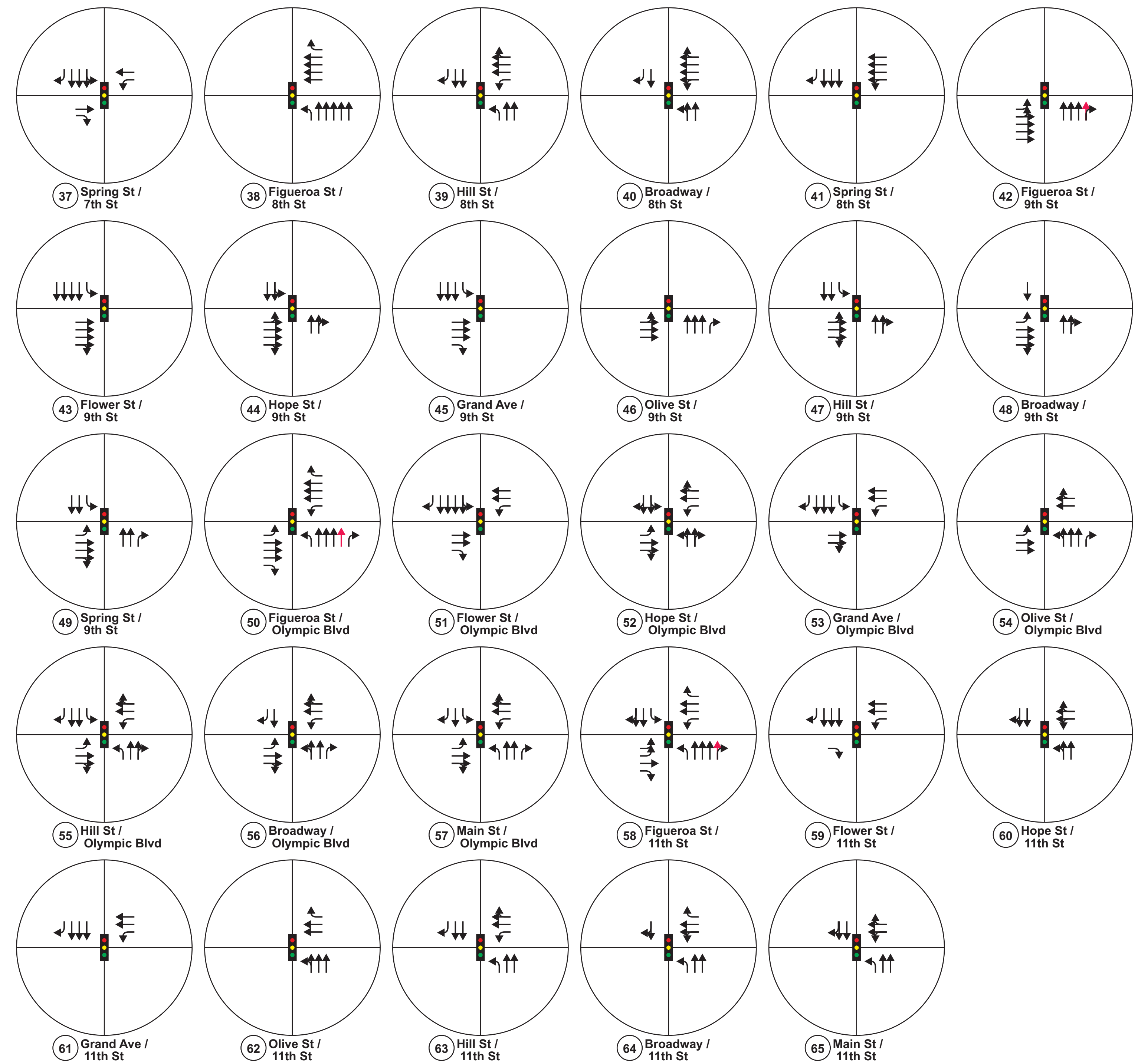
INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 2-1: Existing Intersection Lane Configuration



Grand Ave
Hill St
Broadway
Spring St
Temple St
Alameda St
1st St
Main St
2nd St
3rd St
4th St
5th St
6th St
Wilshire Blvd
7th St
8th St
8th Pl
9th St
Los Angeles St
Olympic Blvd
Figueroa St
Flower St
Hope St
Olive St
11th St
12th St
San Julian St
San Pedro St
Pico Blvd
110
101
Legend
7th Street Alternative
9th Street Alternative
Proposed Platforms
Bus Only
Service Connection
Grand Avenue Extension
Potential Maintenance and Storage Facility
Study Intersection
Potential Traction Power Substation Site
Blue/Expo Line Station Access
Red/Purple Line Station Access
0 600 1,200
Feet
Source: LADOT (2013), ESRI (2010)



37 Spring St / 7th St
38 Figueroa St / 8th St
39 Hill St / 8th St
40 Broadway / 8th St
41 Spring St / 8th St
42 Figueroa St / 9th St
43 Flower St / 9th St
44 Hope St / 9th St
45 Grand Ave / 9th St
46 Olive St / 9th St
47 Hill St / 9th St
48 Broadway / 9th St
49 Spring St / 9th St
50 Figueroa St / Olympic Blvd
51 Flower St / Olympic Blvd
52 Hope St / Olympic Blvd
53 Grand Ave / Olympic Blvd
54 Olive St / Olympic Blvd
55 Hill St / Olympic Blvd
56 Broadway / Olympic Blvd
57 Main St / Olympic Blvd
58 Figueroa St / 11th St
59 Flower St / 11th St
60 Hope St / 11th St
61 Grand Ave / 11th St
62 Olive St / 11th St
63 Hill St / 11th St
64 Broadway / 11th St
65 Main St / 11th St

2.2 REGULATORY SETTING

For this transportation impact analysis, guidelines obtained from the *California Environmental Quality Act* (CEQA), *National Environmental Policy Act* (NEPA), and the Los Angeles Department of Transportation (LADOT), in addition to the *City of Los Angeles Mobility Plan 2035*, and Metro's *2010 Congestion Management Program* (CMP) have been reviewed.

CEQA guidelines define “significant effect” or “significant impact” as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed Project. There are no federal or state regulations that outline quantitative measures with which the Project must comply because such standards are set at a local or regional level for roadways that are not under the federal or state highway systems. The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. There are few quantitative standards of significance related to transportation effects. The measurement and prediction of Level of Service (LOS) at potentially affected intersections is a standard that is used to evaluate the significance of potential traffic impacts. Predicted changes in level of service provide indications of how well road-based movements may function under the different alternatives, which may have implications for vehicular traffic, and certain types of transit and non-motorized transportation, such as pedestrians and bicycles.

Unlike CEQA, NEPA does not determine levels of significance based on quantitative findings, such as LOS. Rather, NEPA guidelines require consideration of both the context and intensity of a given project (*40 CFR part 1508.27*). The following definitions of context and intensity are used to identify significance:

- Context: This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
- Intensity: This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity as it relates to the transportation environment:
  - Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.
  - The degree to which the proposed action affects public health or safety.
  - The degree to which the effects on the quality of the human environment are likely to be highly controversial.
  - The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
  - The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
  - Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

With respect to rail safety, the California Public Utilities Commission's (CPUC's) Rail Transit Safety Section prescribes requirements for the design, construction, operation, and maintenance of heavy rail transit, light rail transit, trolleys, and funicular systems. The CPUC ensures that all rail transit system extensions and new construction projects undergo a safety certification review and receive approval.

2.3 ANALYTICAL TOOLS AND DATA SOURCES

2.3.1 Intersection Volumes

Traffic volume data was collected at the 65 study intersections during typical weekday morning and afternoon peak commute periods. These traffic counts were collected pursuant to LADOT guidelines, which recommend that counts be collected on days of good weather, when schools are in session, and not on weeks with a holiday. The traffic counts, which were collected between 2011 and 2015, were compiled from different sources including LADOT's traffic count database and from LADOT approved traffic impact studies for other projects. To check the validity of the older counts and to assess potential changes in travel patterns resulting from the installation of on-street bike lanes throughout downtown, traffic counts were updated in 2012 at a representative set of study intersections. To represent existing conditions, all traffic counts that were older than 2014/2015 were normalized to 2014/2015 by growing them using an annual growth rate of 0.5% per year to reflect existing conditions. The resulting existing (2014/2015) AM and PM peak hour turning movement traffic volumes at the study intersections are shown in Section 3.2.3. The raw peak period traffic volumes are presented in **Appendix A**.

2.3.2 Traffic Analysis Scenarios

Consistent with the CEQA guidelines, a level of service traffic analysis was performed at the 65 study intersections for the following scenarios that are being evaluated.

- Existing (2014/2015) Conditions
- Existing (2014/2015) With 7th Street Alternative, With and Without Grand Avenue Extension
- Existing (2014/2015) With 9th Street Alternative, With and Without Grand Avenue Extension
- Opening Year (2020) Without Project (No Project)
- Opening Year (2020) With 7th Street Alternative, With and Without Grand Avenue Extension
- Opening Year (2020) With 9th Street Alternative, With and Without Grand Avenue Extension
- Horizon Year (2040) Without Project (No Project)
- Horizon Year (2040) With 7th Street Alternative, With and Without Grand Avenue Extension
- Horizon Year (2040) With 9th Street Alternative, With and Without Grand Avenue Extension

These study intersections are located along the proposed streetcar alignment and along adjacent parallel roadways that are one block away from the alignment. The study intersections were selected as the locations most likely to be affected by the Project. This intersection list, which is presented in Section 2.1, was reviewed and concurred by LADOT.

2.3.3 Intersection Level of Service Methodology

Each study intersection was analyzed to determine peak hour operations and levels of service. The LOS for signalized and unsignalized intersections is generally based on delay values using the Transportation Research Board 2010 *Highway Capacity Manual* methodology. These values are calculated using the average delay (in seconds) per approaching vehicle**. Table 2-1** presents the LOS definition for signalized intersections. The *Synchro* software version 8.0 was used to analyze peak hour intersection traffic operating conditions. This is a widely accepted tool used to calculate level of service based on the delay methodology presented in the *Highway Capacity Manual*, which is the industry standard for analyzing traffic intersection operating conditions. It is recognized that this is a planning level analysis and therefore, detailed operational level evaluations are generally performed during the preliminary engineering and final engineering phases of the project. However, in order to replicate real world conditions, the signal timing parameters associated with the current lane configurations (as of August 2015) were collected from LADOT and utilized. This includes the current signal timing information along Broadway due to the implementation of the Broadway Dress Rehearsal project. Furthermore, this methodology approach was reviewed and approved by LADOT prior to initiating the traffic study analysis and evaluation.

Table 2-1: Signalized Intersections – LOS Definitions

Level of Service	Average Vehicle Delay (Seconds)	Definition
A	≤ 10.0	EXCELLENT. No vehicle waits longer than one red light and none of the approach signal phases are fully used.
B	> 10.0 and ≤ 20.0	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	> 20.0 and ≤ 35.0	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	> 35.0 and ≤ 55.0	FAIR. Delays may be substantial during portions of the peak hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	> 55.0 and ≤ 80.0	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 80	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: Transportation Research Board, *Interim materials on Highway Capacity,* Transportation Research Circular No. 212, January 1980; and Transportation Research Board, *Highway Capacity Manual (2010).*

2.3.4 Threshold for Significant Impact

The CEQA Guidelines define “significant effect” as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed Project. The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. Under CEQA, every agency in the state "is encouraged to develop and publish thresholds of significance" against which to compare the environmental impacts of projects. Such thresholds are to be published for public review and supported by substantial evidence before their adoption. A lead agency will normally consider the environmental impacts of a project to be significant if and only if they exceed established thresholds of significance.

The *2006 L.A. CEQA Thresholds Guide* provides significance thresholds that address intersection, street segment, freeway, and transit system capacity; neighborhood intrusion; project access; parking; and in street construction impacts. However, Appendix G of the State CEQA Guidelines was recently updated to (1) no longer require the analysis of parking as an environmental impact by a project, and (2) require analysis of conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. The thresholds of significance used to identify significant traffic impacts at signalized intersections under CEQA are based on the latest set of revised guidelines set forth by LADOT in the LADOT *Traffic Study Policies and Procedures* (August 2014). The change in delay threshold at an intersection is classified using LOS, which is defined in **Table 2-2** using the average vehicle delay. Consequently, traffic circulation impacts are evaluated based on the increase in average vehicle delay that a proposed Project Alternative would cause beyond the No Project Alternative condition.

Table 2-2: Intersection Significance Thresholds

Control Type	Final Intersection LOS with Project	Change in Delay (in seconds) from the No Project Alternative
Signalized Intersection	LOS C	≥ 6.0
	LOS D	≥ 4.0
	LOS E/F	≥ 2.5

2.3.5 Streetcar Characteristics

The streetcar vehicle would travel along the proposed alignment with vehicular traffic, predominately in the curb lane of the roadway using a fixed guideway. The fixed guideway would be flush with the roadway surface so that vehicular traffic can also operate in the same lane. A literature review of streetcar studies in other parts of the country was conducted to find out how the physical and operational characteristics of a streetcar would affect roadway capacity. Specifically, the Kansas City Downtown Streetcar Project Transportation Technical Report, the Portland Streetcar Loop Project Traffic Technical Memorandum, the Seattle First Hill-Capitol Hill Streetcar Line, and the Seattle South Lake Union Streetcar Project Transportation Technical Report were reviewed. Based on this review, a streetcar affects roadway capacity and operations in a similar manner as an articulated bus running in the travel lane. Because the streetcar operates on a fixed guideway, safe and reliable operating conditions will be maintained by complying with the applicable California Public Utilities Commission (CPUC) standards and guidelines.

In order to calculate vehicle trips, a streetcar is converted to a type of vehicle in the traffic stream that operates in the same way as a passenger car. The passenger car equivalency factor is used to convert large vehicles in the traffic stream to physical and operational characteristics that are similar to those of a passenger car. The operating characteristics of the streetcar would be similar to that of an articulated bus. The standard streetcar vehicle length is between 65 and 85 feet long. For purposes of the passenger car equivalency calculation, a conservative 85-foot streetcar length is used which is equivalent to approximately 2.13 times the length of a standard bus (40 feet). The operation of a standard bus in the traffic flow is equivalent to 2 passenger cars. Consequently, the operation of a streetcar is equivalent to up to 4.26 passenger cars. The conversion of a streetcar to equivalent passenger cars is used to convert large and slower vehicles in the traffic stream to an equivalent passenger car. This factor is used to reflect large vehicles because they take up more space and they are also slower than a passenger car, so the factor addresses both the physical and operational characteristics of a large vehicle, which includes vehicle length, vehicle weight, start-up lost time, acceleration rate characteristics, headways, speed, and delay.

Based on the proposed approximately 7-minute headway operation of the streetcar during the AM and PM peak periods, a total of 9 streetcar events would pass through a given point along the alignment during each AM and PM peak hour. This is equivalent to approximately 39 additional vehicle trips during each AM and PM peak hour. These additional vehicle trips take into consideration the operating characteristics of a vehicle including start-up delays. These additional vehicle trips were added to the AM and PM peak hour traffic volumes for each intersection approach movement along the streetcar alignment.

The trips generated by streetcar employees, such as operators, supervisors, and maintenance staff working at the MSF site were not included in the estimate of additional trips because it is anticipated that their work hours will be outside of the AM and PM peak hour commute periods. Based on the proposed operating plan, these employees need to be available prior to the beginning of operations, during the non-peak period when some vehicles are taken out of service, and during the end of daily operations. Consequently, the trips generated by the estimated 19 employees at the MSF site would be distributed over the course of the day and would be minimal, if any, during the AM and PM peak hours. The number of trips generated by the employees would also be below the minimum threshold set forth by LADOT for evaluating traffic impacts which is 25 vehicles per hour.

To account for near side stops and the anticipated dwell time for passengers to board and alight, an adjustment factor to reflect this potential blockage along one lane roadways was utilized in the *Synchro* software. The objective of incorporating this blockage adjustment factor is to account for vehicles queued behind the streetcar at a near side station stop along one lane roadway segments. As a result of the previously discussed literature review of other streetcar traffic studies, it was determined that it is standard practice to assume that operation of the streetcar can be treated in the same manner as a bus, including vehicular operating characteristics and blockage due to station dwell time.

It is also expected that a streetcar operating along the proposed alignment would result in a shift between travel modes for existing patrons. Ridership estimates conducted for the proposed project indicate that between 3,850 and 5,775 daily boardings can be expected in the Opening Year (2020), of which between 1,750 and 3,125 would be new transit riders (see Chapter 2 of the EIR). Riders of the streetcar may shift from the various travel modes in the area such as personal vehicle, bus, rail, bicycle and foot. Although it is recognized that the revitalization of the study area may generate new trips that would utilize the streetcar during the off-peak weekday period and the weekend, it is anticipated that during the AM and PM commute peak hours, the availability of streetcar service would result in a mode shift of existing trips, and attract patrons to use the streetcar instead of making short vehicular trips, walking, bicycling, or taking other forms of public transit.

2.3.6 Background Traffic Forecasts

To determine the Opening Year (2020) and the Horizon Year (2040) traffic volumes, two primary elements that contribute to traffic growth over the years were considered:

1. Ambient traffic growth rate, and
2. Traffic due to other known programmed or planned future (related) development projects

The background traffic forecasts include a determination of the traffic growth rate combined with specific related development projects in the area. The ambient traffic growth rate accounts for population and employment growth due to projects that will occur in the future, but are not yet known, plus smaller projects that are not on the local jurisdiction's list of related projects.

In addition to the ambient background growth, the second potential source of traffic growth in the study area is anticipated to occur from other future development projects in the vicinity of the study area. These "cumulative" or related projects are those developments that are programmed or planned and are expected to be in place within the same timeframe of the proposed project. The related projects information was provided by the City of Los Angeles Planning Department and was included in the determination of the future background volumes at specific areas. The list of related projects is presented in **Appendix B**.

A review of the most recent Congestion Management Program for Los Angeles County (Los Angeles Metropolitan Transportation Authority 2010 CMP) indicates that the traffic volume annual growth rate for the Downtown Los Angeles subarea is estimated at about 0.2 percent per year. Therefore, utilizing a growth rate of 0.5 percent per year would yield conservative results in the traffic analysis. This 0.5 percent annual traffic growth rate was applied to the existing peak hour volumes to establish future volumes for both the opening year of 2020 and the horizon year of 2040.

Also, additional changes to the existing roadway lane configurations (See Section 3.2.2) due to the following projects were reflected and accounted for in the traffic analysis during the Opening Year (2020) and the Horizon Year (2040).

- A combination of the *Broadway Streetscape Master Plan* (BSMP), located from just north of the Broadway and 2nd Street intersection to just south of the Broadway and Olympic Boulevard intersection, and the currently implemented Broadway Dress Rehearsal, which is a partial implementation of the BSMP.
- The *City of Los Angeles 2010 Bicycle Plan*, which includes the 7th Street Reconfiguration Project between Figueroa Street and Main Street. This consisted of the reduction of travel lanes (reducing the street to one travel lane in each direction, with the exception of the segment between Hope Street and Figueroa Street where two westbound travel lanes are retained along with one eastbound travel lane) and the introduction of a continuous center left-turn lane. In addition, one bike lane was installed in each direction.
- The *MyFigueroa Corridor Streetscape Project* (MyFig), which includes roadway improvements, as well as pedestrian and bikeway enhancements, on Figueroa Street and 11th Street. This project would install a one-way westbound bicycle facility on 11th Street and a northbound buffered cycle track on Figueroa Street from 11th Street to 7th Street. The project is currently out for bid and construction is anticipated to start later this year (2016).

- The recently planned protected bicycle lanes on Main and Spring Streets between Cesar Chavez Avenue in Chinatown and Olympic Boulevard in South Park. The protected bicycle lanes would be physically buffered from the traveling vehicles by various treatments. The proposed bike lane on Main Street would run in the northbound direction along the west side of the street. The proposed bike lane on Spring Street would run the southbound direction along the east side of the street.

Chapter 3 – Affected Environment

This chapter of the report presents the existing conditions for each transportation component being evaluated. The transportation environment consists of public transit, streets and highways, parking and other modes such as pedestrians and bicycles.

3.1 PUBLIC TRANSIT

Existing transit services within proximity of the proposed streetcar alignment were identified and tabulated. The downtown area has the highest concentration of transit service of any area in Los Angeles County. At present, ten transit operators provide service within proximity of the proposed streetcar alignment; with the bulk of service provided by Metro. These operators are:

- Antelope Valley Transit Authority (AVTA)
- City of Gardena (Gardena Municipal Bus Lines)
- City of Santa Clarita Transit
- City of Santa Monica (Big Blue Bus)
- Foothill Transit (FT)
- City of Los Angeles Department of Transportation (LADOT)
- Los Angeles County Metropolitan Transportation Authority (Metro)
- City of Montebello (Montebello Bus Lines)
- Orange County Transportation Authority (OCTA)
- City of Torrance (Torrance Transit)

Many of these regional transit operators run mostly peak commute hour, peak-direction commuter bus service in and out of the downtown area. LADOT provides frequent Downtown Area Short Hop (DASH) service along short, mostly circulator shuttle routes within the downtown area. These DASH routes provide connections to different destinations in downtown, including connections to regional transit. In addition to public transit services, several high-rise office tenants within the downtown area offer private shuttle buses for their employees. **Figure 3-1** illustrates the existing bus services in the Downtown Los Angeles area that are currently offered by Metro and the other transit operators.

3.1.1 Metro

This section describes Metro rail and bus service in Downtown Los Angeles, as shown in **Figure 3-1**. Metro provides rail service with the Red Line from Union Station to North Hollywood, the Purple Line from Union Station to Wilshire Center, the Blue Line from the 7th Street/Metro Center to Long Beach, the Expo Line from the 7th Street/Metro Center to Culver City, and the Gold Line from Union Station to Pasadena, East Los Angeles, and Azusa/Glendora.

There are seven Metro rail stations located within the study area. The Red and Purple Line stations are Union Station, Civic Center (Hill Street between Temple Street and 1st Street), Pershing Square (Hill

Street between 4th Street and 5th Street), and 7th Street/Metro Center (7th Street between Figueroa Street and Hope Street). The 7th Street/Metro Center Station serves as a transfer point to the Blue Line and the Expo Line. The Blue Line serves the areas between Downtown Los Angeles and Downtown Long Beach, and includes stations at Pico (Flower Street between Pico Boulevard and 12th Street) and Grand (Washington Boulevard between Flower Street and Grand Avenue). The Expo Line currently serves the areas between Downtown Los Angeles and Culver City, and includes the station at Pico (Flower Street between Pico Boulevard and Grand Avenue). Upon completion of Phase 2, the Expo Line will extend from the Culver City station to Santa Monica. The Gold Line serves the areas between Union Station and Azusa, as well as between Union Station and east Los Angeles.

All Metro rail stations provide connections to additional public transportation options, including bus service provided by Metro and other transit operators as well as Metrolink and Amtrak rail services at Union Station.

The majority of bus transit service in the study area, as well as the Los Angeles region, is provided by Metro, which operates a number of short and long-distance radial lines, as well as cross-town service, express service, and even 24-hour “Owl” service on many routes. Metro’s bus services vary considerably in speed and capacity. The most basic routes provide line-haul service to and from downtown along arterial streets. Heavily-traveled routes often have overlaid limited-stop or Metro Rapid bus service. **Table 3-1** lists the existing (August 2015) bus routes (including the end destinations of their services) within the downtown area.

3.1.2 LADOT

The Los Angeles Department of Transportation (LADOT) provides Downtown Area Short Hop (DASH) and Commuter Express bus service. Downtown DASH includes five local circulation routes connecting the study area with Little Tokyo, Chinatown, the Fashion District, and the University of Southern California (**Figure 3-2**). The service frequencies are high (approximately every 5-10 minutes). Service hours are 6 AM to 7 PM, Monday through Friday, and some limited service on weekends. Commuter Express (**Figure 3-3**) buses provide commuter service from communities in the region to high employment centers. Nine routes connect several suburban communities to Downtown Los Angeles and seven routes connect suburban communities to other high employment areas in the region. Commuter Express operates during weekday peak periods but do not operate weekday midday or during the weekends.

Figure 3-1: Metro Rail and Bus Service in Downtown Los Angeles

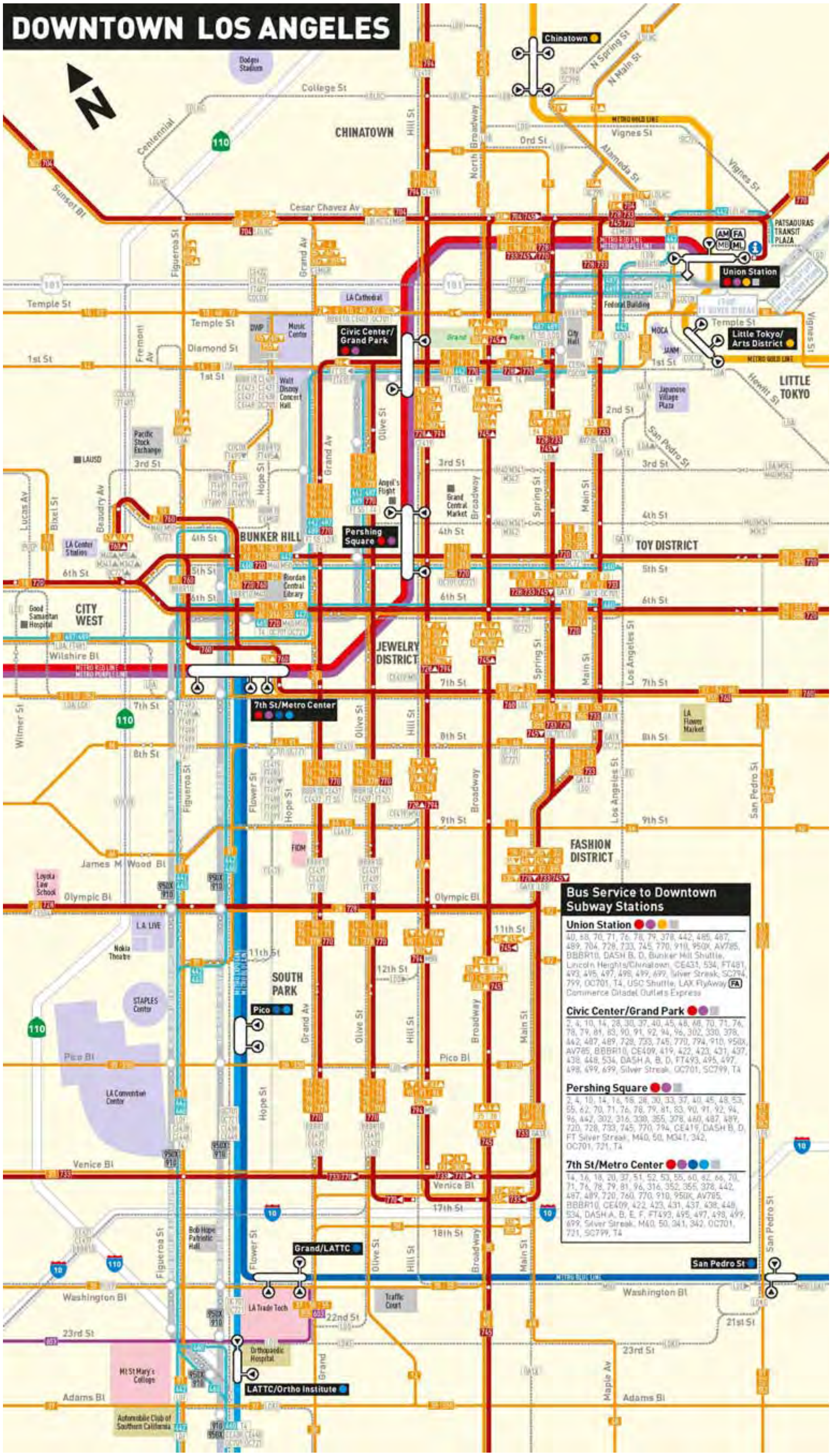


Table 3-1: Metro Bus Routes within the Study Area

Line	Destination
2-302	Downtown LA - Pacific Palisades via Sunset Blvd
4	Downtown LA - West LA - Santa Monica via Santa Monica Blvd
10	W. Hollywood - Downtown LA via Melrose
14	Beverly Hills - Downtown LA via Beverly Blvd
16-316	Downtown LA - Century City via 3rd St
18	Wilshire Center - Montebello via 6th St & Whittier Blvd
20	Downtown LA - Santa Monica via Wilshire Blvd
28	Downtown LA - Century City via West Olympic Blvd
30-330	W. Hollywood - Downtown LA - Indiana Station via Pico, 1st
33	Downtown LA - Santa Monica via Venice Blvd
35	Downtown LA - Fairfax/Washington via Washington Blvd
37	Downtown LA – Washington/Fairfax via Adams Blvd
38	17th/Broadway - Washington/Fairfax via W Jefferson Blvd
40	Downtown LA - South Bay Galleria via King, Crenshaw, Hawthorne
45	Lincoln Heights - Rosewood via Spring St
48	Downtown LA – Avalon Station via Main & San Pedro St
51-52-352	Wilshire Center - Downtown LA – Compton - Harbor Gateway via Avalon
53	CSU Dominguez Hills via Central
55-355	Downtown LA - Willowbrook Station via Compton Av
60	Downtown LA - Artesia Station via Long Beach Blvd
62	Downtown LA - Hawaiian Gardens via Telegraph Rd
66	Wilshire Center - Downtown LA - Montebello via 8th & Olympic Blvd
68	Downtown LA – Montebello via Cesar Chavez Av
70	Downtown LA - El Monte via Garvey Ave
71	Downtown LA – Cal State LA via Wabash Av & City Terrace Dr
76	El Monte - Downtown LA via Valley Blvd
78-79-378	Downtown LA - Arcadia via Las Tunas Dr & Huntington Dr
81	Eagle Rock - Downtown LA - Harbor Freeway Station via Figueroa
83	Downtown LA - Eagle Rock via York Blvd - Pasadena Ave
90-91	Downtown LA - Sunland via Foothill Blvd, Glendale Av
92	Downtown LA - Burbank Station via Glenoaks Blvd, Brand Blvd, Glendale Blvd
94	Downtown LA - Sun Valley via San Fernando Rd
96	Downtown LA - Sherman Oaks via Riverside Dr, LA Zoo
442	Downtown LA - Hawthorne/Lennox Station via Manchester Av, Harbor Transitway
460	Downtown LA - Disneyland via Harbor Transitway & I-105 Freeway
487-489	Downtown LA - Sierra Madre Villa Station - El Monte Station
720	Santa Monica - Commerce via Wilshire Blvd & Whittier Blvd
728	Downtown LA - Century City via Olympic Blvd
733	Downtown LA - Santa Monica via Venice Blvd
745	Downtown LA - Harbor Freeway Station via Spring St
760	Downtown LA - Long Beach Green Line Station via Long Beach Blvd
770	Downtown LA - El Monte via Cesar E. Chavez Ave & Garvey Ave

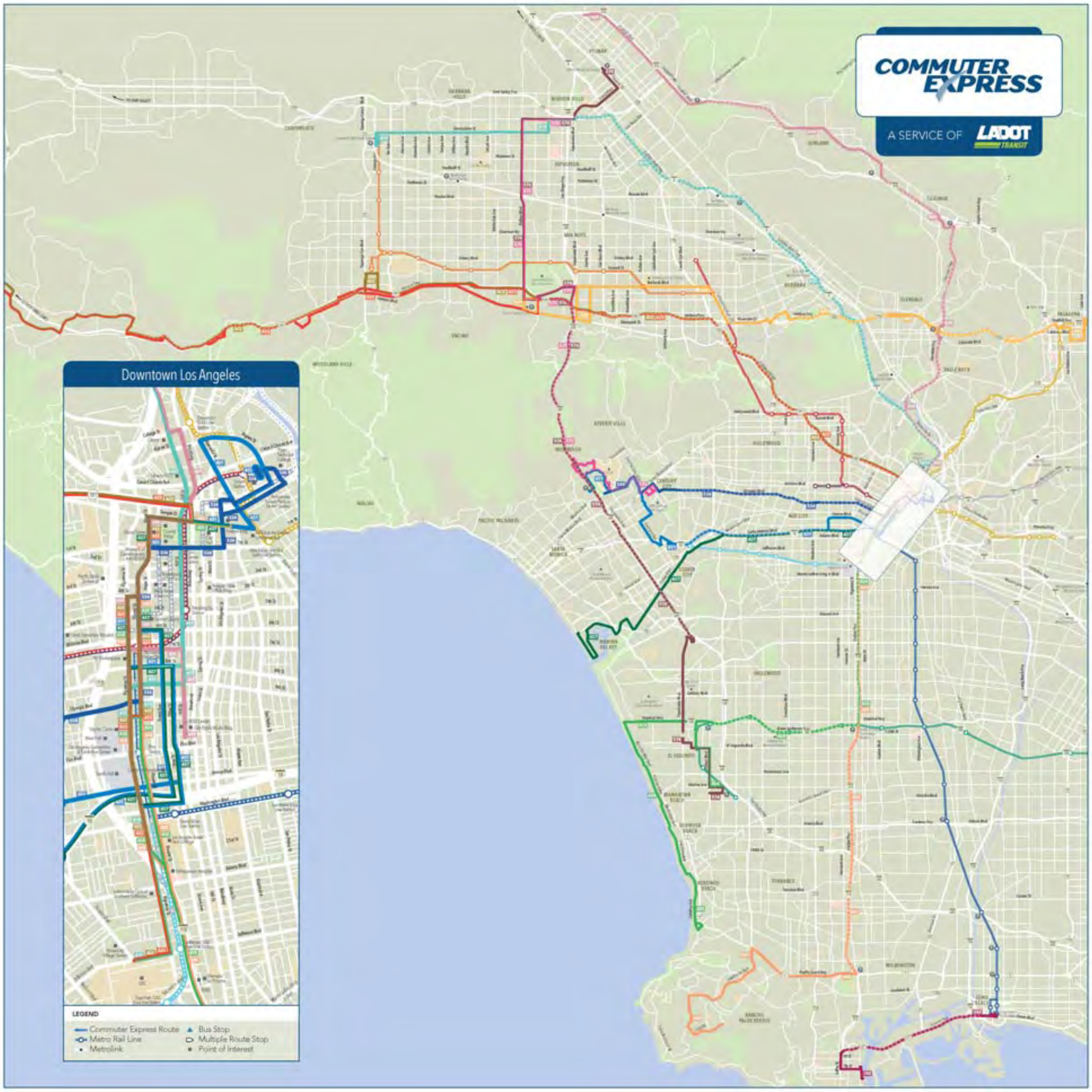
Table 3-1: Metro Bus Routes within the Study Area

Line	Destination
794	Downtown LA - Sylmar Station via San Fernando Rd, Brand Blvd
910	South Bay – Downtown LA - San Gabriel Valley (Silver Line)

Source: Metro, August 2015

Figure 3-2: DASH Service in Downtown Los Angeles

Figure 3-3: Commuter Express Service Map



3.2 STREETS AND HIGHWAYS

3.2.1 Roadway Network

The environment in which traffic will be examined includes all major and secondary arterials between and including 1st Street and 11th Street, and Figueroa Street and Spring Street. None of the roadways identified below are part of the Congestion Management Program (CMP) street network. The following sections describe the major arterials in the project area roadway network.

- **Figueroa Street** – This is a Modified Avenue I according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. North of Olympic Boulevard, Figueroa Street is a one-way northbound street. Currently Figueroa Street carries about 19,300 to 32,100 vehicles per day.
- **Flower Street –** This is a Modified Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. It is a one-way southbound street south of 4th Street and a two-way street north of 4th Street. The 7th Street Metro Station is located at Flower Street and 7th Street. Currently Flower Street carries about 6,700 to 17,600 vehicles per day.
- **Grand Avenue –** This is a Modified Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. It is a one-way southbound street south of 5th Street and a two-way street north of 5th Street. Currently Grand Avenue carries about 12,300 to 22,500 vehicles per day.
- **Olive Street –** This is a Modified Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. It is a one-way northbound street south of 5th Street and a two-way street north of 5th Street. Currently Olive Street carries about 13,300 to 17,300 vehicles per day.
- **Hill Street –** This is a Modified Two-Way Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. Hill Street carries about 18,200 to 22,100 vehicles per day.
- **Broadway –** This is a Modified Two-Way Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. Broadway carries about 9,800 to 14,000 vehicles per day.
- **Spring Street –** This is a Modified Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the north and south directions. It is a one-way southbound street that extends north from 9th Street. Spring Street carries about 14,500 to 17,800 vehicles per day.
- **1st Street –** This is a Modified Two-Way Boulevard II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. 1st Street carries about 14,000 to 23,300 vehicles per day.
- **2nd Street –** This is a Modified Two-Way Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. 2nd Street carries about 11,700 to 17,100 vehicles per day.
- **3rd Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way westbound street east of Flower Street and a two-way street west of Flower Street. 3rd Street carries about 17,800 to 20,800 vehicles per day.

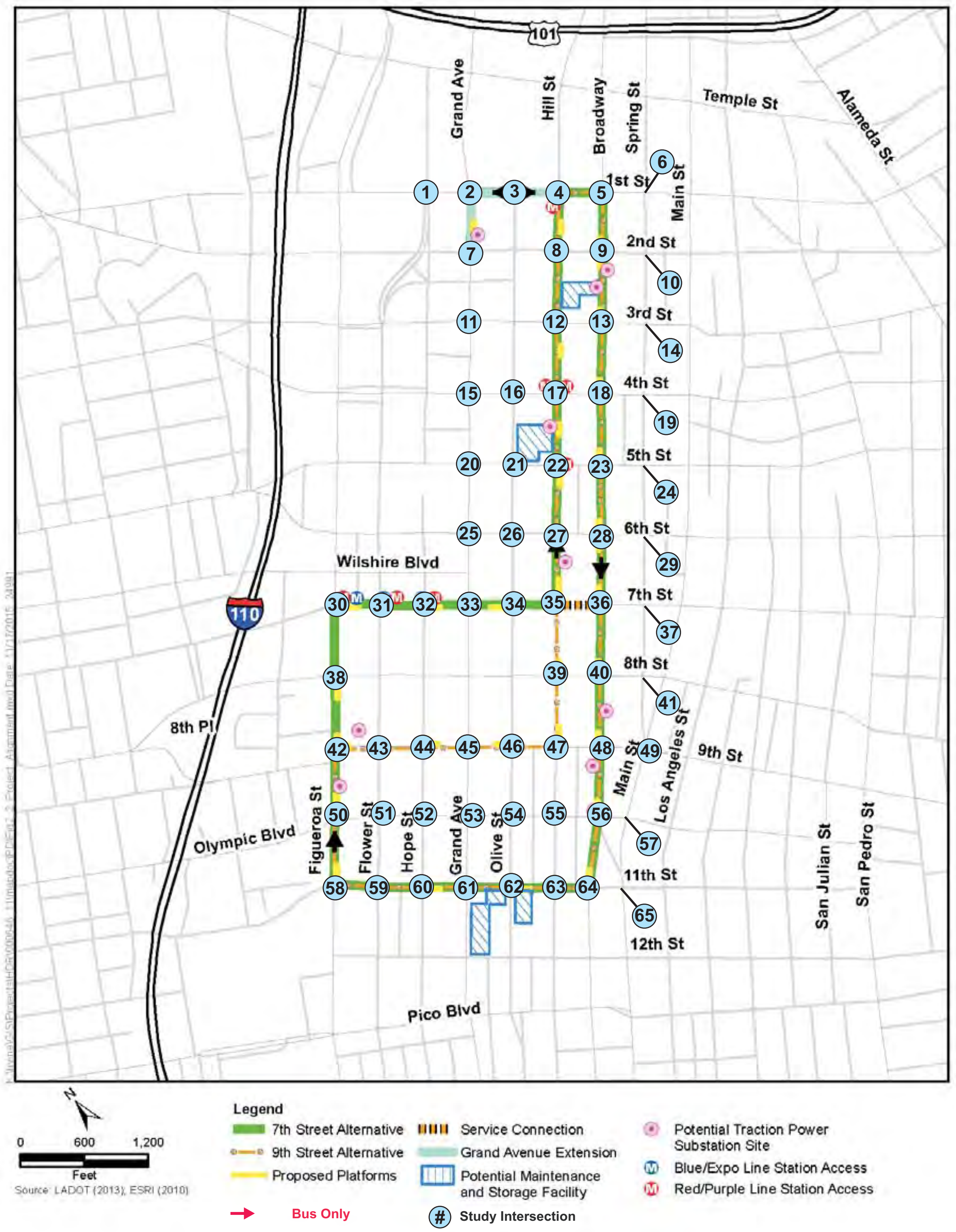
- **4th Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way eastbound street. 4th Street carries about 11,500 to 12,700 vehicles per day.
- **5th Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way westbound street. 5th Street carries about 21,200 to 22,200 vehicles per day.
- **6th Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way eastbound street. 6th Street carries about 14,100 to 21,000 vehicles per day.
- **7th Street –** This is a Modified Two-Way Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. 7th Street carries about 9,000 to 12,000 vehicles per day.
- **8th Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way westbound street. 8th Street carries about 12,500 to 15,300 vehicles per day.
- **9th Street –** This is a Modified Avenue II according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way eastbound street. 9th Street carries about 13,400 to 21,600 vehicles per day.
- **Olympic Boulevard –** This is a Modified Two-Way Avenue I according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. Olympic Boulevard carries about 20,400 to 32,400 vehicles per day.
- **11th Street –** This is a Modified Avenue III according to the *City of Los Angeles Mobility Plan 2035* and is oriented in the east and west directions. It is a one-way westbound street. 11th Street carries about 4,600 to 10,400 vehicles per day.

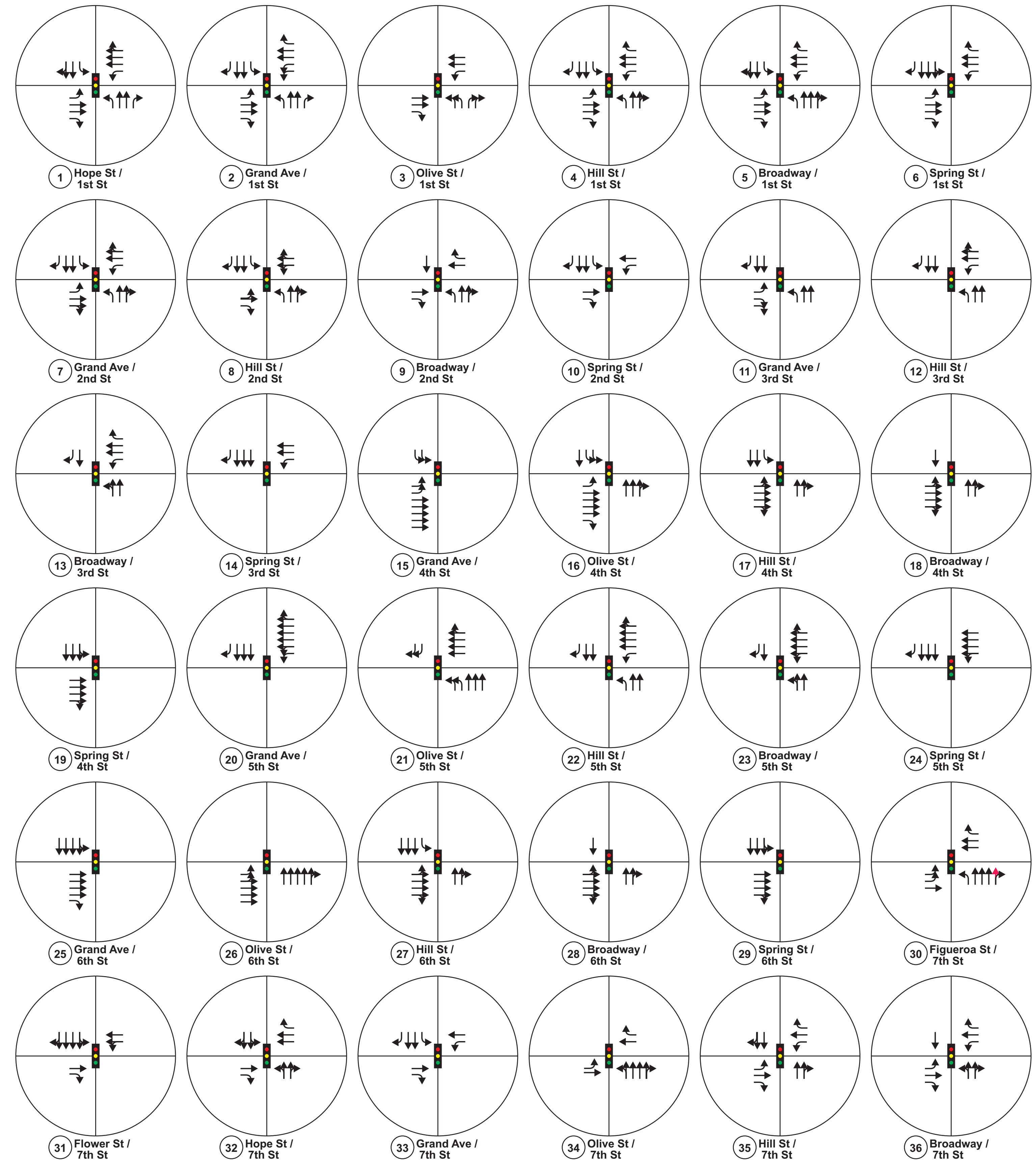
3.2.2 Planned Projects Affecting Roadway Capacity

A number of roadway improvements, as well as, bikeway and streetscape projects are anticipated to be completed within the project area. These planned projects would reduce capacity on some of the roadways in the project study area for the Opening Year (2020) and the Horizon Year (2040), **Figure 3-4** provides an illustration of the anticipated future intersection lane configurations. These planned projects are as follows:

- **11th Street** from Broadway to Figueroa Street, part of the *MyFigueroa* Corridor Streetscape Project, would install a one-way westbound bicycle facility; one of the two existing westbound travel lanes would be eliminated from Broadway to Flower Street, thus reducing the roadway to one lane in the westbound direction.
- **Figueroa Street** from 11th Street to 7th Street, part of the *MyFigueroa* Corridor Streetscape Project, would install a buffered cycle track (separated/exclusive bike lane) in the northbound direction; one northbound travel lane would be eliminated.
- **Figueroa Street** at the intersection of 7th Street, consists of the modification of the signal phasing and timing as part of the proposed Wilshire-Grand Redevelopment Project.

- **Broadway between Olympic Boulevard and 2nd Street,** part of the *Broadway Streetscape Master Plan* (BSMP), has reduced Broadway to two travel lanes in the northbound direction and one travel lane in the southbound direction. In addition, southbound motorists would be prohibited from making a left turn at the intersections from Broadway to the cross streets. Currently, right turns are permitted along the southbound direction of Broadway as part of the recently implemented Broadway Dress Rehearsal. The existing lane configuration, which was implemented as part of the Broadway Dress Rehearsal, would be maintained. Southbound right turn movements would be permitted, in an exclusive right turn only pocket lane, at 3rd Street, 5th Street, and 8th Street and at other intersections, if required, as traffic conditions and implementation of the BSMP proceeds. For purposes of this traffic analysis, it is anticipated that southbound right turn movements would be prohibited at 2nd Street, 7th Street, and Olympic Boulevard. As a result of the reduction in the travel lane capacity and the turn prohibitions for the southbound left and right turn movements, traffic was assumed to be diverted to the adjacent roadways. The diversion of traffic to both Hill and Spring Streets was based on the methodology used in the *Broadway Streetscape Plan Traffic Study* that was prepared in November 2010 and accepted by LADOT.

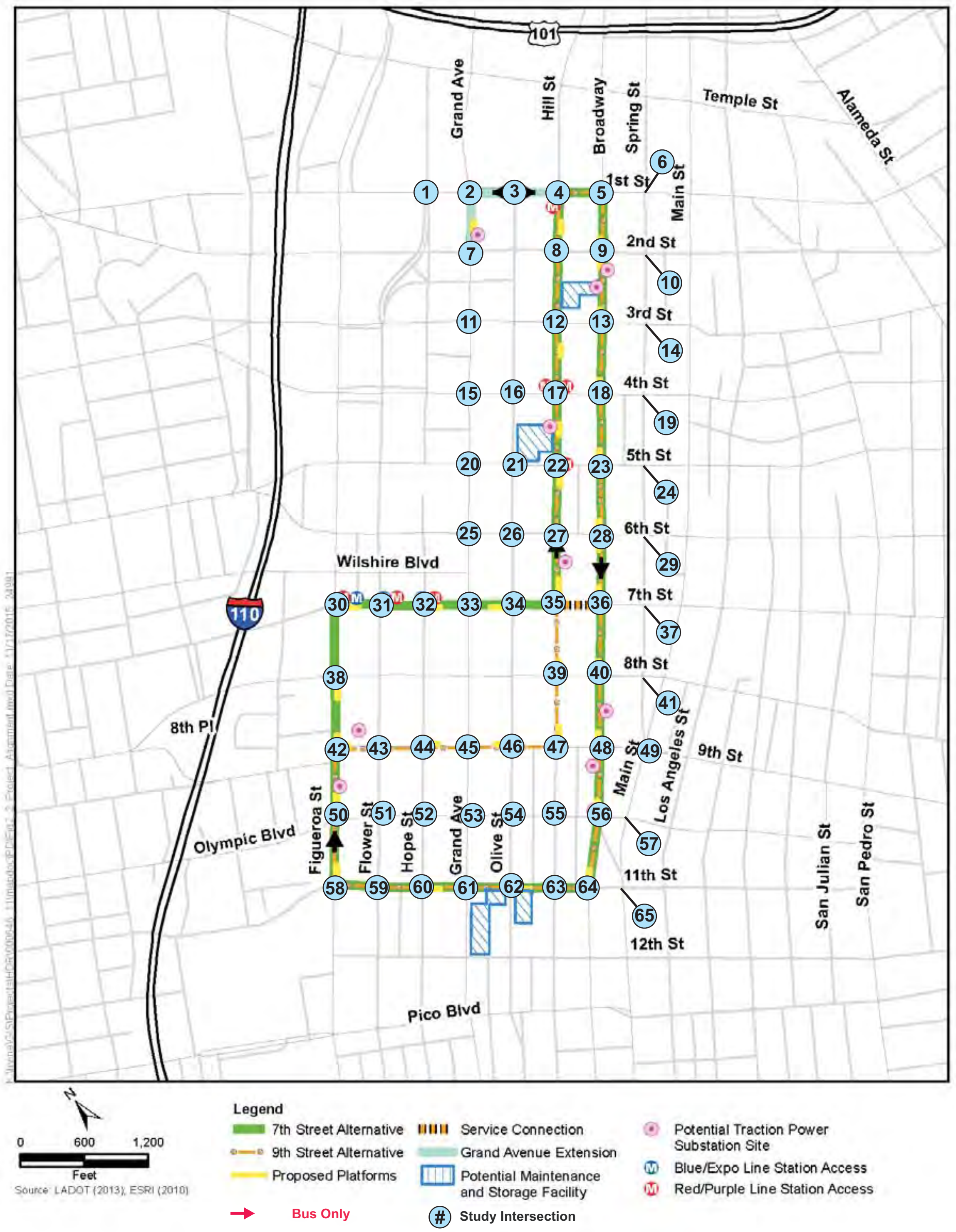


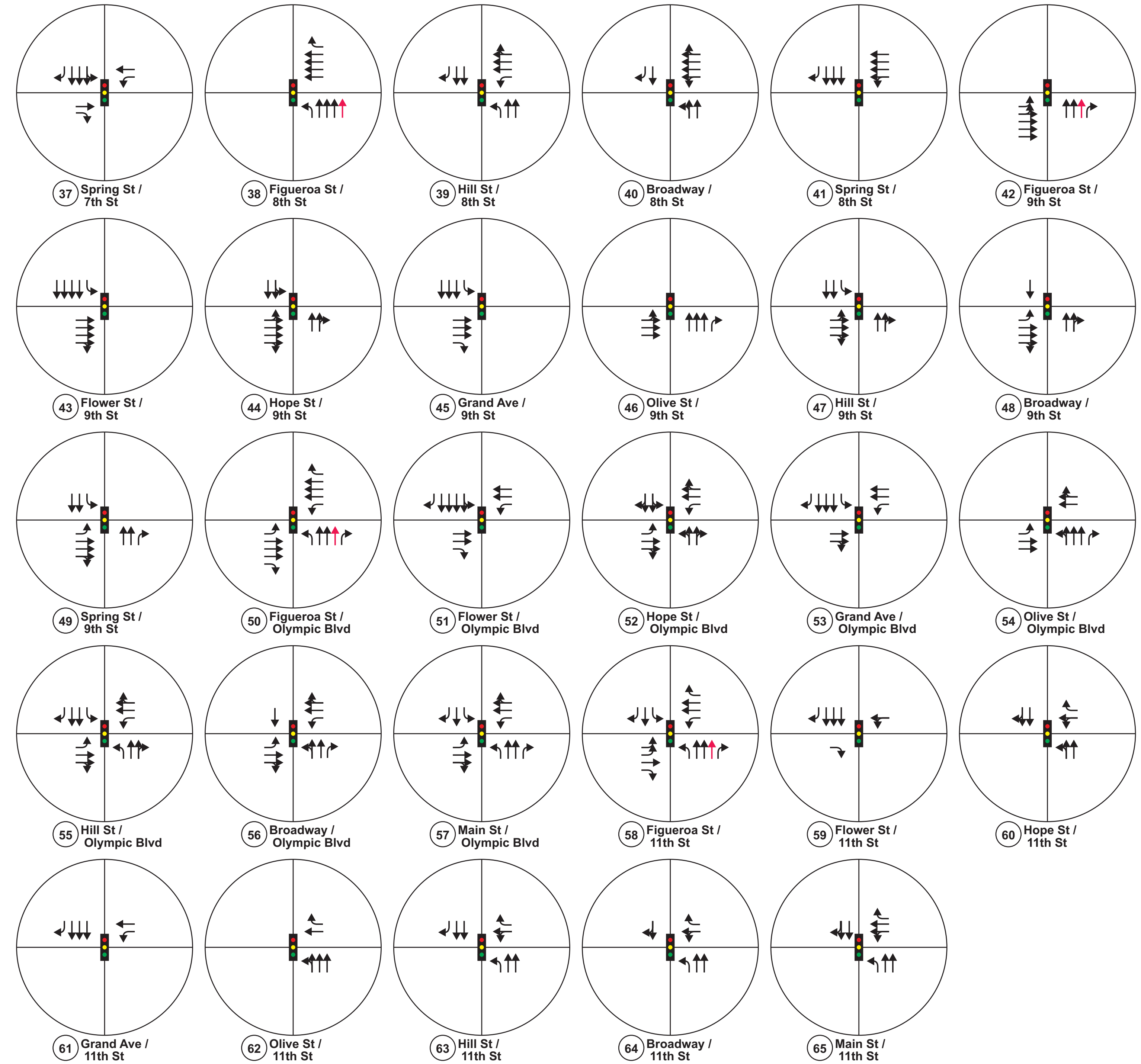


INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 3-4: Future Intersection Lane Configuration Without Project





Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 3-4: Future Intersection Lane Configuration Without Project (continued)

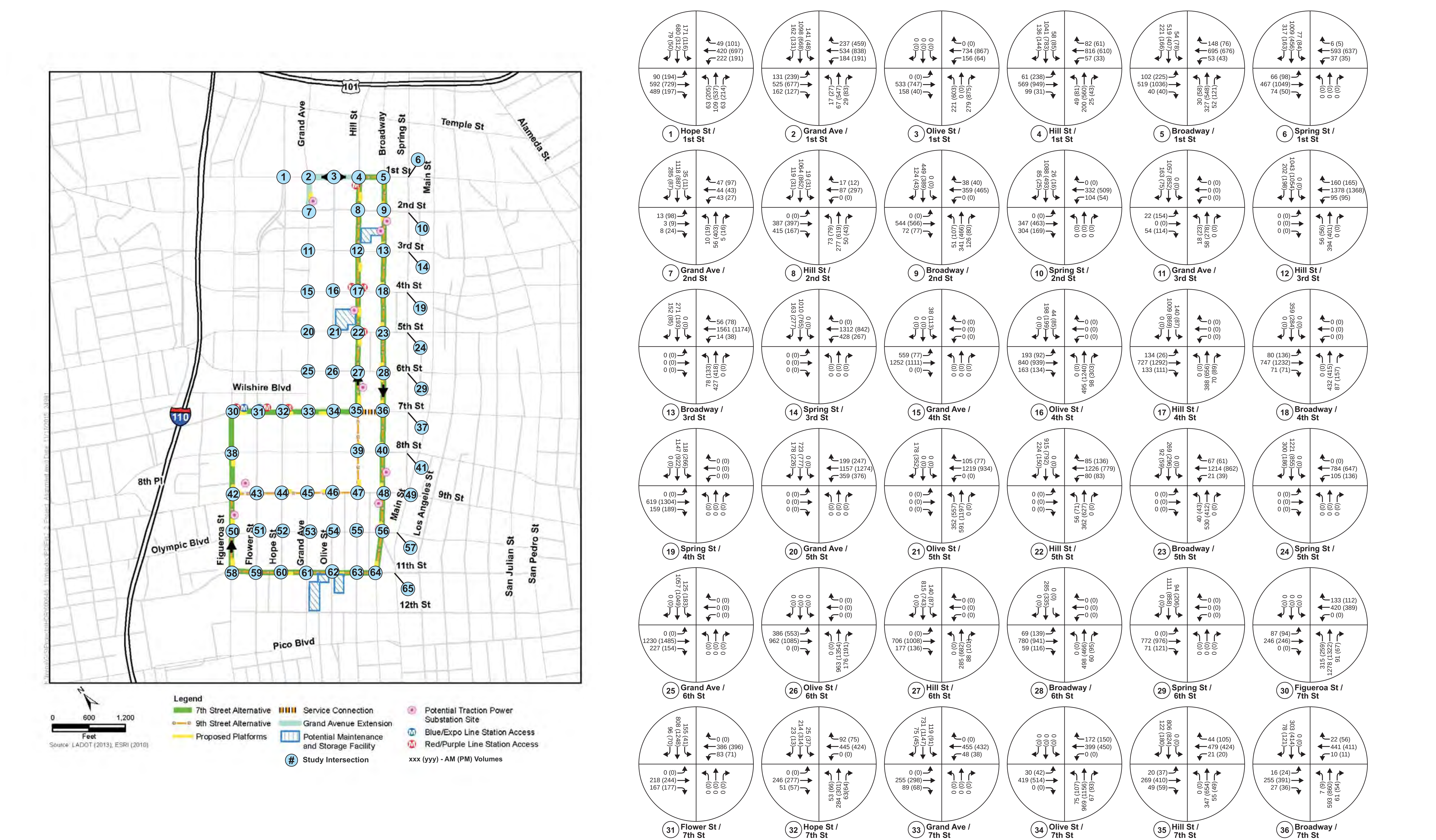
3.2.3 Study Intersections and Existing Levels of Service

Turning movement counts were collected at 65 intersection locations in the project area in order to assess the existing peak hour traffic operating conditions. The selected intersections are located both along the proposed alignments and along adjacent streets. None of the selected intersections are located on a CMP route and thus a focused CMP analysis was not required or undertaken. In addition, the City of Los Angeles Department of Transportation (LADOT) has entered into an agreement with Caltrans that establishes a screening filter used to determine which projects should be directed to Caltrans to potentially prepare a focused Freeway Impact Analysis beyond the CMP analysis. The screening criteria identified in the agreement focuses on a land use development where the project's peak hour trips result in a percentage increase to the freeway mainline capacity. This percentage increase is based on the resulting operating LOS for the freeway segment under consideration. This Project does not require a Freeway Impact Analysis because it is not expected to result in any traffic generated onto the state highway system, therefore, the thresholds listed in the agreement between LADOT and Caltrans would not be triggered by any of the project alternatives. All the study intersections are currently signalized. All traffic count data was taken on a representative weekday (Tuesday, Wednesday or Thursday) when schools were in session, there was no public holiday, and no unusual or adverse weather conditions. Detailed vehicle turning movement data are included in **Appendix A** and are illustrated in **Figure 3-5.**

Each study intersection was analyzed to determine peak hour operations and level of service. The AM peak hour is defined as the one-hour period of time with the highest volume of traffic during the 7:00 a.m. to 10:00 a.m. morning peak period. The PM peak hour is defined as the one-hour period of time with the highest volume of traffic during the 3:00 p.m. to 6:00 p.m. evening peak period. The project area roadway network was developed and created in *Synchro version 8.0* by inputting the physical and operational characteristics of each study intersection. The *Synchro* output provides the level of service results for signalized and un-signalized intersections along with an associated overall average intersection delay in seconds per vehicle. The intersection analysis showed that three of the 65 study locations operate at LOS E or F:

- The Broadway and 3rd Street intersection operates at LOS F during the AM peak hour
- The Olive Street and 9th Street intersection operates at LOS F during the PM peak hour
- The Figueroa Street and Olympic Boulevard intersection operates at LOS E during both the AM and PM peak hours

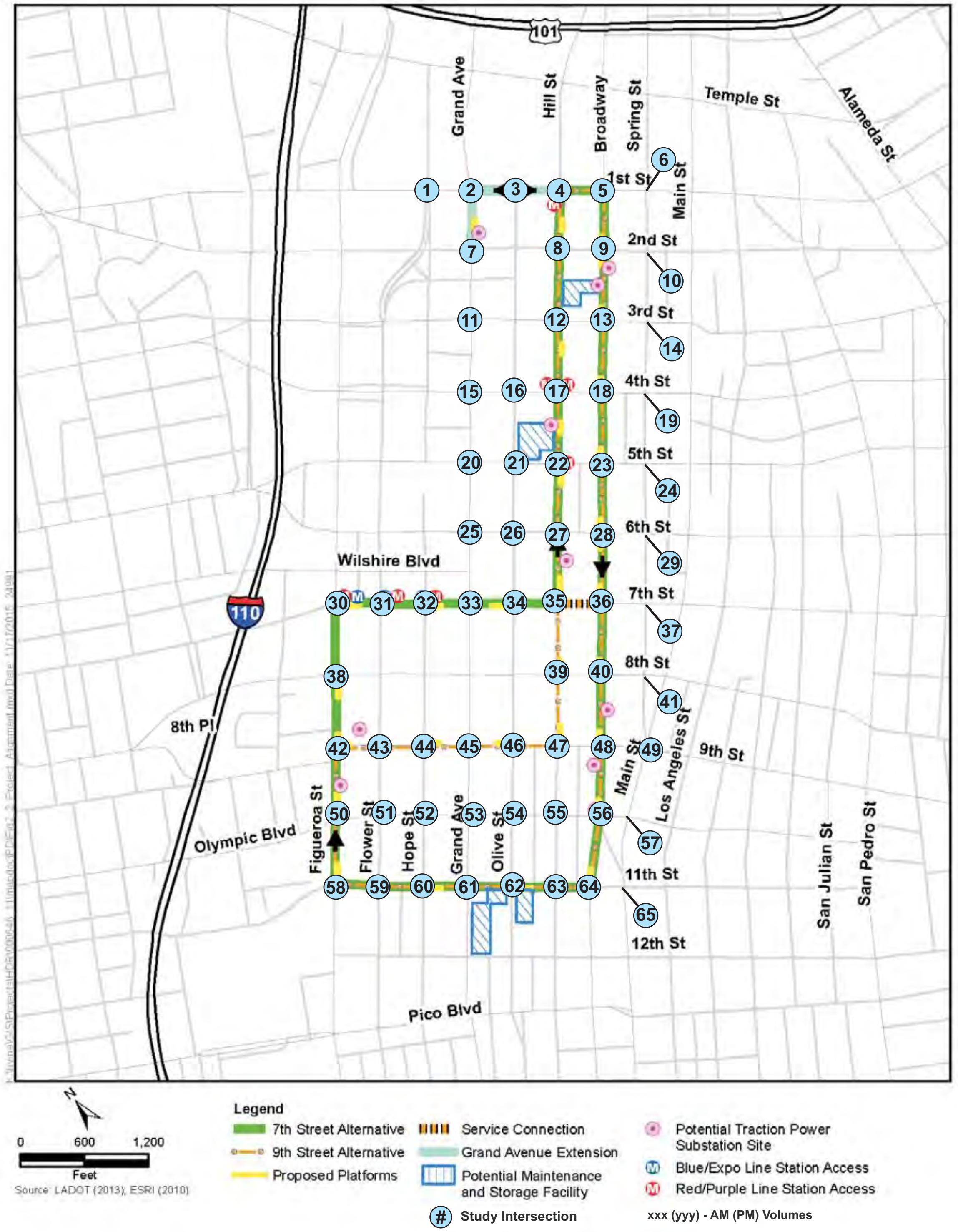
The remaining 62 intersections operate at LOS D or better during both the AM and PM peak hours. **Table 3-2** presents the results of the existing AM and PM traffic operations and corresponding LOS at each of the study intersections. The detailed Existing (2014/2015) conditions LOS worksheets can be found in **Appendix C.**



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 3-5: Existing (2014/2015) AM/PM Peak Hour Traffic Volumes



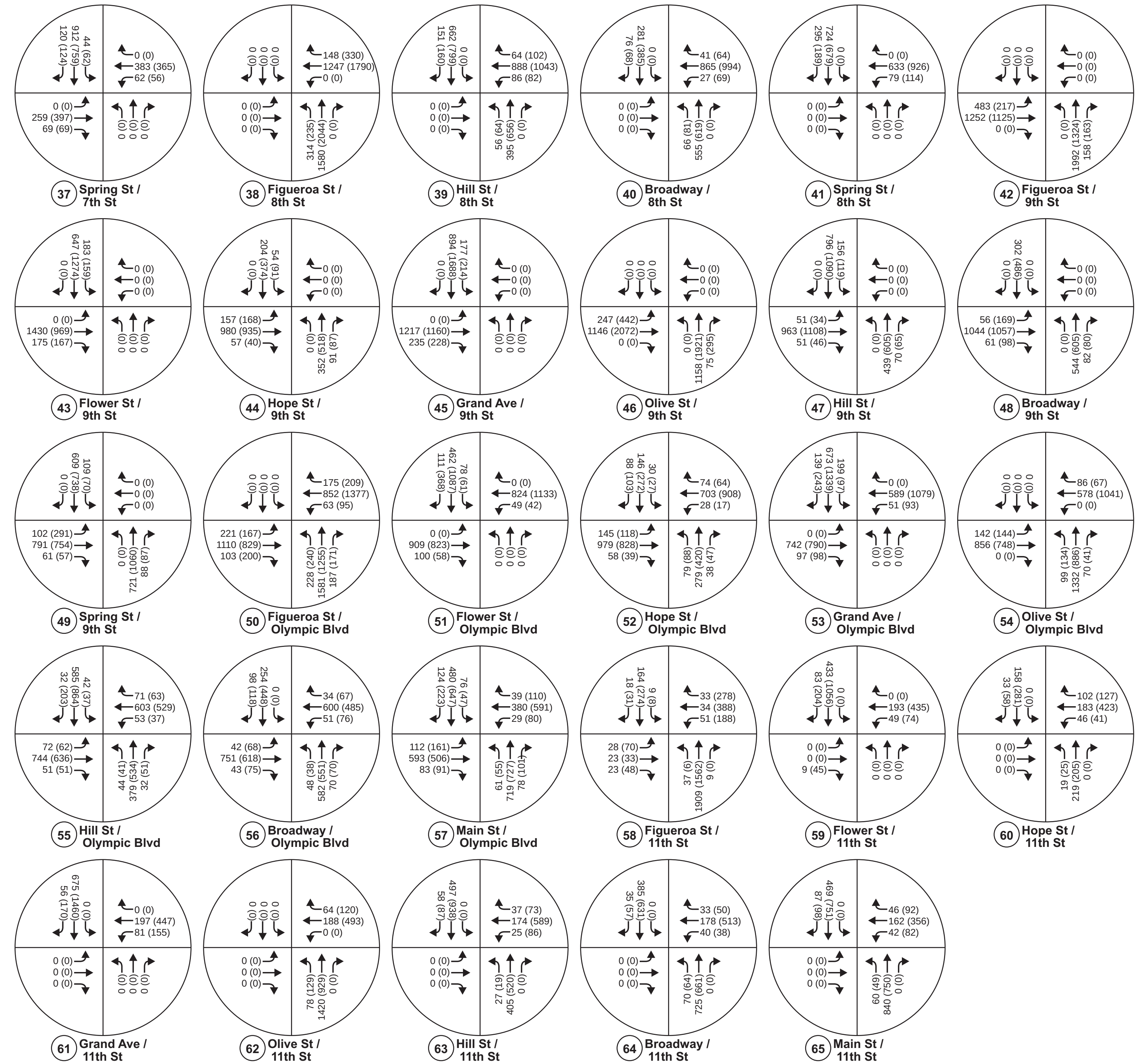


Figure 3-5: Existing (2014/2015) AM/PM Peak Hour Traffic Volumes (continued)

Table 3-2: Existing (2014/2015) Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	32.1	C	32.0	C
2	Grand Avenue / 1st Street	50.4	D	30.4	C
3	Olive Street / 1st Street	16.8	B	30.6	C
4	Hill Street / 1st Street	23.9	C	29.3	C
5	Broadway / 1st Street	22.4	C	22.8	C
6	Spring Street / 1st Street	19.6	B	19.4	B
7	Grand Avenue / 2nd Street	17.6	B	28.4	C
8	Hill Street / 2nd Street	17.7	B	23.3	C
9	Broadway / 2nd Street	26.3	C	23.6	C
10	Spring Street / 2nd Street	15.2	B	20.0	B
11	Grand Avenue / 3rd Street	2.9	A	18.1	B
12	Hill Street / 3rd Street	46.7	D	38.3	D
13	Broadway / 3rd Street	116.6	F	21.7	C
14	Spring Street / 3rd Street	32.8	C	24.8	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	19.7	B	19.5	B
17	Hill Street / 4th Street	18.3	B	10.8	B
18	Broadway / 4th Street	22.0	C	13.0	B
19	Spring Street / 4th Street	19.6	B	20.5	C
20	Grand Avenue / 5th Street	15.9	B	27.0	C
21	Olive Street / 5th Street	36.9	D	44.5	D
22	Hill Street / 5th Street	8.6	A	21.1	C
23	Broadway / 5th Street	9.0	A	16.4	B
24	Spring Street / 5th Street	16.8	B	12.0	B
25	Grand Avenue / 6th Street	19.9	B	20.7	C
26	Olive Street / 6th Street	13.1	B	14.1	B
27	Hill Street / 6th Street	9.3	A	8.1	A
28	Broadway / 6th Street	16.7	B	14.3	B
29	Spring Street / 6th Street	7.7	A	10.4	B
30	Figueroa Street / 7th Street	34.6	C	27.2	C
31	Flower Street / 7th Street	18.7	B	16.3	B
32	Hope Street / 7th Street	10.0	A	15.9	B
33	Grand Avenue / 7th Street	17.0	B	37.4	D
34	Olive Street / 7th Street	17.2	B	19.2	B
35	Hill Street / 7th Street	17.0	B	28.6	C
36	Broadway / 7th Street	14.3	B	16.9	B
37	Spring Street / 7th Street	7.7	A	30.7	C
38	Figueroa Street / 8th Street	19.2	B	42.3	D
39	Hill Street / 8th Street	8.0	A	28.9	C
40	Broadway / 8th Street	21.0	C	40.3	D
41	Spring Street / 8th Street	8.6	A	22.2	C

Table 3-2: Existing (2014/2015) Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
42	Figueroa Street / 9th Street	39.4	D	21.7	C
43	Flower Street / 9th Street	28.7	C	24.8	C
44	Hope Street / 9th Street	14.1	B	16.8	B
45	Grand Avenue / 9th Street	15.5	B	16.3	B
46	Olive Street / 9th Street	19.9	B	157.0	F
47	Hill Street / 9th Street	21.8	C	20.4	C
48	Broadway / 9th Street	6.6	A	13.8	B
49	Spring Street / 9th Street	12.9	B	29.9	C
50	Figueroa Street / Olympic Boulevard	70.7	E	66.7	E
51	Flower Street / Olympic Boulevard	17.4	B	27.0	C
52	Hope Street / Olympic Boulevard	19.8	B	21.0	C
53	Grand Avenue / Olympic Boulevard	15.4	B	24.1	C
54	Olive Street / Olympic Boulevard	14.5	B	24.4	C
55	Hill Street / Olympic Boulevard	17.1	B	25.8	C
56	Broadway / Olympic Boulevard	20.7	C	19.4	B
57	Main Street / Olympic Boulevard	23.9	C	36.3	D
58	Figueroa Street / 11th Street	19.7	B	26.4	C
59	Flower Street / 11th Street	18.8	B	16.0	B
60	Hope Street / 11th Street	14.9	B	30.4	C
61	Grand Avenue / 11th Street	10.1	B	17.5	B
62	Olive Street / 11th Street	17.0	B	18.0	B
63	Hill Street / 11th Street	5.5	A	25.7	C
64	Broadway / 11th Street	15.8	B	21.0	C
65	Main Street / 11th Street	10.9	B	15.3	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

3.3 PARKING

A parking inventory and conditions assessment was conducted in 2013 to collect the number of existing on-street parking and loading spaces that may be removed due to the proposed Project. Recently, Appendix G of the State CEQA Guidelines was updated to no longer require the analysis of parking as an environmental impact by a project. Nonetheless, this section provides a quantitative survey of the potential effects of the Project on the availability of on-street parking along the build alternatives' corridors.

Reduction in on-street parking due to the Project is presented in Section 4.4. The results of the existing on-street parking inventory are summarized in **Table 3-3**. Street segments along the proposed project alignment were surveyed to identify the existing number of on-street parking and loading spaces and associated peak period parking restriction information. A total of 435 existing on-street parking and loading spaces were counted.

Table 3-3: Existing On-Street Parking Inventory and Conditions

Street	Segment	Direction	Existing Spaces (Parking and Loading)	Existing Posted Parking / Loading Restrictions
1st Street	Grand Avenue to Olive Street	WB	0	Tow Away No Stopping Any Time
1st Street	Grand Avenue to Olive Street	EB	5	Tow Away No Stopping (7-9 AM, 4-6 PM. Except Saturday & Sundays), 1 Hour Parking (9 AM - 4 PM, Except Sundays)
1st Street	Olive Street to Hill Street	WB	0	Tow Away No Stopping Any Time
1st Street	Olive Street to Hill Street	EB	0	Tow Away No Stopping Any Time
1st Street	Hill Street to Broadway	WB	0	Tow Away No Stopping Any Time
1st Street	Hill Street to Broadway	EB	0	Tow Away No Stopping Any Time
Broadway	1st Street to 2nd Street	NB	5	Tow Away No Stopping (7-9 AM, 3-6 PM), No Parking (9 AM - 3 PM, 2 - 5 AM)
Broadway	1st Street to 2nd Street	SB	0	Tow Away No Stopping Any Time
Broadway	2nd Street to 3rd Street	NB	8	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	2nd Street to 3rd Street	SB	3	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	3rd Street to 4th Street	NB	2	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	3rd Street to 4th Street	SB	5	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	4th Street to 5th Street	NB	8	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	4th Street to 5th Street	SB	13	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	5th Street to 6th Street	NB	7	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	5th Street to 6th Street	SB	11	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	6th Street to 7th Street	NB	11	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	6th Street to 7th Street	SB	3	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	7th Street to 8th Street	NB	14	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	7th Street to 8th Street	SB	16	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	8th Street to 9th Street	NB	14	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	8th Street to 9th Street	SB	0	Red Curb (No Parking)
Broadway	9th Street to Olympic Boulevard	NB	5	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	9th Street to Olympic Boulevard	SB	2	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)
Broadway	Olympic Boulevard to 11th Street	NB	17	Tow Away No Stopping (7-9 AM & 3-6 PM), 1 Hour Parking (9 AM - 3 PM)
Broadway	Olympic Boulevard to 11th Street	SB	1	Tow Away No Stopping (7-9 AM & 3-7 PM for Monday Through Friday, 7 AM - 7 PM For Saturday & Sunday), No Parking (2 - 5 AM)

Table 3-3: Existing On-Street Parking Inventory and Conditions

Street	Segment	Direction	Existing Spaces (Parking and Loading)	Existing Posted Parking / Loading Restrictions
11th Street	Broadway to Hill Street	WB	6	1 Hour Parking (8 AM - 6 PM)
11th Street	Hill Street to Olive Street	WB	10	1 Hour Parking (8 AM - 6 PM)
11th Street	Olive Street to Grand Avenue	WB	13	1 Hour Parking (8 AM - 6 PM)
11th Street	Grand Avenue to Hope Street	WB	12	2 Hour Parking (8 AM - 6 PM)
11th Street	Hope Street to Flower Street	WB	7	2 Hour Parking (8 AM - 5 PM)
11th Street	Flower Street to Figueroa Street	WB	0	No Stopping Any Time
Figueroa Street	11th Street to Olympic Boulevard	NB & SB	0	Red Curb (No Parking)
Figueroa Street	Olympic Boulevard to 9th Street	NB	10	1 Hour Parking (9 AM -3 PM)
Figueroa Street	9th Street to 8th Street	NB	9	1 Hour Parking (9 AM -3 PM) [west], 1 Hour Parking (8 AM -8 PM) [east]
Figueroa Street	8th Street to 7th Street	NB	9	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
9th Street	Figueroa Street to Flower Street	EB	0	Tow Away No Stopping Any Time
9th Street	Flower Street to Hope Street	EB	17	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
9th Street	Hope Street to Grand Avenue	EB	15	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
9th Street	Grand Avenue to Olive Street	EB	13	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
9th Street	Olive Street to Hill Street	EB	18	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Figueroa Street to Flower Street	EB	7	1 Hour Parking (9 AM -3 PM)
7th Street	Figueroa Street to Flower Street	WB	4	1 Hour Parking (9 AM -3 PM)
7th Street	Flower Street to Hope Street	EB	5	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Flower Street to Hope Street	WB	8	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Hope Street to Grand Avenue	EB	5	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Hope Street to Grand Avenue	WB	1	Yellow Curb (Commercial Loading)
7th Street	Grand Avenue to Olive Street	EB	6	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Grand Avenue to Olive Street	WB	6	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Olive Street to Hill Street	EB	5	Tow Away No Stopping (7-9 AM & 3-7 PM), 1 Hour Parking (9 AM - 3 PM)
7th Street	Olive Street to Hill Street	WB	4	Tow Away No Stopping (3-7 PM), White Curb (Passenger Loading)
Hill Street	1st Street to 2nd Street	NB	7	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	1st Street to 2nd Street	SB	0	Red Curb (No Parking)
Hill Street	2nd Street to 3rd Street	NB	10	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	2nd Street to 3rd Street	SB	5	Tow Away No Stopping (7-9 AM & 4-6 PM), 1 Hour Parking (9 AM - 4 PM)
Hill Street	3rd Street to 4th Street	NB	9	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	3rd Street to 4th Street	SB	6	Tow Away No Stopping (7-9 AM), 1 Hour Parking (9 AM - 6 PM)
Hill Street	4th Street to 5th Street	NB	13	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	4th Street to 5th Street	SB	3	Yellow Curb (Commercial Loading)
Hill Street	5th Street to 6th Street	NB	0	Tow Away No Stopping Any Time
Hill Street	5th Street to 6th Street	SB	0	Tow Away No Stopping Any Time
Hill Street	6th Street to 7th Street	NB	12	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	6th Street to 7th Street	SB	6	Tow Away No Stopping (7-9 AM), 1 Hour Parking (9 AM - 6 PM)
Hill Street	7th Street to 8th Street	NB	10	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	7th Street to 8th Street	SB	3	Tow Away No Stopping (7-9 AM), 1 Hour Parking (9 AM - 6 PM)
Hill Street	8th Street to 9th Street	NB	6	Tow Away No Stopping (4-7 PM), 1 Hour Parking (8 AM - 4 PM)
Hill Street	8th Street to 9th Street	SB	5	1 Hour Parking (8 AM - 6 PM)

3.4 OTHER MODES

3.4.1 Pedestrians

In urban settings, industry standards recommend that sidewalks be a minimum of six to ten feet wide. The first four feet from the curb allow for a buffer against moving traffic as well as space for street hardware, including light poles and street signs. According to City of Los Angeles' *Downtown Design Guide* and *Downtown Street Standards*, the secondary arterial sidewalk widths along the proposed Project alignment are predominantly fifteen feet but range from twelve to eighteen feet. Because downtown streets are built-out, some sidewalks may not meet recommended dimensions. In addition, most of the signalized intersections along the proposed Project alignments are currently operating pre-timed with countdown pedestrian signals. Although there are no CEQA thresholds available to determine the significance of Project impacts to pedestrian circulation, the City of Los Angeles provides the *L.A. CEQA Thresholds Guide (Thresholds Guide)* as a resource to address project access for planned developments. The *Thresholds Guide* is mostly designed to guide residential and commercial types of developments and specifically looks at access to and from the project site (site access points), that may include safety, operational, or capacity impacts related to vehicular/vehicular, vehicular/bicycle or vehicle/pedestrian conflicts. Aside from the Maintenance and Storage Facility (MSF) and the Traction Power Sub-Stations (TPSS) sites that would require their own site, most of the Project would be implemented within shared traffic lanes in the public right of way. Nonetheless, the Project would be designed to minimize, if not avoid, vehicular/vehicular, vehicular/bicycle and/or vehicle/pedestrian conflicts. Design elements of the streetcar system may include but not be limited to the following: streetcars equipped with lighting, audible warning devices; train to wayside communication (TWC); signage; striping; wayfinding; station accessibility (ADA compliance); and ease of boarding.

The central downtown area experiences heavy pedestrian traffic on weekdays, particularly during the commute and lunch hours. Much of the pedestrian traffic occurs in areas with daytime employment such as Bunker Hill, the Financial District, and the Historic Core. Some pedestrian movement occurs between the Civic Center and Little Tokyo along 1st and 2nd Streets. The Fashion District attracts many pedestrians during both weekdays and weekends, as does Broadway between 2nd and 7th Streets. Due to the location of the Wilshire Grand and Sheraton Hotels, as well as "Restaurant Row," 7th Street often experiences large volumes of pedestrians throughout the day. With the on-going growth due to redevelopment that is taking place in the downtown area, there are also large volumes of pedestrians during the off-peak hours of the day. In general, redevelopment throughout downtown has increased the housing supply and retail services which adds to the increased pedestrian volumes due to the emergence of popular nighttime destinations. In addition, there are regularly scheduled monthly art walks in the Gallery Row and daily events at Staples Center and the LA Live Campus.

3.4.2 Bicycles

The Federal and State transportation system recognizes three primary bikeway facilities; Bicycle Paths (Class I), Bicycle Lanes (Class II), and Bicycle Routes (Class III). Bicycle Paths (Class I) are exclusive car free facilities that are typically not located within a roadway area. Bicycle Lanes (Class II) are designated striped lanes on surface streets. Bicycle Routes (Class III) are unstriped bike routes that are designated by green "bike route" signage. According to the *City of Los Angeles 2010 Bicycle Plan*, the bikeway facilities within the project area, such as 1st Street, Spring Street, Main Street, Grand Avenue (south of Wilshire Boulevard), and Olive Street (South of 7th Street) are identified as Class II bikeways. With the approval of the *City of Los Angeles 2010 Bicycle Plan*, various elements are to be implemented throughout the City, including the downtown area. As noted in the previous section, the Thresholds Guide is mostly designed to guide residential and commercial types of development and specifically looks at access to and from the project site (site access points), that may include safety, operational, or capacity impacts related to vehicular/vehicular, vehicular/bicycle or vehicle/pedestrian conflicts. Aside from the MSF and the TPSS that would require their own site, most of the Project would be implemented within shared traffic lanes in the public right of way. Nonetheless, Project would be designed to minimize, if not avoid, vehicular/vehicular, vehicular/bicycle and/or vehicle/pedestrian conflicts. Design elements of the streetcar system may include but not be limited to the following: streetcars equipped with lighting, audible warning devices; train to wayside communication (TWC); signage; striping; wayfinding; and signage to alert bicyclists to the presence of streetcar tracks with open flangeway areas would also be provided. A comprehensive analysis of this issue is documented in the Alta Planning+Design Report *Bicycle Interactions and Streetcars: Lessons Learned and Recommendations*. The specific design features to reduce conflicts would be identified in the design phase of the project. Available mitigation measures to reduce potential impacts may be limited to signage, pavement marking, and education.

Chapter 4 – Environmental Impacts

4.1 PUBLIC TRANSIT

4.1.1 Existing Conditions

The existing conditions without Project scenario, which is also referred to as the No Project Alternative, is presented in Section 3.1. An analysis of the project under existing conditions is considered a hypothetical condition which assumes the project has been constructed and is operating in the existing environment. The public transit environmental impacts for both the 7th Street and 9th Street Alternatives with and without the Grand Avenue Extension, including the estimated daily streetcar ridership, would be similar to those described in the Opening Year (2020) Alternatives. This is detailed below in Section 4.1.2.

4.1.2 Opening Year (2020)

Opening Year (2020) Without Project

The Opening Year (2020) without Project scenario, which is also referred to as the No Project Alternative, would continue to maintain existing operating conditions and the preservation of the current services provided by the transit operators. However, it is anticipated that Phase 2 of the Metro Exposition Line to Santa Monica will be in service in 2016. This project extends the alignment from its current terminus in Culver City to the proposed new terminus in Santa Monica. Furthermore, by 2020, the Regional Connector project will provide a new seamless connection between the 7th Street/Metro Center Station and Union Station. The Regional Connector will add three new stations, two of which are in close proximity to the streetcar alignment at 2nd Street/Hope Street and 2nd Street/Broadway. The Regional Connector will enable the Blue/Expo Lines to be interlined with the Gold Line and therefore eliminate the need for Gold, Blue, and Expo Line passengers to transfer to the Red and Purple Line at the 7th Street/Metro Center and Union Station to reach their final destination within the downtown area.

Opening Year (2020) With 7th Street Alternatives

The 7th Street Alternative with the Grand Avenue Extension would construct and implement streetcar service along an alignment that would begin on Grand Avenue just north of 2nd Street, then continue northward until turning east on 1st Street. From 1st Street, the streetcars would turn south on Broadway, traveling 1.25 miles to 11th Street, where they would turn west and continue on to Figueroa Street. The streetcars would then turn north on Figueroa Street and travel 0.5 mile north to 7th Street where they would turn east. From 7th Street, the streetcars would turn north on Hill Street, then continue back to 1st Street, completing the circuit by turning west on 1st Street to return to the streetcar stop on Grand Avenue. The 7th Street Alternative without the Grand Avenue Extension would construct and implement streetcar service along a one-way loop that would run from 1st Street on the north, through downtown Los Angeles, to 11th Street on the south. There would be no alignment west of the 1st Street and Hill Street intersection. The primary purposes of the proposed Project are to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. The Project will supplement existing transit in the area, including regional transit services and local circulators like DASH. While both the Project and DASH have routes that circulate through the downtown area, DASH service also extends outside the Project study area and covers a larger geographic service area. Along the proposed streetcar alignment, the public transit service identified in the without Project condition would remain unchanged and would operate alongside the proposed Project. However, if any modifications to the bus operations or stop locations are needed, they will be thoroughly evaluated by the appropriate transit agencies and adjusted accordingly. This transit option will increase the frequency of service between downtown origins and destinations, resulting in an added benefit to the traveler. The projected daily ridership for the Opening Year (2020) 7th Street Alternative is expected to range between 4,125 and 5,575 riders.

Opening Year (2020) With 9th Street Alternatives

The 9th Street Alternative with the Grand Avenue Extension would construct and implement streetcar service along a circuit that runs from 1st Street through downtown Los Angeles to 11th Street. The alignment, beginning at its terminus on Grand Avenue, would run northbound and turn eastbound on 1st Street. From 1st Street, the streetcar system would turn southbound down Broadway and travel 1.25 miles to 11th Street, where the streetcar would turn westbound and continue on to the Staples Center and the LA live campus at Figueroa Street. The streetcar would then turn north on Figueroa Street and travel 0.25 mile north to 9th Street, where it would turn east. From 9th Street, the streetcar would turn north onto Hill Street and continue up to 1st Street, completing the circuit and turning westbound on 1st Street to return to the streetcar terminal stop on Grand Avenue just south of 1st Street. The 9th Street Alternative without the Grand Avenue Extension would follow the same one-way loop as the 7th Street Alternative without the Grand Avenue Extension, but it would also run eastbound on 9th Street between Figueroa Street and Hill Street, rather than 7th Street. As noted before, the primary purposes of the proposed Project are to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. The Project will supplement existing transit in the area, including regional transit services and local circulators like DASH. While both the Project and DASH have routes that circulate through the downtown area, DASH service also extends outside the Project study area and covers a larger geographic service area. Along the proposed streetcar alignment, the public transit service identified in the without Project condition would remain unchanged and would operate alongside the proposed Project. However, if any modifications to the bus operations or stop locations are needed, they will be thoroughly evaluated by the appropriate transit agencies and adjusted accordingly. This transit option will increase the frequency of service between downtown origins and destinations, resulting in an added benefit to the traveler. The projected daily ridership for the Opening Year (2020) 9th Street Alternative is expected to range between 3,850 and 5,775 riders.

4.1.3 Horizon Year (2040)

Horizon Year (2040) Without Project

Transit service under the without Project condition would be focused on preserving existing services and making expansion of service improvements consistent with ongoing transit provider planning and programming activities. Each transit operator analyzes and evaluates their service periodically and based on the results of their study, they restructure and adjust services accordingly. It is likely that some bus line service would be reorganized and restructured to provide connections with the new rail lines. It is also anticipated that the current bus service would predominantly remain the same with potentially shortened headways for some of the heavily traveled lines. It would be speculative to conjecture exact routing or service changes at this time.

Horizon Year (2040) With 7th Street Alternatives

The proposed Project is intended to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. This additional transit service would provide an added incentive for travelers in the downtown area to utilize the various available transit options. On the proposed streetcar alignment, the public transit service identified in the without Project condition would predominantly remain unchanged and would operate alongside the proposed Project. However, the added transit service within the downtown area would result in a benefit to public transit users. In addition, modifications to bus operations or stop locations, if needed, would be evaluated by the appropriate transit agencies and adjusted accordingly. The daily ridership for the streetcar is anticipated to increase above the opening year given these conditions.

Horizon Year (2040) With 9th Street Alternatives

The proposed Project is intended to enhance mobility and transit circulation and support the growth and revitalization of downtown Los Angeles, including its historic districts. This additional transit service would provide an added incentive for travelers in the downtown area to utilize the streetcar. On the proposed streetcar alignment, the public transit service identified in the without Project condition would predominantly remain unchanged and would operate alongside the proposed Project. However, the added transit service within the downtown area would result in a benefit to public transit users. In addition, modifications to bus operations or stop locations, if needed, would be evaluated by the appropriate transit agencies and adjusted accordingly. The daily ridership for the streetcar is anticipated to increase above the opening year given these conditions.

4.2 STREETS AND HIGHWAYS

Project Improvements and Project Design Elements

For future (2020 and 2040) conditions, it is expected that various City improvement projects would be implemented independently of the Project. These major streetscape improvement projects include the Broadway Streetscape Master Plan (roadway configuration between the limits of 2nd Street and Olympic Boulevard); the *MyFigueroa* Corridor Streetscape project, which includes roadway improvements on Figueroa Street and the reconfiguration of 11th Street between Figueroa Street and Broadway; and various segments of the 2010 Bicycle Plan, which includes the reconfiguration of 7th Street between Figueroa Street and Main Street and the protected bike lanes along Main Street and Spring Street.

The following proposed street design elements are to be implemented as part of the Project. Some of these elements would potentially help in minimizing roadway delay and improving streetcar run times.

<u>Project Design Element: Proposed Lane Reconfiguration on Hill Street</u>

In order to accommodate the streetcar, Hill Street would need to be reconfigured, however, the proposed changes would not reduce the existing number of travel lanes along Hill Street. Instead, the removal of on-street parking and/or center turn lanes along certain segments would be needed to accommodate the streetcar alignment, which is located along the curb lane in the northbound direction. A typical mid-block conceptual cross-section for the before and after conditions along Hill Street is shown as part of the project description and was previously presented in **Figure 1-4**. These Hill Street lane reconfigurations are proposed between 1st and 7th Streets for the 7th Street Alternative or between 1st and 9th Street for the 9th Street Alternative. This proposed reconfiguration would include bump outs at some of the street corners to accommodate the station platforms, which would create and allow for full-time on-street parking/loading spaces along the east side of Hill Street. The station platforms are predominantly located on the near side of the intersection.

To confirm the adequacy of Hill Street to accommodate streetcar operations, field observations of current traffic circulation patterns, roadway lane configurations and peak period parking restrictions were conducted during the PM peak period (3:00 p.m. to 6:00 p.m.) on a typical representative weekday. The objective was to determine if the total curb-to-curb width of Hill Street would be adequate to accommodate at least two travel lanes in each direction with the northbound curb lane also being utilized by the streetcar alignment. The proposed reconfiguration would allow for a two-way left turn median between 4th and 6th Streets to provide enhanced driveway access to neighboring businesses and off-street parking lots. As a result of this proposed lane reconfiguration along Hill Street, the proposed conceptual design street dimensions were compared with the *Downtown Street Standards* and it was confirmed that they are within the maximum street dimensions currently shown for Hill Street.

Project Design Element: Proposed Traffic Signal Improvements

Traffic signal improvements are proposed in efforts to maximize efficiencies of the roadway network and operations of the Project. The following traffic signal improvements are recommended at the following locations:

- Protected northbound right-turn phase at the intersection of Grand Avenue / 1st Street for both the 7th Street and 9th Street Alternatives with the Grand Avenue Extension
- Protected northbound left-turn phase at the intersection of Hill Street / 1st Street for both the 7th Street and 9th Street Alternatives with the Grand Avenue Extension
- Protected eastbound left-turn phase at the intersection of Hill Street / 7th Street for the 7th Street Alternative with and without the Grand Avenue Extension
- Redistribute the green time within the existing signal cycle length to provide more green time to the streetcar movement/direction. The amount of green time would range from 5 seconds to up to 10% of the cycle length (7 seconds for the AM peak hour and 9 seconds for the PM peak hour) when the transit vehicle is present and only if the controller has enough time in the cycle to provide it.

Project Design Element: Proposed Right Turn Lanes

In order to improve operations of the streetcar, including its run time, a Speed Improvements Study was conducted to evaluate potential physical and operational treatments along the streetcar alignment. This study, which is attached as an appendix, was initiated in August 2015 and completed in September 2015. Proposed right turn lane improvements were identified at various intersections along Broadway and Hill Street to allow for the flow of vehicles in the through lanes, which would help reduce delay and optimize operating time for the streetcar. The following right turn lanes would be incorporated as part of the project definition:

- A right turn pocket lane for the southbound direction of Broadway at 3rd Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks
- A right turn pocket lane for the southbound direction of Broadway at 5th Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks
- A right turn pocket lane for the southbound direction of Broadway at 8th Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks

- A right turn pocket lane for the southbound direction of Broadway at 11th Street to enhance the streetcar run time by segregating the right turn streetcar movement from the through vehicular traffic movement
- A right turn pocket lane for the northbound direction of Hill Street at 6th Street to enhance the streetcar run time by segregating the right turn vehicular traffic movement from the through streetcar movement and to provide storage so that right turn queues do not spillover onto the northbound Hill Street through movement and the streetcar tracks

The Project will ensure that these proposed lane configurations would be in conformance with applicable City roadway and design standards, such as the *Downtown Street Standards* (DSS) and the *Broadway Streetscape Master Plan* (BSMP).

4.2.1 Existing (2014/2015) Conditions

Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension

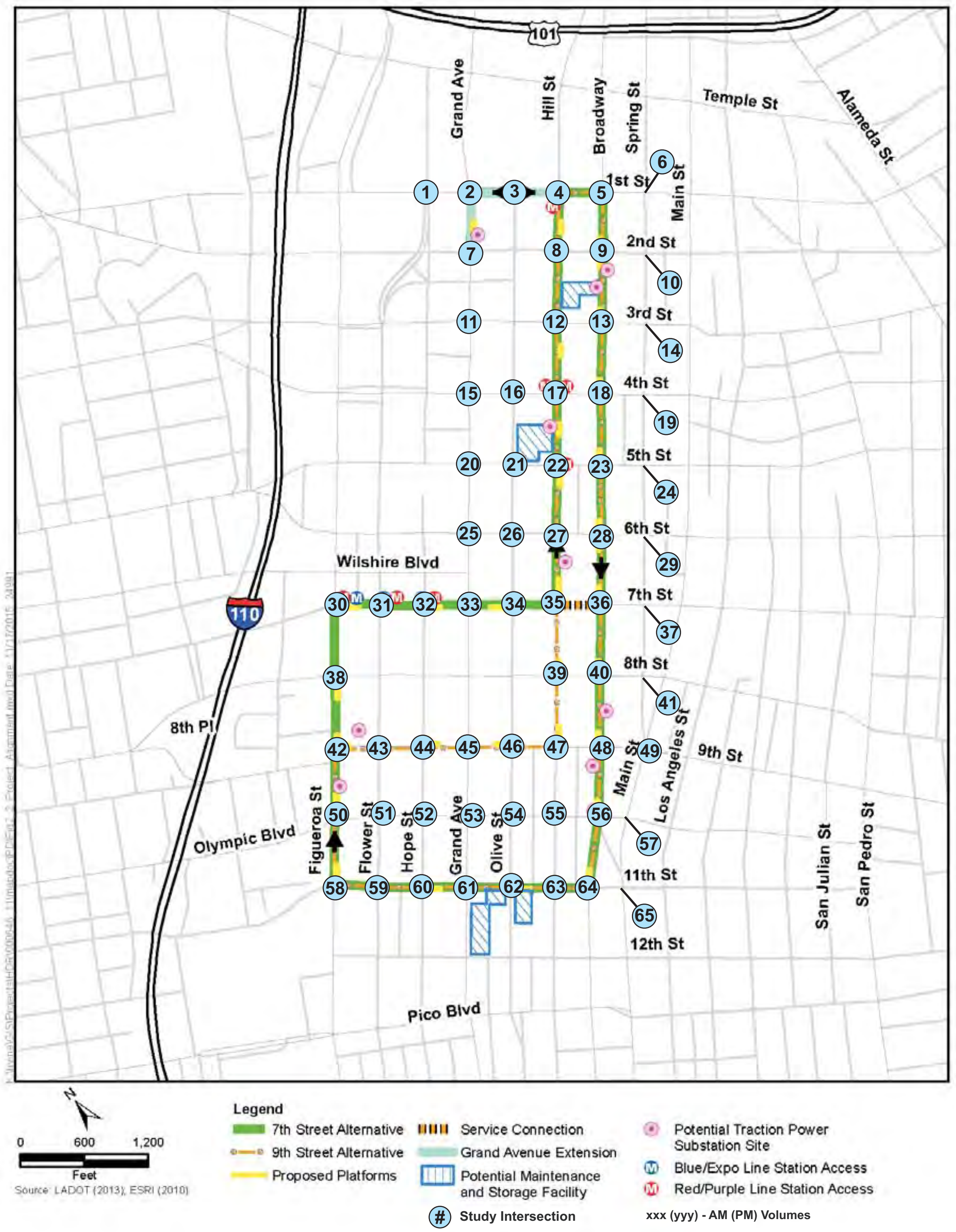
This scenario consists of adding the 7th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Existing (2014/2015) AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes are illustrated in **Figure 4-1.**

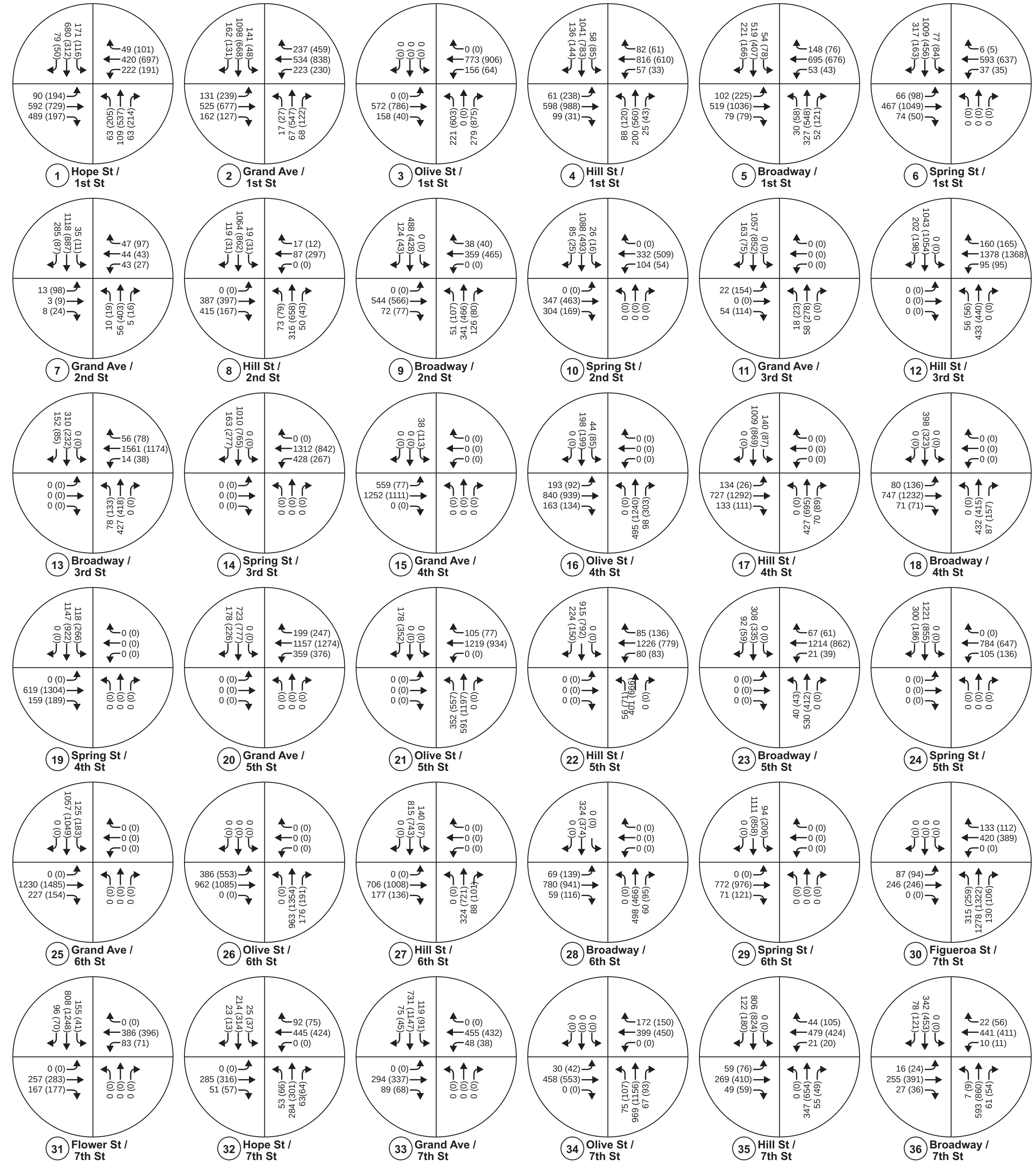
The Existing (2014/2015) with the 7th Street Alternative with the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS are provided in **Table 4-1** and also included in **Appendix D**. The intersection analysis showed that three of the 65 locations operate at LOS E or F. The remaining 62 intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the three locations operating at LOS E or F are the same intersections identified in Section 3.2.3 as part of the Existing (2014/2015) level of service analysis.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 7th Street Alternative with the Grand Avenue Extension were compared with the Existing (2014/2015) to identify significantly (CEQA) affected locations. As shown in **Table 4-2** and **Table 4-3**, three of the intersections are anticipated to be impacted by this alternative of the proposed Project.

The intersections of Hill Street and 1st Street and Hill Street and 7th Street are significantly impacted during the AM peak hour. The intersection of Grand Avenue and 1st Street is significantly impacted during the PM peak hour. The three intersections are significantly impacted due to the addition of a protected signal phase for the streetcar. Although three intersections are significantly impacted per the significance thresholds, they are operating at LOS D or better, which is considered an acceptable level of service.

In addition, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.

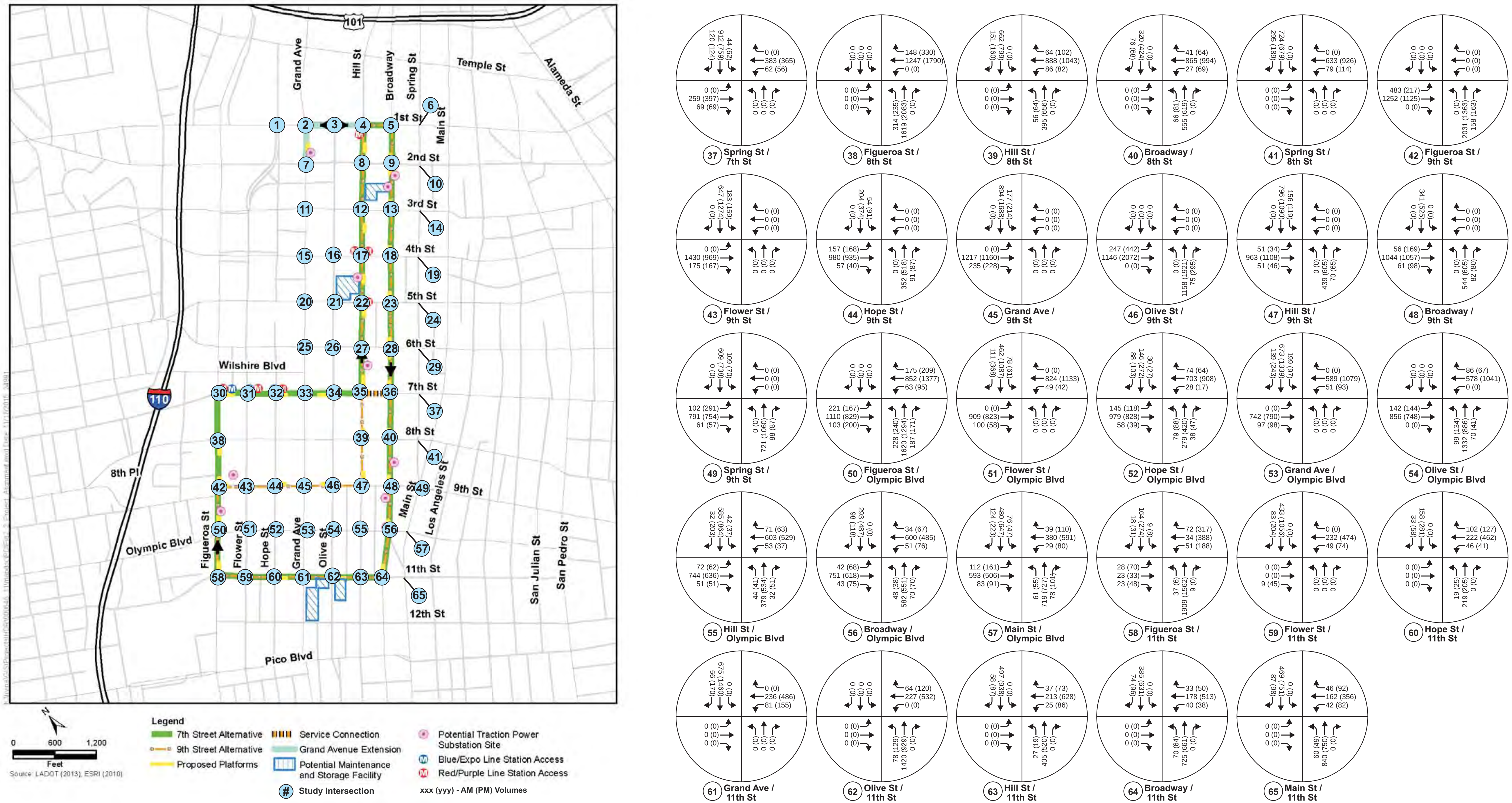




INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-1: Existing (2014/2015) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes



Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-1: Existing (2014/2015) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes (continued)

Table 4-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	32.1	C	32.4	C
2	Grand Avenue / 1st Street	51.7	D	39.0	D
3	Olive Street / 1st Street	14.8	B	27.0	C
4	Hill Street / 1st Street	35.8	D	34.3	C
5	Broadway / 1st Street	22.3	C	21.9	C
6	Spring Street / 1st Street	18.6	B	19.6	B
7	Grand Avenue / 2nd Street	17.6	B	20.0	B
8	Hill Street / 2nd Street	22.9	C	18.8	B
9	Broadway / 2nd Street	26.1	C	23.9	C
10	Spring Street / 2nd Street	15.2	B	19.9	B
11	Grand Avenue / 3rd Street	2.9	A	17.2	B
12	Hill Street / 3rd Street	46.8	D	37.8	D
13	Broadway / 3rd Street	115.2	F	21.1	C
14	Spring Street / 3rd Street	32.8	C	24.8	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	19.7	B	19.5	B
17	Hill Street / 4th Street	18.7	B	11.7	B
18	Broadway / 4th Street	22.4	C	13.6	B
19	Spring Street / 4th Street	19.6	B	20.4	C
20	Grand Avenue / 5th Street	15.9	B	26.9	C
21	Olive Street / 5th Street	37.6	D	45.0	D
22	Hill Street / 5th Street	8.7	A	15.5	B
23	Broadway / 5th Street	9.7	A	17.0	B
24	Spring Street / 5th Street	16.8	B	12.0	B
25	Grand Avenue / 6th Street	19.9	B	20.7	C
26	Olive Street / 6th Street	15.1	B	14.1	B
27	Hill Street / 6th Street	8.4	A	6.1	A
28	Broadway / 6th Street	16.0	B	15.0	B
29	Spring Street / 6th Street	7.8	A	10.3	B
30	Figueroa Street / 7th Street	35.7	D	25.0	C
31	Flower Street / 7th Street	18.7	B	16.4	B
32	Hope Street / 7th Street	10.2	B	15.7	B
33	Grand Avenue / 7th Street	16.9	B	37.4	D
34	Olive Street / 7th Street	16.2	B	19.0	B
35	Hill Street / 7th Street	45.6	D	33.9	C
36	Broadway / 7th Street	16.3	B	18.9	B
37	Spring Street / 7th Street	7.7	A	30.7	C
38	Figueroa Street / 8th Street	17.8	B	31.6	C
39	Hill Street / 8th Street	4.1	A	27.3	C
40	Broadway / 8th Street	19.8	B	43.0	D

Table 4-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	8.6	A	22.2	C
42	Figueroa Street / 9th Street	40.4	D	22.3	C
43	Flower Street / 9th Street	29.3	C	25.2	C
44	Hope Street / 9th Street	14.1	B	16.8	B
45	Grand Avenue / 9th Street	15.5	B	16.3	B
46	Olive Street / 9th Street	19.9	B	157.0	F
47	Hill Street / 9th Street	24.5	C	20.2	C
48	Broadway / 9th Street	6.3	A	14.3	B
49	Spring Street / 9th Street	12.9	B	29.9	C
50	Figueroa Street / Olympic Boulevard	70.2	E	66.6	E
51	Flower Street / Olympic Boulevard	17.4	B	26.9	C
52	Hope Street / Olympic Boulevard	19.8	B	21.0	C
53	Grand Avenue / Olympic Boulevard	15.4	B	24.1	C
54	Olive Street / Olympic Boulevard	14.6	B	24.5	C
55	Hill Street / Olympic Boulevard	17.2	B	24.8	C
56	Broadway / Olympic Boulevard	20.9	C	19.7	B
57	Main Street / Olympic Boulevard	23.9	C	36.3	D
58	Figueroa Street / 11th Street	20.0	B	26.4	C
59	Flower Street / 11th Street	18.6	B	15.3	B
60	Hope Street / 11th Street	15.8	B	22.4	C
61	Grand Avenue / 11th Street	9.8	A	17.4	B
62	Olive Street / 11th Street	17.4	B	17.2	B
63	Hill Street / 11th Street	6.2	A	25.9	C
64	Broadway / 11th Street	16.1	B	18.1	B
65	Main Street / 11th Street	10.9	B	15.3	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-2: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	51.7	D	1.3	NO
3	Olive Street / 1st Street	16.8	B	14.8	B	-2.0	NO
4	Hill Street / 1st Street	23.9	C	35.8	D	11.9	YES
5	Broadway / 1st Street	22.4	C	22.3	C	-0.1	NO
6	Spring Street / 1st Street	19.6	B	18.6	B	-1.0	NO
7	Grand Avenue / 2nd Street	17.6	B	17.6	B	0.0	NO
8	Hill Street / 2nd Street	17.7	B	22.9	C	5.2	NO
9	Broadway / 2nd Street	26.3	C	26.1	C	-0.2	NO
10	Spring Street / 2nd Street	15.2	B	15.2	B	0.0	NO
11	Grand Avenue / 3rd Street	2.9	A	2.9	A	0.0	NO
12	Hill Street / 3rd Street	46.7	D	46.8	D	0.1	NO
13	Broadway / 3rd Street	116.6	F	115.2	F	-1.4	NO
14	Spring Street / 3rd Street	32.8	C	32.8	C	0.0	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	19.7	B	19.7	B	0.0	NO
17	Hill Street / 4th Street	18.3	B	18.7	B	0.4	NO
18	Broadway / 4th Street	22.0	C	22.4	C	0.4	NO
19	Spring Street / 4th Street	19.6	B	19.6	B	0.0	NO
20	Grand Avenue / 5th Street	15.9	B	15.9	B	0.0	NO
21	Olive Street / 5th Street	36.9	D	37.6	D	0.7	NO
22	Hill Street / 5th Street	8.6	A	8.7	A	0.1	NO
23	Broadway / 5th Street	9.0	A	9.7	A	0.7	NO
24	Spring Street / 5th Street	16.8	B	16.8	B	0.0	NO
25	Grand Avenue / 6th Street	19.9	B	19.9	B	0.0	NO
26	Olive Street / 6th Street	13.1	B	15.1	B	2.0	NO
27	Hill Street / 6th Street	9.3	A	8.4	A	-0.9	NO
28	Broadway / 6th Street	16.7	B	16.0	B	-0.7	NO
29	Spring Street / 6th Street	7.7	A	7.8	A	0.1	NO
30	Figueroa Street / 7th Street	34.6	C	35.7	D	1.1	NO
31	Flower Street / 7th Street	18.7	B	18.7	B	0.0	NO
32	Hope Street / 7th Street	10.0	A	10.2	B	0.2	NO
33	Grand Avenue / 7th Street	17.0	B	16.9	B	-0.1	NO
34	Olive Street / 7th Street	17.2	B	16.2	B	-1.0	NO
35	Hill Street / 7th Street	17.0	B	45.6	D	28.6	YES
36	Broadway / 7th Street	14.3	B	16.3	B	2.0	NO

Table 4-2: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO
38	Figueroa Street / 8th Street	19.2	B	17.8	B	-1.4	NO
39	Hill Street / 8th Street	8.0	A	4.1	A	-3.9	NO
40	Broadway / 8th Street	21.0	C	19.8	B	-1.2	NO
41	Spring Street / 8th Street	8.6	A	8.6	A	0.0	NO
42	Figueroa Street / 9th Street	39.4	D	40.4	D	1.0	NO
43	Flower Street / 9th Street	28.7	C	29.3	C	0.6	NO
44	Hope Street / 9th Street	14.1	B	14.1	B	0.0	NO
45	Grand Avenue / 9th Street	15.5	B	15.5	B	0.0	NO
46	Olive Street / 9th Street	19.9	B	19.9	B	0.0	NO
47	Hill Street / 9th Street	21.8	C	24.5	C	2.7	NO
48	Broadway / 9th Street	6.6	A	6.3	A	-0.3	NO
49	Spring Street / 9th Street	12.9	B	12.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	70.7	E	70.2	E	-0.5	NO
51	Flower Street / Olympic Boulevard	17.4	B	17.4	B	0.0	NO
52	Hope Street / Olympic Boulevard	19.8	B	19.8	B	0.0	NO
53	Grand Avenue / Olympic Boulevard	15.4	B	15.4	B	0.0	NO
54	Olive Street / Olympic Boulevard	14.5	B	14.6	B	0.1	NO
55	Hill Street / Olympic Boulevard	17.1	B	17.2	B	0.1	NO
56	Broadway / Olympic Boulevard	20.7	C	20.9	C	0.2	NO
57	Main Street / Olympic Boulevard	23.9	C	23.9	C	0.0	NO
58	Figueroa Street / 11th Street	19.7	B	20.0	B	0.3	NO
59	Flower Street / 11th Street	18.8	B	18.6	B	-0.2	NO
60	Hope Street / 11th Street	14.9	B	15.8	B	0.9	NO
61	Grand Avenue / 11th Street	10.1	B	9.8	A	-0.3	NO
62	Olive Street / 11th Street	17.0	B	17.4	B	0.4	NO
63	Hill Street / 11th Street	5.5	A	6.2	A	0.7	NO
64	Broadway / 11th Street	15.8	B	16.1	B	0.3	NO
65	Main Street / 11th Street	10.9	B	10.9	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-3: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.0	C	32.4	C	0.4	NO
2	Grand Avenue / 1st Street	30.4	C	39.0	D	8.6	YES
3	Olive Street / 1st Street	30.6	C	27.0	C	-3.6	NO
4	Hill Street / 1st Street	29.3	C	34.3	C	5.0	NO
5	Broadway / 1st Street	22.8	C	21.9	C	-0.9	NO
6	Spring Street / 1st Street	19.4	B	19.6	B	0.2	NO
7	Grand Avenue / 2nd Street	28.4	C	20.0	B	-8.4	NO
8	Hill Street / 2nd Street	23.3	C	18.8	B	-4.5	NO
9	Broadway / 2nd Street	23.6	C	23.9	C	0.3	NO
10	Spring Street / 2nd Street	20.0	B	19.9	B	-0.1	NO
11	Grand Avenue / 3rd Street	18.1	B	17.2	B	-0.9	NO
12	Hill Street / 3rd Street	38.3	D	37.8	D	-0.5	NO
13	Broadway / 3rd Street	21.7	C	21.1	C	-0.6	NO
14	Spring Street / 3rd Street	24.8	C	24.8	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	19.5	B	19.5	B	0.0	NO
17	Hill Street / 4th Street	10.8	B	11.7	B	0.9	NO
18	Broadway / 4th Street	13.0	B	13.6	B	0.6	NO
19	Spring Street / 4th Street	20.5	C	20.4	C	-0.1	NO
20	Grand Avenue / 5th Street	27.0	C	26.9	C	-0.1	NO
21	Olive Street / 5th Street	44.5	D	45.0	D	0.5	NO
22	Hill Street / 5th Street	21.1	C	15.5	B	-5.6	NO
23	Broadway / 5th Street	16.4	B	17.0	B	0.6	NO
24	Spring Street / 5th Street	12.0	B	12.0	B	0.0	NO
25	Grand Avenue / 6th Street	20.7	C	20.7	C	0.0	NO
26	Olive Street / 6th Street	14.1	B	14.1	B	0.0	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	14.3	B	15.0	B	0.7	NO
29	Spring Street / 6th Street	10.4	B	10.3	B	-0.1	NO
30	Figueroa Street / 7th Street	27.2	C	25.0	C	-2.2	NO
31	Flower Street / 7th Street	16.3	B	16.4	B	0.1	NO
32	Hope Street / 7th Street	15.9	B	15.7	B	-0.2	NO
33	Grand Avenue / 7th Street	37.4	D	37.4	D	0.0	NO
34	Olive Street / 7th Street	19.2	B	19.0	B	-0.2	NO
35	Hill Street / 7th Street	28.6	C	33.9	C	5.3	NO
36	Broadway / 7th Street	16.9	B	18.9	B	2.0	NO

Table 4-3: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
37	Spring Street / 7th Street	30.7	C	30.7	C	0.0	NO
38	Figueroa Street / 8th Street	42.3	D	31.6	C	-10.7	NO
39	Hill Street / 8th Street	28.9	C	27.3	C	-1.6	NO
40	Broadway / 8th Street	40.3	D	43.0	D	2.7	NO
41	Spring Street / 8th Street	22.2	C	22.2	C	0.0	NO
42	Figueroa Street / 9th Street	21.7	C	22.3	C	0.6	NO
43	Flower Street / 9th Street	24.8	C	25.2	C	0.4	NO
44	Hope Street / 9th Street	16.8	B	16.8	B	0.0	NO
45	Grand Avenue / 9th Street	16.3	B	16.3	B	0.0	NO
46	Olive Street / 9th Street	157.0	F	157.0	F	0.0	NO
47	Hill Street / 9th Street	20.4	C	20.2	C	-0.2	NO
48	Broadway / 9th Street	13.8	B	14.3	B	0.5	NO
49	Spring Street / 9th Street	29.9	C	29.9	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	66.7	E	66.6	E	-0.1	NO
51	Flower Street / Olympic Boulevard	27.0	C	26.9	C	-0.1	NO
52	Hope Street / Olympic Boulevard	21.0	C	21.0	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	24.1	C	24.1	C	0.0	NO
54	Olive Street / Olympic Boulevard	24.4	C	24.5	C	0.1	NO
55	Hill Street / Olympic Boulevard	25.8	C	24.8	C	-1.0	NO
56	Broadway / Olympic Boulevard	19.4	B	19.7	B	0.3	NO
57	Main Street / Olympic Boulevard	36.3	D	36.3	D	0.0	NO
58	Figueroa Street / 11th Street	26.4	C	26.4	C	0.0	NO
59	Flower Street / 11th Street	16.0	B	15.3	B	-0.7	NO
60	Hope Street / 11th Street	30.4	C	22.4	C	-8.0	NO
61	Grand Avenue / 11th Street	17.5	B	17.4	B	-0.1	NO
62	Olive Street / 11th Street	18.0	B	17.2	B	-0.8	NO
63	Hill Street / 11th Street	25.7	C	25.9	C	0.2	NO
64	Broadway / 11th Street	21.0	C	18.1	B	-2.9	NO
65	Main Street / 11th Street	15.3	B	15.3	B	0.0	NO

[1] Average vehicle delay in seconds

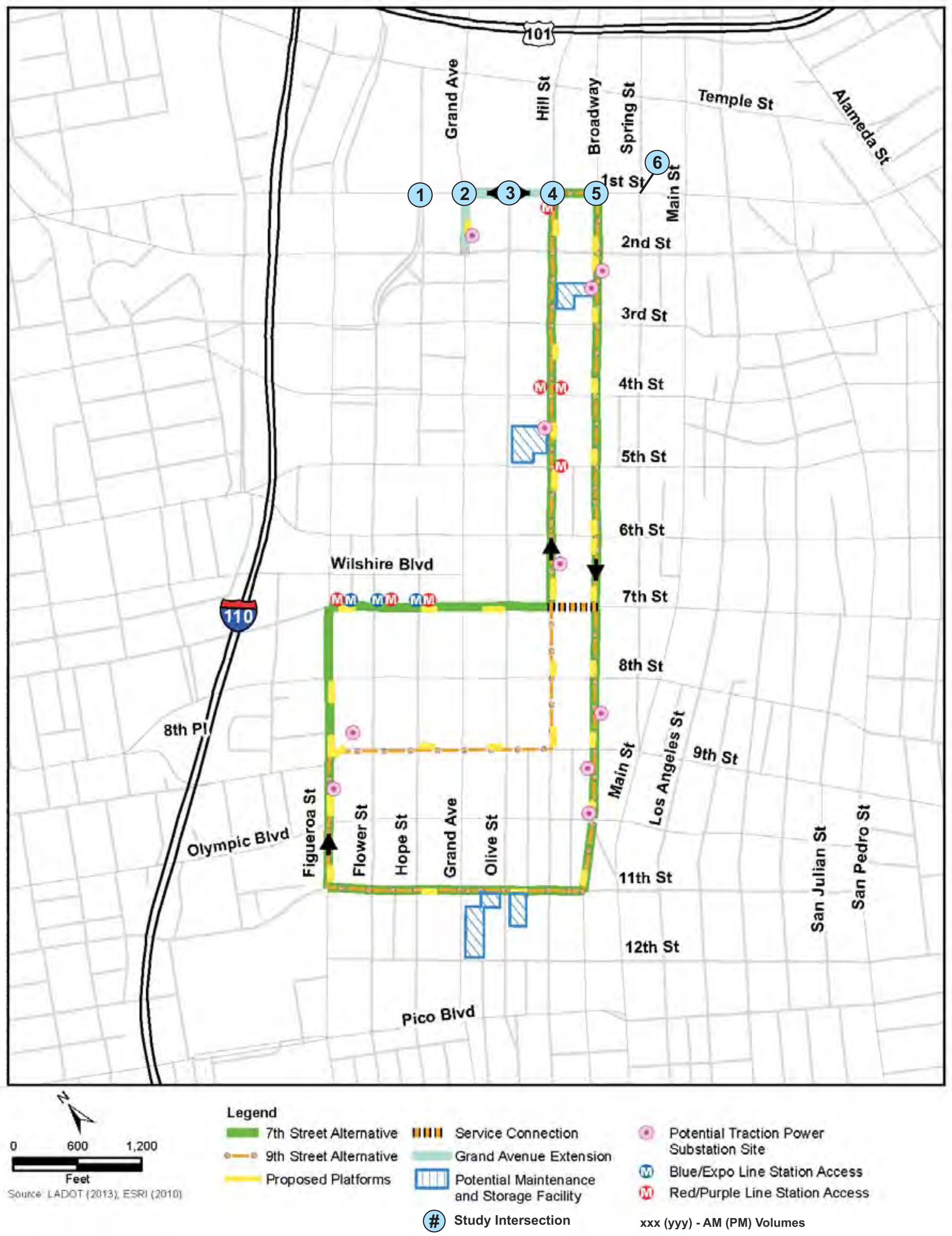
Existing (2014/2015) – 7th Street Alternative Without Grand Avenue Extension

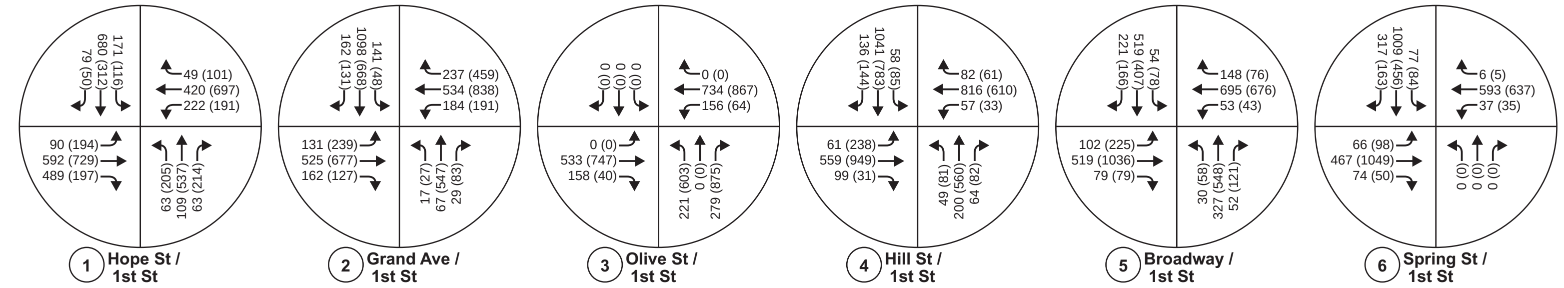
This scenario consists of adding the 7th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Existing (2014/2015) AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 7th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the six affected intersection locations are illustrated in **Figure 4-2.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-1.**

The Existing (2014/2015) with the 7th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-4** and also included in **Appendix D**. The intersection analysis showed that all six locations operate at LOS D or better. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-1**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Existing (2014/2015) to identify significantly (CEQA) affected locations. As shown in **Table 4-5** and **Table 4-6**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted.

For the remaining 59 intersections, the comparison results are the same as the 7th Street Alternative with the Grand Avenue Extension. As previously presented in **Table 4-2** and **Table 4-3**, the intersection of Hill Street and 7th Street is significantly impacted during the AM peak hour. This intersection is significantly impacted due to the addition of a protected signal phase for the streetcar. Although this intersection is significantly impacted per the significance thresholds, it is operating at LOS D or better, which is considered an acceptable level of service.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-2: Existing (2014/2015) - 7th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-4: Existing (2014/2015) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	32.1	C	32.0	C
2	Grand Avenue / 1st Street	50.4	D	30.4	C
3	Olive Street / 1st Street	16.8	B	30.6	C
4	Hill Street / 1st Street	24.6	C	29.5	C
5	Broadway / 1st Street	22.5	C	22.3	C
6	Spring Street / 1st Street	19.5	B	19.4	B

[1] Average vehicle delay in seconds
Note: The LOS for the remaining intersections does not change and can be found in Table 4-3

Table 4-5: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	50.4	D	0.0	NO
3	Olive Street / 1st Street	16.8	B	16.8	B	0.0	NO
4	Hill Street / 1st Street	23.9	C	24.6	C	0.7	NO
5	Broadway / 1st Street	22.4	C	22.5	C	0.1	NO
6	Spring Street / 1st Street	19.6	B	19.5	B	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-4

Table 4-6: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.0	C	32.0	C	0.0	NO
2	Grand Avenue / 1st Street	30.4	C	30.4	C	0.0	NO
3	Olive Street / 1st Street	30.6	C	30.6	C	0.0	NO
4	Hill Street / 1st Street	29.3	C	29.5	C	0.2	NO
5	Broadway / 1st Street	22.8	C	22.3	C	-0.5	NO
6	Spring Street / 1st Street	19.4	B	19.4	B	0.0	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-5

Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension

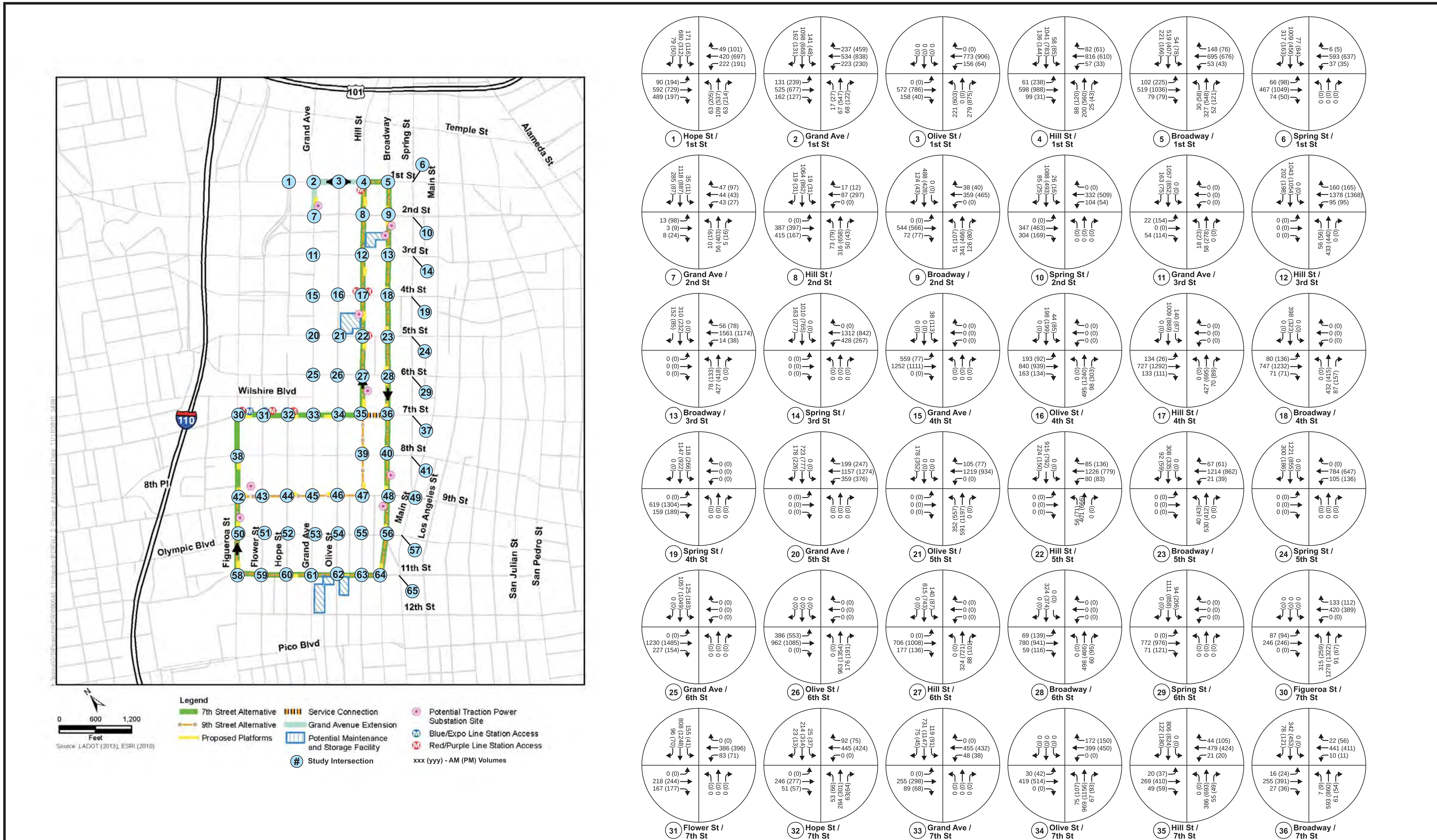
This scenario consists of adding the 9th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Existing (2014/2015) AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes are illustrated in **Figure 4-3.**

The Existing (2014/2015) with the 9th Street Alternative with the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS are provided in **Table 4-7** and also included in **Appendix E**. The intersection analysis showed that three of the 65 locations operate at LOS E or F. The remaining 62 intersections operate at LOS D or better during both AM and PM peak hours. As previously noted, the three locations operating at LOS E or F are the same intersections identified in Section 3.2.3 as part of the Existing (2014/2015) level of service analysis.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Existing (2014/2015) without Project to identify significantly (CEQA) affected locations. As shown in **Table 4-8** and **Table 4-9**, two of the intersections are anticipated to be significantly impacted by this alternative of the proposed Project.

The intersection of Hill Street and 1st Street is significantly impacted during the AM peak hour and the intersection of Grand Avenue and 1st Street is significantly impacted during the PM peak hour. Both intersections are significantly impacted due to the addition of a protected signal phase for the streetcar to turn left from Hill Street to 1st Street and to turn right across all northbound lanes from Grand Avenue to 1st Street. Although both intersections are significantly impacted per the significance thresholds, they are operating at LOS D or better, which is considered an acceptable level of service.

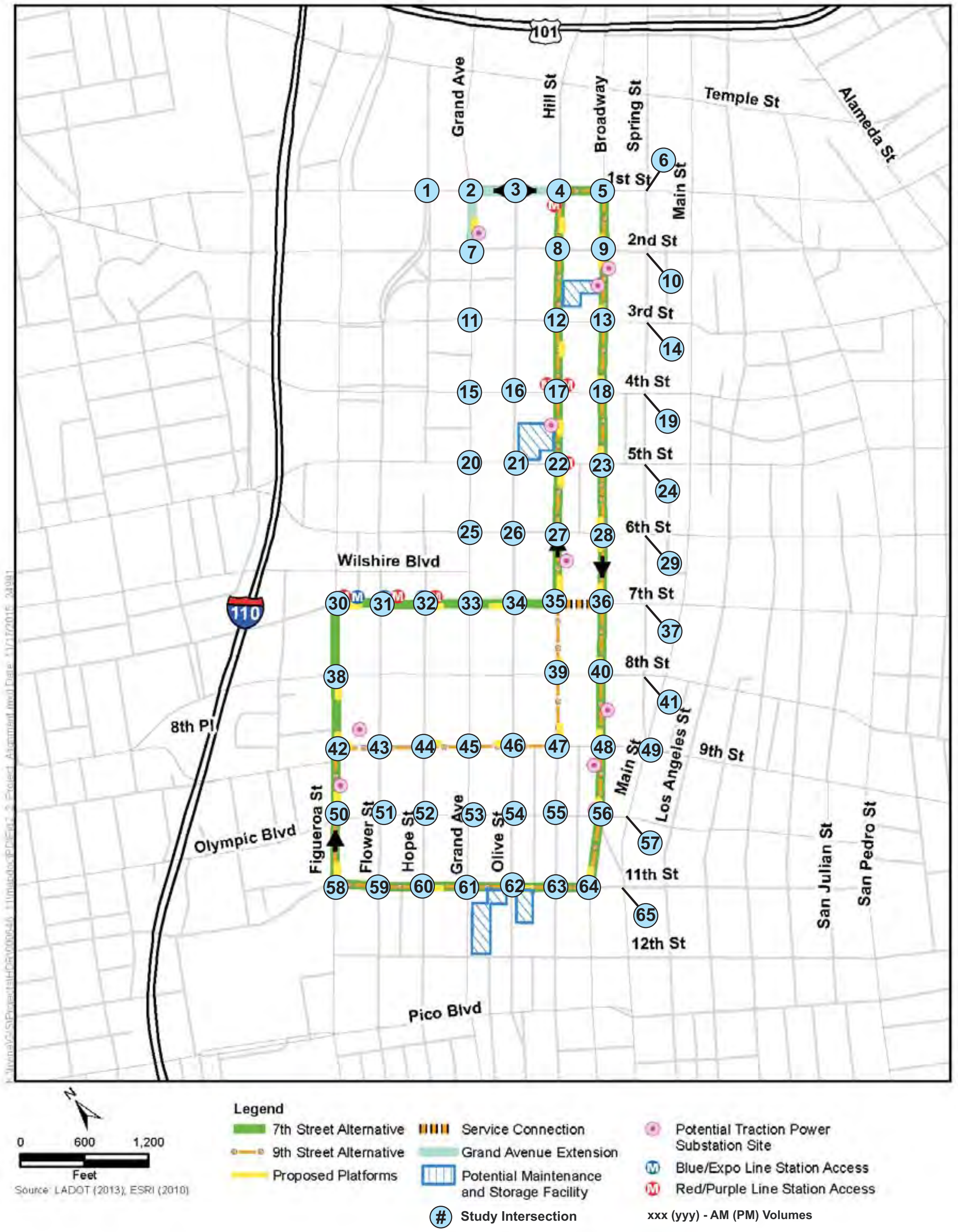
In addition, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-3: Existing (2014/2015) - 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes


Grand Ave
Hill St
Broadway
Spring St
Temple St
Alameda St
Main St
1st St
2nd St
3rd St
4th St
5th St
6th St
Wilshire Blvd
7th St
8th St
8th Pl
9th St
Los Angeles St
Olympic Blvd
Figueroa St
Flower St
Hope St
Olive St
11th St
12th St
Pico Blvd
San Julian St
San Pedro St
Legend
7th Street Alternative
9th Street Alternative
Proposed Platforms
Service Connection
Grand Avenue Extension
Potential Maintenance and Storage Facility
Potential Traction Power Substation Site
Blue/Expo Line Station Access
Red/Purple Line Station Access
Study Intersection
xxx (yyy) - AM (PM) Volumes
0 600 1,200
Feet
Source: LADOT (2013), ESRI (2010)

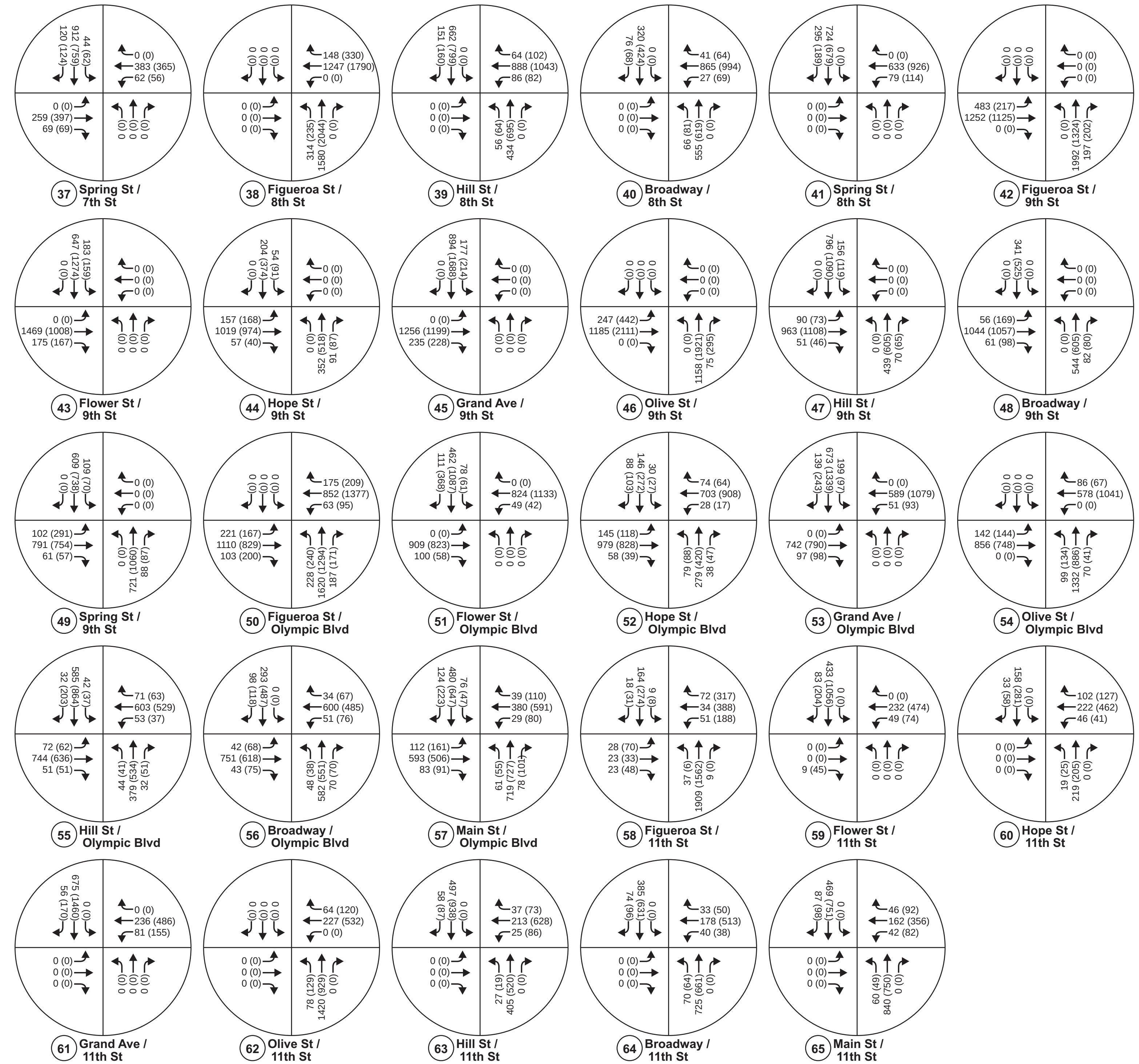

37 Spring St / 7th St
38 Figueroa St / 8th St
39 Hill St / 8th St
40 Broadway / 8th St
41 Spring St / 8th St
42 Figueroa St / 9th St
43 Flower St / 9th St
44 Hope St / 9th St
45 Grand Ave / 9th St
46 Olive St / 9th St
47 Hill St / 9th St
48 Broadway / 9th St
49 Spring St / 9th St
50 Figueroa St / Olympic Blvd
51 Flower St / Olympic Blvd
52 Hope St / Olympic Blvd
53 Grand Ave / Olympic Blvd
54 Olive St / Olympic Blvd
55 Hill St / Olympic Blvd
56 Broadway / Olympic Blvd
57 Main St / Olympic Blvd
58 Figueroa St / 11th St
59 Flower St / 11th St
60 Hope St / 11th St
61 Grand Ave / 11th St
62 Olive St / 11th St
63 Hill St / 11th St
64 Broadway / 11th St
65 Main St / 11th St

Table 4-7: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	32.1	C	32.4	C
2	Grand Avenue / 1st Street	51.7	D	39.0	D
3	Olive Street / 1st Street	14.8	B	27.0	C
4	Hill Street / 1st Street	35.8	D	34.3	C
5	Broadway / 1st Street	22.3	C	21.9	C
6	Spring Street / 1st Street	18.6	B	19.6	B
7	Grand Avenue / 2nd Street	17.6	B	20.0	B
8	Hill Street / 2nd Street	22.9	C	18.8	B
9	Broadway / 2nd Street	26.1	C	23.9	C
10	Spring Street / 2nd Street	15.2	B	19.9	B
11	Grand Avenue / 3rd Street	2.9	A	17.2	B
12	Hill Street / 3rd Street	46.8	D	37.8	D
13	Broadway / 3rd Street	115.2	F	21.1	C
14	Spring Street / 3rd Street	32.8	C	24.8	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	19.7	B	19.5	B
17	Hill Street / 4th Street	18.7	B	11.7	B
18	Broadway / 4th Street	22.4	C	13.6	B
19	Spring Street / 4th Street	19.6	B	20.4	C
20	Grand Avenue / 5th Street	15.9	B	26.9	C
21	Olive Street / 5th Street	36.9	D	45.0	D
22	Hill Street / 5th Street	8.8	A	16.6	B
23	Broadway / 5th Street	9.7	A	17.0	B
24	Spring Street / 5th Street	16.8	B	12.0	B
25	Grand Avenue / 6th Street	19.9	B	20.7	C
26	Olive Street / 6th Street	13.1	B	14.1	B
27	Hill Street / 6th Street	9.7	A	6.1	A
28	Broadway / 6th Street	15.9	B	14.8	B
29	Spring Street / 6th Street	7.8	A	10.3	B
30	Figueroa Street / 7th Street	34.7	C	27.3	C
31	Flower Street / 7th Street	18.7	B	16.3	B
32	Hope Street / 7th Street	10.1	B	15.3	B
33	Grand Avenue / 7th Street	17.0	B	37.5	D
34	Olive Street / 7th Street	15.7	B	24.0	C
35	Hill Street / 7th Street	16.7	B	26.3	C
36	Broadway / 7th Street	15.6	B	19.2	B
37	Spring Street / 7th Street	7.7	A	30.7	C
38	Figueroa Street / 8th Street	17.5	B	43.1	D
39	Hill Street / 8th Street	7.5	A	30.1	C
40	Broadway / 8th Street	19.8	B	43.0	D

Table 4-7: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	8.6	A	22.2	C
42	Figueroa Street / 9th Street	40.0	D	22.3	C
43	Flower Street / 9th Street	29.3	C	25.3	C
44	Hope Street / 9th Street	14.2	B	12.3	B
45	Grand Avenue / 9th Street	15.9	B	15.5	B
46	Olive Street / 9th Street	18.5	B	120.8	F
47	Hill Street / 9th Street	21.8	C	17.4	B
48	Broadway / 9th Street	6.0	A	14.1	B
49	Spring Street / 9th Street	12.8	B	29.8	C
50	Figueroa Street / Olympic Boulevard	70.2	E	66.6	E
51	Flower Street / Olympic Boulevard	17.4	B	26.9	C
52	Hope Street / Olympic Boulevard	19.8	B	21.0	C
53	Grand Avenue / Olympic Boulevard	15.4	B	24.1	C
54	Olive Street / Olympic Boulevard	14.5	B	24.3	C
55	Hill Street / Olympic Boulevard	17.1	B	23.9	C
56	Broadway / Olympic Boulevard	21.0	C	19.8	B
57	Main Street / Olympic Boulevard	23.9	C	36.3	D
58	Figueroa Street / 11th Street	20.0	B	26.4	C
59	Flower Street / 11th Street	18.6	B	15.3	B
60	Hope Street / 11th Street	15.8	B	22.4	C
61	Grand Avenue / 11th Street	9.8	A	17.4	B
62	Olive Street / 11th Street	17.4	B	17.2	B
63	Hill Street / 11th Street	6.1	A	25.9	C
64	Broadway / 11th Street	16.1	B	18.1	B
65	Main Street / 11th Street	10.9	B	15.3	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-8: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	51.7	D	1.3	NO
3	Olive Street / 1st Street	16.8	B	14.8	B	-2.0	NO
4	Hill Street / 1st Street	23.9	C	35.8	D	11.9	YES
5	Broadway / 1st Street	22.4	C	22.3	C	-0.1	NO
6	Spring Street / 1st Street	19.6	B	18.6	B	-1.0	NO
7	Grand Avenue / 2nd Street	17.6	B	17.6	B	0.0	NO
8	Hill Street / 2nd Street	17.7	B	22.9	C	5.2	NO
9	Broadway / 2nd Street	26.3	C	26.1	C	-0.2	NO
10	Spring Street / 2nd Street	15.2	B	15.2	B	0.0	NO
11	Grand Avenue / 3rd Street	2.9	A	2.9	A	0.0	NO
12	Hill Street / 3rd Street	46.7	D	46.8	D	0.1	NO
13	Broadway / 3rd Street	116.6	F	115.2	F	-1.4	NO
14	Spring Street / 3rd Street	32.8	C	32.8	C	0.0	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	19.7	B	19.7	B	0.0	NO
17	Hill Street / 4th Street	18.3	B	18.7	B	0.4	NO
18	Broadway / 4th Street	22.0	C	22.4	C	0.4	NO
19	Spring Street / 4th Street	19.6	B	19.6	B	0.0	NO
20	Grand Avenue / 5th Street	15.9	B	15.9	B	0.0	NO
21	Olive Street / 5th Street	36.9	D	36.9	D	0.0	NO
22	Hill Street / 5th Street	8.6	A	8.8	A	0.2	NO
23	Broadway / 5th Street	9.0	A	9.7	A	0.7	NO
24	Spring Street / 5th Street	16.8	B	16.8	B	0.0	NO
25	Grand Avenue / 6th Street	19.9	B	19.9	B	0.0	NO
26	Olive Street / 6th Street	13.1	B	13.1	B	0.0	NO
27	Hill Street / 6th Street	9.3	A	9.7	A	0.4	NO
28	Broadway / 6th Street	16.7	B	15.9	B	-0.8	NO
29	Spring Street / 6th Street	7.7	A	7.8	A	0.1	NO
30	Figueroa Street / 7th Street	34.6	C	34.7	C	0.1	NO
31	Flower Street / 7th Street	18.7	B	18.7	B	0.0	NO
32	Hope Street / 7th Street	10.0	A	10.1	B	0.1	NO
33	Grand Avenue / 7th Street	17.0	B	17.0	B	0.0	NO
34	Olive Street / 7th Street	17.2	B	15.7	B	-1.5	NO
35	Hill Street / 7th Street	17.0	B	16.7	B	-0.3	NO
36	Broadway / 7th Street	14.3	B	15.6	B	1.3	NO

Table 4-8: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO
38	Figueroa Street / 8th Street	19.2	B	17.5	B	-1.7	NO
39	Hill Street / 8th Street	8.0	A	7.5	A	-0.5	NO
40	Broadway / 8th Street	21.0	C	19.8	B	-1.2	NO
41	Spring Street / 8th Street	8.6	A	8.6	A	0.0	NO
42	Figueroa Street / 9th Street	39.4	D	40.0	D	0.6	NO
43	Flower Street / 9th Street	28.7	C	29.3	C	0.6	NO
44	Hope Street / 9th Street	14.1	B	14.2	B	0.1	NO
45	Grand Avenue / 9th Street	15.5	B	15.9	B	0.4	NO
46	Olive Street / 9th Street	19.9	B	18.5	B	-1.4	NO
47	Hill Street / 9th Street	21.8	C	21.8	C	0.0	NO
48	Broadway / 9th Street	6.6	A	6.0	A	-0.6	NO
49	Spring Street / 9th Street	12.9	B	12.8	B	-0.1	NO
50	Figueroa Street / Olympic Boulevard	70.7	E	70.2	E	-0.5	NO
51	Flower Street / Olympic Boulevard	17.4	B	17.4	B	0.0	NO
52	Hope Street / Olympic Boulevard	19.8	B	19.8	B	0.0	NO
53	Grand Avenue / Olympic Boulevard	15.4	B	15.4	B	0.0	NO
54	Olive Street / Olympic Boulevard	14.5	B	14.5	B	0.0	NO
55	Hill Street / Olympic Boulevard	17.1	B	17.1	B	0.0	NO
56	Broadway / Olympic Boulevard	20.7	C	21.0	C	0.3	NO
57	Main Street / Olympic Boulevard	23.9	C	23.9	C	0.0	NO
58	Figueroa Street / 11th Street	19.7	B	20.0	B	0.3	NO
59	Flower Street / 11th Street	18.8	B	18.6	B	-0.2	NO
60	Hope Street / 11th Street	14.9	B	15.8	B	0.9	NO
61	Grand Avenue / 11th Street	10.1	B	9.8	A	-0.3	NO
62	Olive Street / 11th Street	17.0	B	17.4	B	0.4	NO
63	Hill Street / 11th Street	5.5	A	6.1	A	0.6	NO
64	Broadway / 11th Street	15.8	B	16.1	B	0.3	NO
65	Main Street / 11th Street	10.9	B	10.9	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-9: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (20014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.0	C	32.4	C	0.4	NO
2	Grand Avenue / 1st Street	30.4	C	39.0	D	8.6	YES
3	Olive Street / 1st Street	30.6	C	27.0	C	-3.6	NO
4	Hill Street / 1st Street	29.3	C	34.3	C	5.0	NO
5	Broadway / 1st Street	22.8	C	21.9	C	-0.9	NO
6	Spring Street / 1st Street	19.4	B	19.6	B	0.2	NO
7	Grand Avenue / 2nd Street	28.4	C	20.0	B	-8.4	NO
8	Hill Street / 2nd Street	23.3	C	18.8	B	-4.5	NO
9	Broadway / 2nd Street	23.6	C	23.9	C	0.3	NO
10	Spring Street / 2nd Street	20.0	B	19.9	B	-0.1	NO
11	Grand Avenue / 3rd Street	18.1	B	17.2	B	-0.9	NO
12	Hill Street / 3rd Street	38.3	D	37.8	D	-0.5	NO
13	Broadway / 3rd Street	21.7	C	21.1	C	-0.6	NO
14	Spring Street / 3rd Street	24.8	C	24.8	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	19.5	B	19.5	B	0.0	NO
17	Hill Street / 4th Street	10.8	B	11.7	B	0.9	NO
18	Broadway / 4th Street	13.0	B	13.6	B	0.6	NO
19	Spring Street / 4th Street	20.5	C	20.4	C	-0.1	NO
20	Grand Avenue / 5th Street	27.0	C	26.9	C	-0.1	NO
21	Olive Street / 5th Street	44.5	D	45.0	D	0.5	NO
22	Hill Street / 5th Street	21.1	C	16.6	B	-4.5	NO
23	Broadway / 5th Street	16.4	B	17.0	B	0.6	NO
24	Spring Street / 5th Street	12.0	B	12.0	B	0.0	NO
25	Grand Avenue / 6th Street	20.7	C	20.7	C	0.0	NO
26	Olive Street / 6th Street	14.1	B	14.1	B	0.0	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	14.3	B	14.8	B	0.5	NO
29	Spring Street / 6th Street	10.4	B	10.3	B	-0.1	NO
30	Figueroa Street / 7th Street	27.2	C	27.3	C	0.1	NO
31	Flower Street / 7th Street	16.3	B	16.3	B	0.0	NO
32	Hope Street / 7th Street	15.9	B	15.3	B	-0.6	NO
33	Grand Avenue / 7th Street	37.4	D	37.5	D	0.1	NO
34	Olive Street / 7th Street	19.2	B	24.0	C	4.8	NO
35	Hill Street / 7th Street	28.6	C	26.3	C	-2.3	NO
36	Broadway / 7th Street	16.9	B	19.2	B	2.3	NO

Table 4-9: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Existing (20014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project Delay[1]	2014/2015 Without Project LOS	2014/2015 With Project Delay[1]	2014/2015 With Project LOS	Change in Delay	Significant Impact
37	Spring Street / 7th Street	30.7	C	30.7	C	0.0	NO
38	Figueroa Street / 8th Street	42.3	D	43.1	D	0.8	NO
39	Hill Street / 8th Street	28.9	C	30.1	C	1.2	NO
40	Broadway / 8th Street	40.3	D	43.0	D	2.7	NO
41	Spring Street / 8th Street	22.2	C	22.2	C	0.0	NO
42	Figueroa Street / 9th Street	21.7	C	22.3	C	0.6	NO
43	Flower Street / 9th Street	24.8	C	25.3	C	0.5	NO
44	Hope Street / 9th Street	16.8	B	12.3	B	-4.5	NO
45	Grand Avenue / 9th Street	16.3	B	15.5	B	-0.8	NO
46	Olive Street / 9th Street	157.0	F	120.8	F	-36.2	NO
47	Hill Street / 9th Street	20.4	C	17.4	B	-3.0	NO
48	Broadway / 9th Street	13.8	B	14.1	B	0.3	NO
49	Spring Street / 9th Street	29.9	C	29.8	C	-0.1	NO
50	Figueroa Street / Olympic Boulevard	66.7	E	66.6	E	-0.1	NO
51	Flower Street / Olympic Boulevard	27.0	C	26.9	C	-0.1	NO
52	Hope Street / Olympic Boulevard	21.0	C	21.0	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	24.1	C	24.1	C	0.0	NO
54	Olive Street / Olympic Boulevard	24.4	C	24.3	C	-0.1	NO
55	Hill Street / Olympic Boulevard	25.8	C	23.9	C	-1.9	NO
56	Broadway / Olympic Boulevard	19.4	B	19.8	B	0.4	NO
57	Main Street / Olympic Boulevard	36.3	D	36.3	D	0.0	NO
58	Figueroa Street / 11th Street	26.4	C	26.4	C	0.0	NO
59	Flower Street / 11th Street	16.0	B	15.3	B	-0.7	NO
60	Hope Street / 11th Street	30.4	C	22.4	C	-8.0	NO
61	Grand Avenue / 11th Street	17.5	B	17.4	B	-0.1	NO
62	Olive Street / 11th Street	18.0	B	17.2	B	-0.8	NO
63	Hill Street / 11th Street	25.7	C	25.9	C	0.2	NO
64	Broadway / 11th Street	21.0	C	18.1	B	-2.9	NO
65	Main Street / 11th Street	15.3	B	15.3	B	0.0	NO

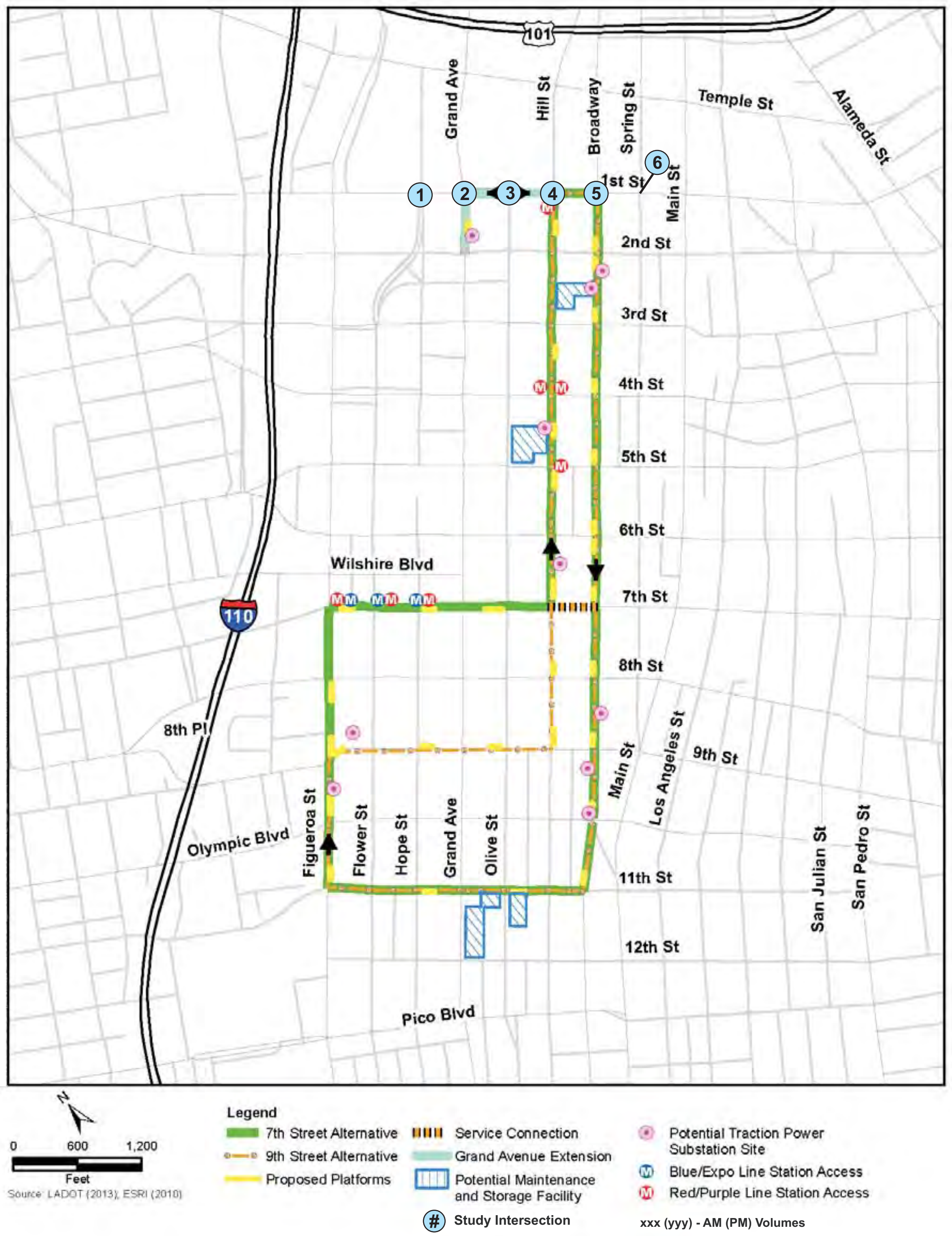
[1] Average vehicle delay in seconds

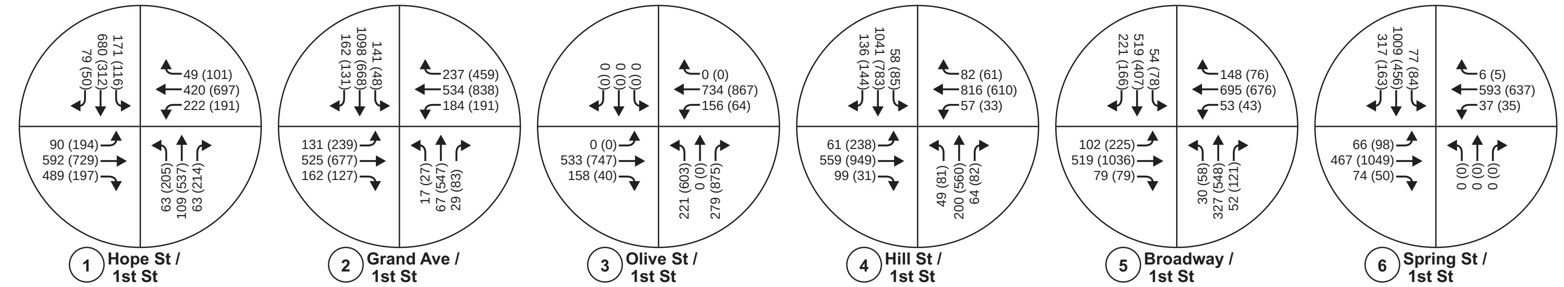
Existing (2014/2015) – 9th Street Alternative Without Grand Avenue Extension

This scenario consists of adding the 9th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Existing (2014/2015) AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 9th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the six affected intersection locations are illustrated in **Figure 4-4.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-3.**

The Existing (2014/2015) with the 9th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-10** and also included in **Appendix E**. The intersection analysis showed that all six locations operate at LOS D or better. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-7**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Existing (2014/2015) to identify significantly (CEQA) affected locations. As shown in **Table 4-11** and **Table 4-12**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the comparison results are the same as the 9th Street Alternative with the Grand Avenue Extension.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-4: Existing (2014/2015) - 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-10: Existing (2014/2015) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	32.1	C	32.0	C
2	Grand Avenue / 1st Street	50.4	D	30.4	C
3	Olive Street / 1st Street	16.8	B	30.6	C
4	Hill Street / 1st Street	24.6	C	29.5	C
5	Broadway / 1st Street	22.5	C	22.3	C
6	Spring Street / 1st Street	19.5	B	19.4	B

[1] Average vehicle delay in seconds
Note: The LOS for the remaining intersections does not change and can be found in Table 4-9

Table 4-11: AM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.1	C	32.1	C	0.0	NO
2	Grand Avenue / 1st Street	50.4	D	50.4	D	0.0	NO
3	Olive Street / 1st Street	16.8	B	16.8	B	0.0	NO
4	Hill Street / 1st Street	23.9	C	24.6	C	0.7	NO
5	Broadway / 1st Street	22.4	C	22.5	C	0.1	NO
6	Spring Street / 1st Street	19.6	B	19.5	B	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-10

Table 4-12: PM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Existing (2014/2015) With and Without Project)

#	Intersection	2014/2015 Without Project		2014/2015 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	32.0	C	32.0	C	0.0	NO
2	Grand Avenue / 1st Street	30.4	C	30.4	C	0.0	NO
3	Olive Street / 1st Street	30.6	C	30.6	C	0.0	NO
4	Hill Street / 1st Street	29.3	C	29.5	C	0.2	NO
5	Broadway / 1st Street	22.8	C	22.3	C	-0.5	NO
6	Spring Street / 1st Street	19.4	B	19.4	B	0.0	NO

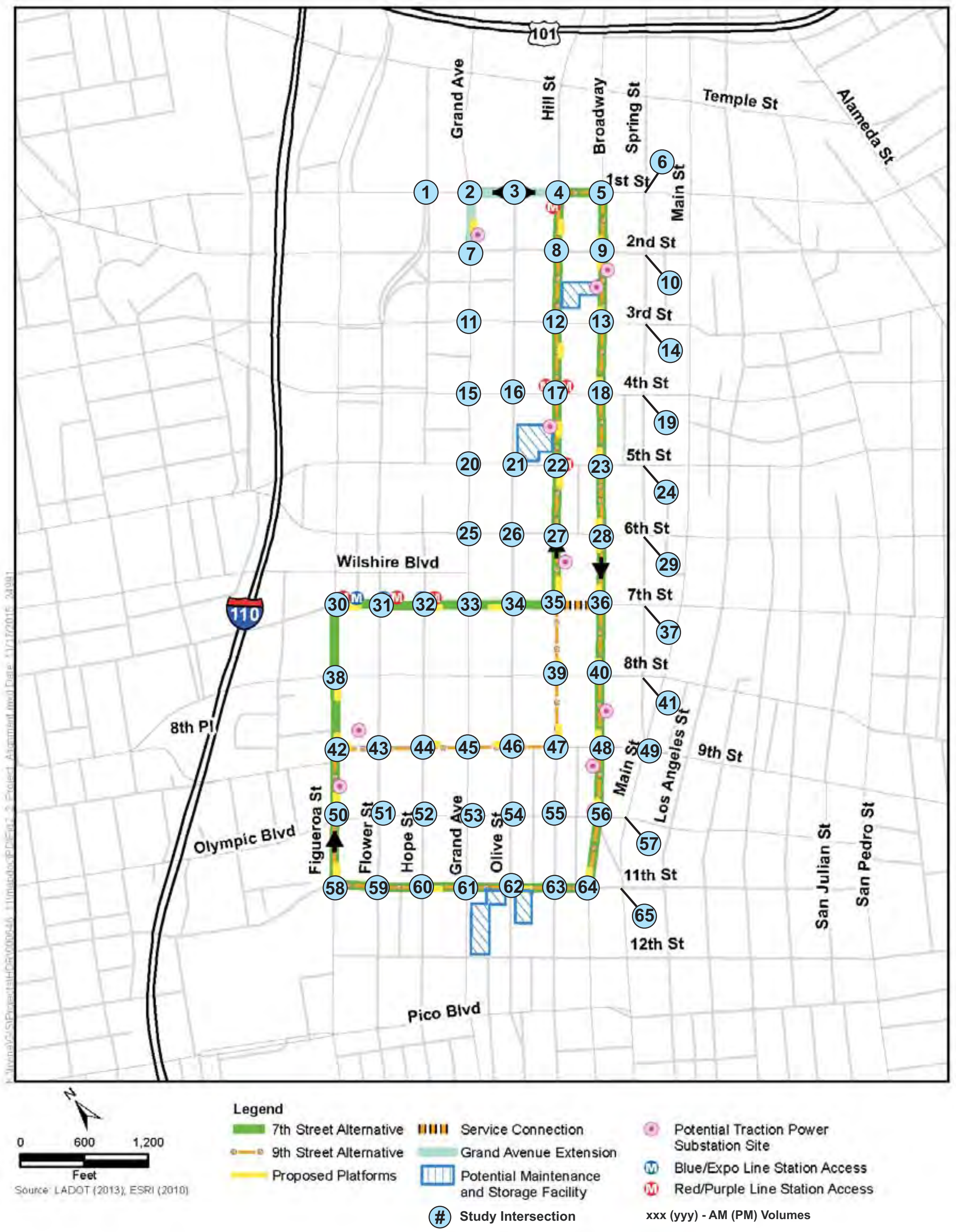
[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-11

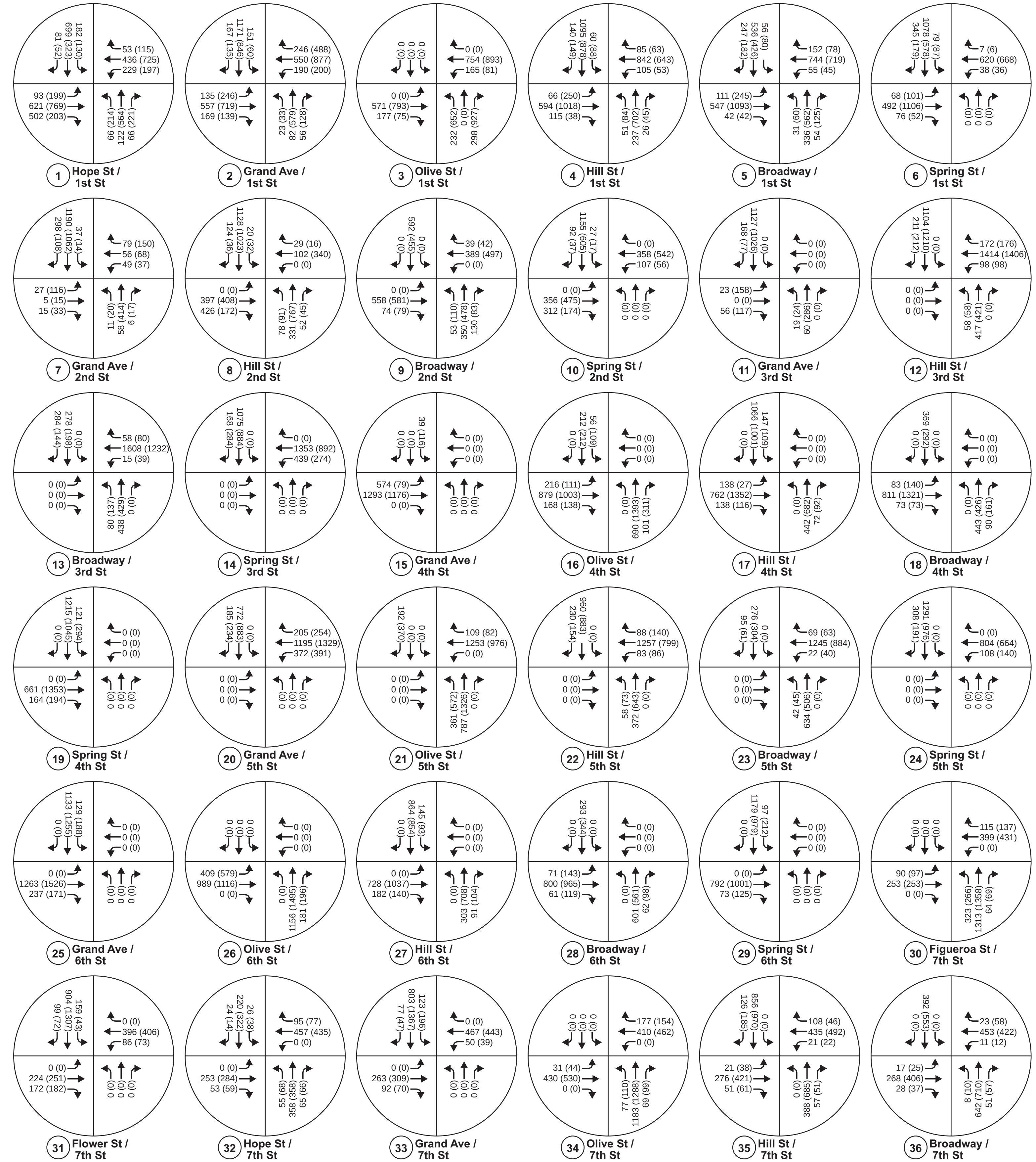
4.2.2 Opening Year (2020)

Opening Year (2020) Without Project

To determine the Opening Year (2020) without Project turning movement intersection traffic volumes, two primary elements that contribute to traffic growth over the years were considered: an ambient traffic rate and traffic due to other known programmed or planned future (related) development projects (as detailed in Section 2.3.6). The resulting traffic volumes are illustrated in **Figure 4-5.**

The Opening Year (2020) without Project scenario, which is also referred to as the No Project Alternative, was analyzed with the assumption that the roadway projects listed in Section 3.2.2 would be in place by year 2020, and the resulting traffic operating conditions and corresponding LOS are provided in **Table 4-13** and also included in **Appendix F**. The intersection analysis showed that 12 of the 65 locations operate at LOS E or F. The remaining 53 intersections operate at LOS D or better during both AM and PM peak hours.

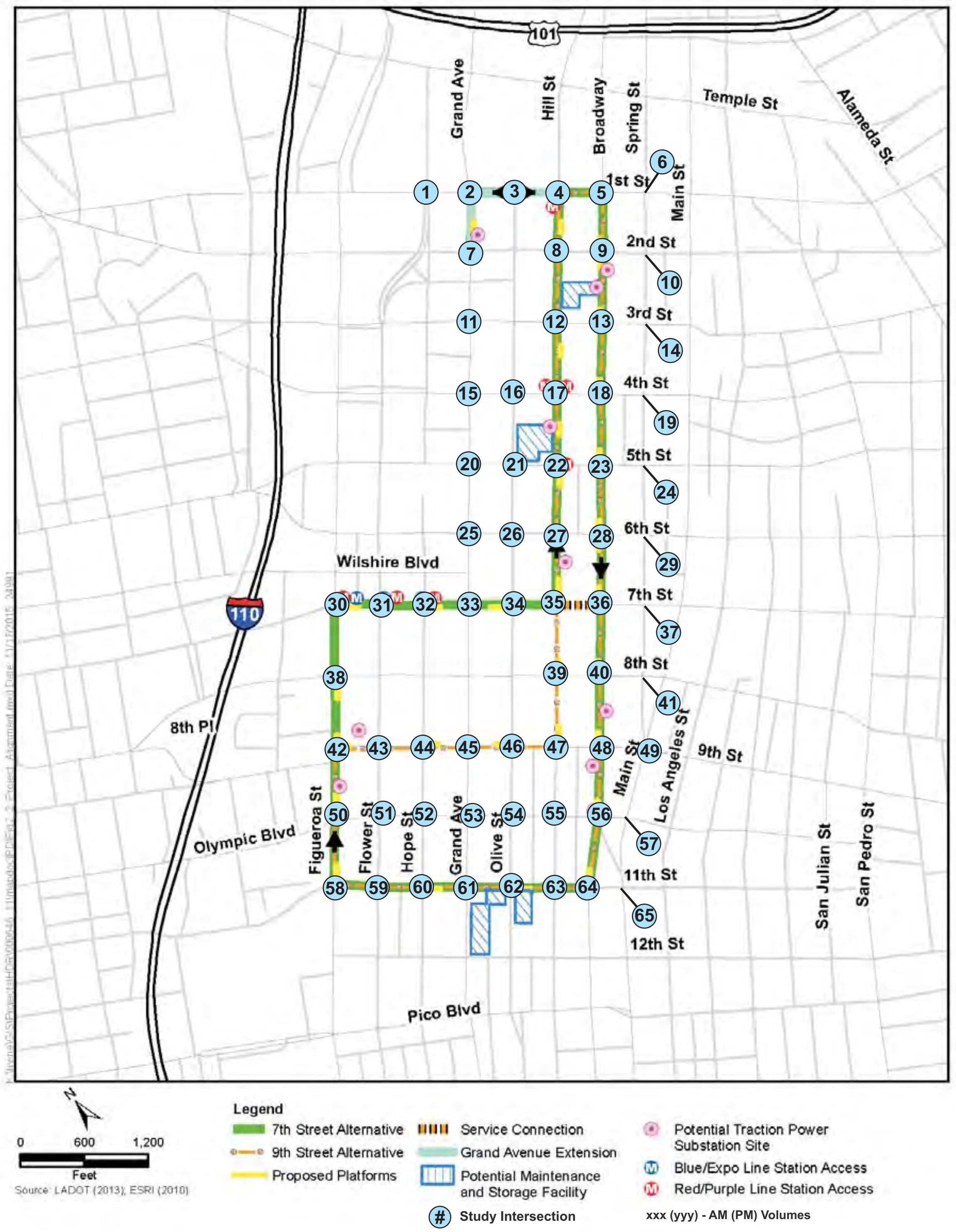




INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-5: Opening Year (2020) Without Project AM/PM Peak Hour Traffic Volumes



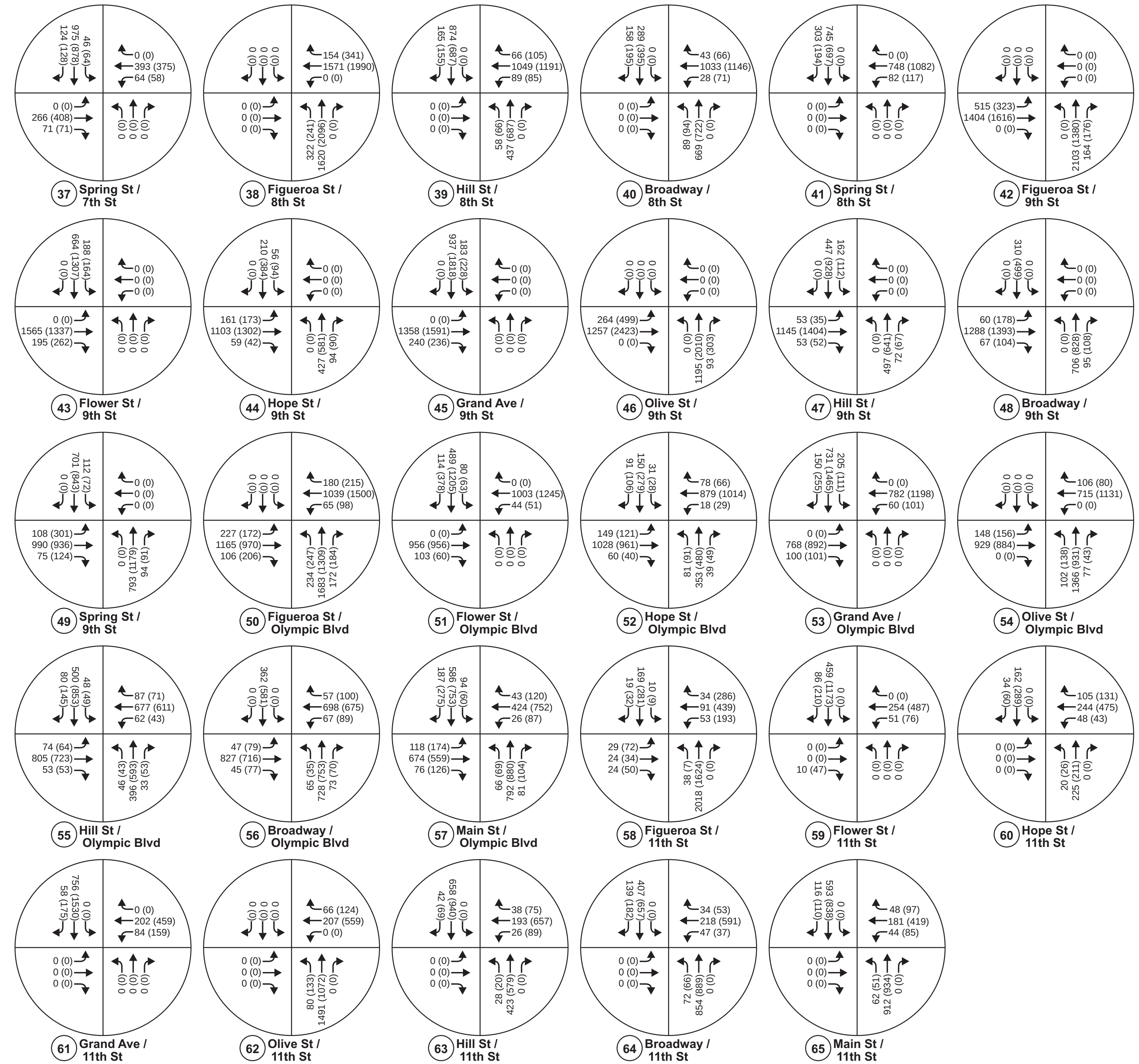


Figure 4-5: Opening Year (2020) Without Project AM/PM Peak Hour Traffic Volumes (continued)

Table 4-13: Opening Year (2020) Without Project Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	43.4	D	35.4	D
2	Grand Avenue / 1st Street	61.4	E	34.6	C
3	Olive Street / 1st Street	17.4	B	32.0	C
4	Hill Street / 1st Street	27.9	C	32.1	C
5	Broadway / 1st Street	22.9	C	23.5	C
6	Spring Street / 1st Street	20.1	C	20.6	C
7	Grand Avenue / 2nd Street	19.7	B	32.8	C
8	Hill Street / 2nd Street	20.0	B	32.8	C
9	Broadway / 2nd Street	60.9	E	33.1	C
10	Spring Street / 2nd Street	15.9	B	20.4	C
11	Grand Avenue / 3rd Street	3.1	A	18.8	B
12	Hill Street / 3rd Street	53.1	D	56.9	E
13	Broadway / 3rd Street	121.4	F	22.4	C
14	Spring Street / 3rd Street	38.0	D	26.3	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	20.5	C	26.6	C
17	Hill Street / 4th Street	18.9	B	10.7	B
18	Broadway / 4th Street	22.3	C	13.3	B
19	Spring Street / 4th Street	21.3	C	20.8	C
20	Grand Avenue / 5th Street	16.1	B	29.0	C
21	Olive Street / 5th Street	37.5	D	45.2	D
22	Hill Street / 5th Street	8.8	A	21.9	C
23	Broadway / 5th Street	9.0	A	17.2	B
24	Spring Street / 5th Street	17.0	B	12.8	B
25	Grand Avenue / 6th Street	20.3	C	21.6	C
26	Olive Street / 6th Street	15.2	B	15.1	B
27	Hill Street / 6th Street	9.3	A	8.1	A
28	Broadway / 6th Street	17.6	B	15.3	B
29	Spring Street / 6th Street	8.6	A	11.6	B
30	Figueroa Street / 7th Street	145.3	F	84.0	F
31	Flower Street / 7th Street	19.2	B	17.8	B
32	Hope Street / 7th Street	11.3	B	16.5	B
33	Grand Avenue / 7th Street	17.8	B	56.0	E
34	Olive Street / 7th Street	17.4	B	20.3	C
35	Hill Street / 7th Street	17.5	B	35.1	D
36	Broadway / 7th Street	13.3	B	19.0	B
37	Spring Street / 7th Street	7.7	A	30.8	C
38	Figueroa Street / 8th Street	33.8	C	148.4	F
39	Hill Street / 8th Street	8.9	A	30.3	C
40	Broadway / 8th Street	19.8	B	42.1	D

Table 4-13: Opening Year (2020) Without Project Intersection LOS Analysis[2]

#	Intersection	AM Delay[1]	AM LOS	PM Delay[1]	PM LOS
41	Spring Street / 8th Street	9.3	A	23.5	C
42	Figueroa Street / 9th Street	142.1	F	40.7	D
43	Flower Street / 9th Street	30.4	C	27.8	C
44	Hope Street / 9th Street	14.6	B	24.4	C
45	Grand Avenue / 9th Street	16.4	B	23.5	C
46	Olive Street / 9th Street	27.4	C	227.4	F
47	Hill Street / 9th Street	23.0	C	28.9	C
48	Broadway / 9th Street	7.9	A	16.8	B
49	Spring Street / 9th Street	13.9	B	31.8	C
50	Figueroa Street / Olympic Boulevard	108.2	F	86.2	F
51	Flower Street / Olympic Boulevard	19.3	B	27.5	C
52	Hope Street / Olympic Boulevard	23.6	C	25.3	C
53	Grand Avenue / Olympic Boulevard	16.8	B	27.8	C
54	Olive Street / Olympic Boulevard	17.0	B	36.1	D
55	Hill Street / Olympic Boulevard	18.1	B	28.1	C
56	Broadway / Olympic Boulevard	21.9	C	24.0	C
57	Main Street / Olympic Boulevard	31.0	C	50.9	D
58	Figueroa Street / 11th Street	114.6	F	71.8	E
59	Flower Street / 11th Street	17.4	B	42.6	D
60	Hope Street / 11th Street	19.7	B	38.7	D
61	Grand Avenue / 11th Street	10.4	B	18.3	B
62	Olive Street / 11th Street	18.5	B	21.1	C
63	Hill Street / 11th Street	7.8	A	40.3	D
64	Broadway / 11th Street	21.1	C	65.0	E
65	Main Street / 11th Street	11.8	B	14.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension

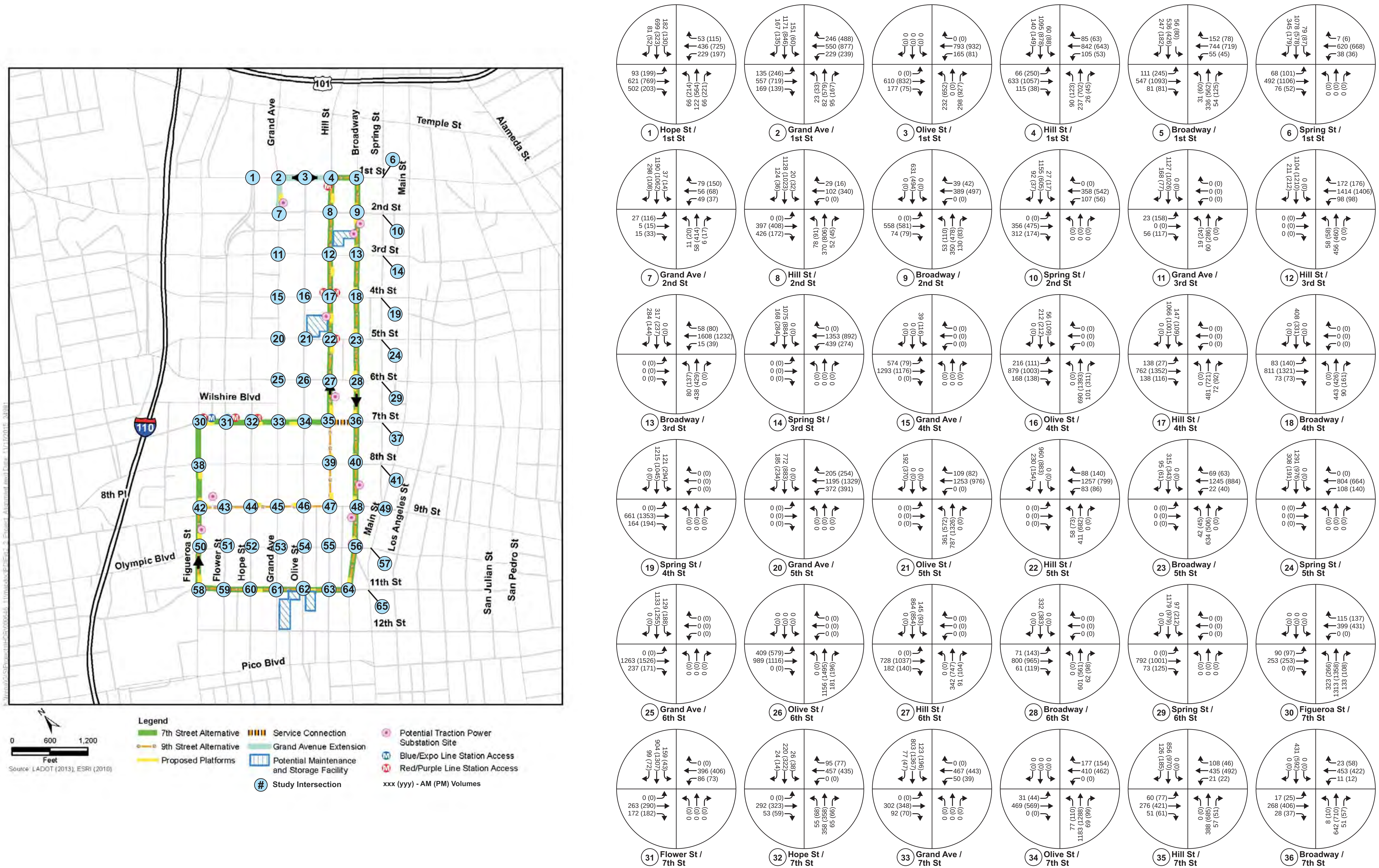
This scenario consists of adding the 7th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Opening Year (2020) without Project AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes are illustrated in **Figure 4-6.**

The intersection traffic analysis was completed, and the corresponding LOS are provided in **Table 4-14** and also included in **Appendix G**. The intersection analysis showed that 10 of the 65 locations operate at LOS E or F. The remaining 55 intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the 10 locations operating at LOS E or F are the same as those identified in the Opening Year (2020) without Project level of service analysis.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 7th Street Alternative with the Grand Avenue Extension were compared with the Opening Year (2020) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-15** and **Table 4-16**, three intersections are anticipated to be significantly impacted by this alternative. The three significantly impacted intersections are as follows:

- Grand Avenue and 1st Street
- Hill Street and 1st Street
- Hill Street and 7th Street

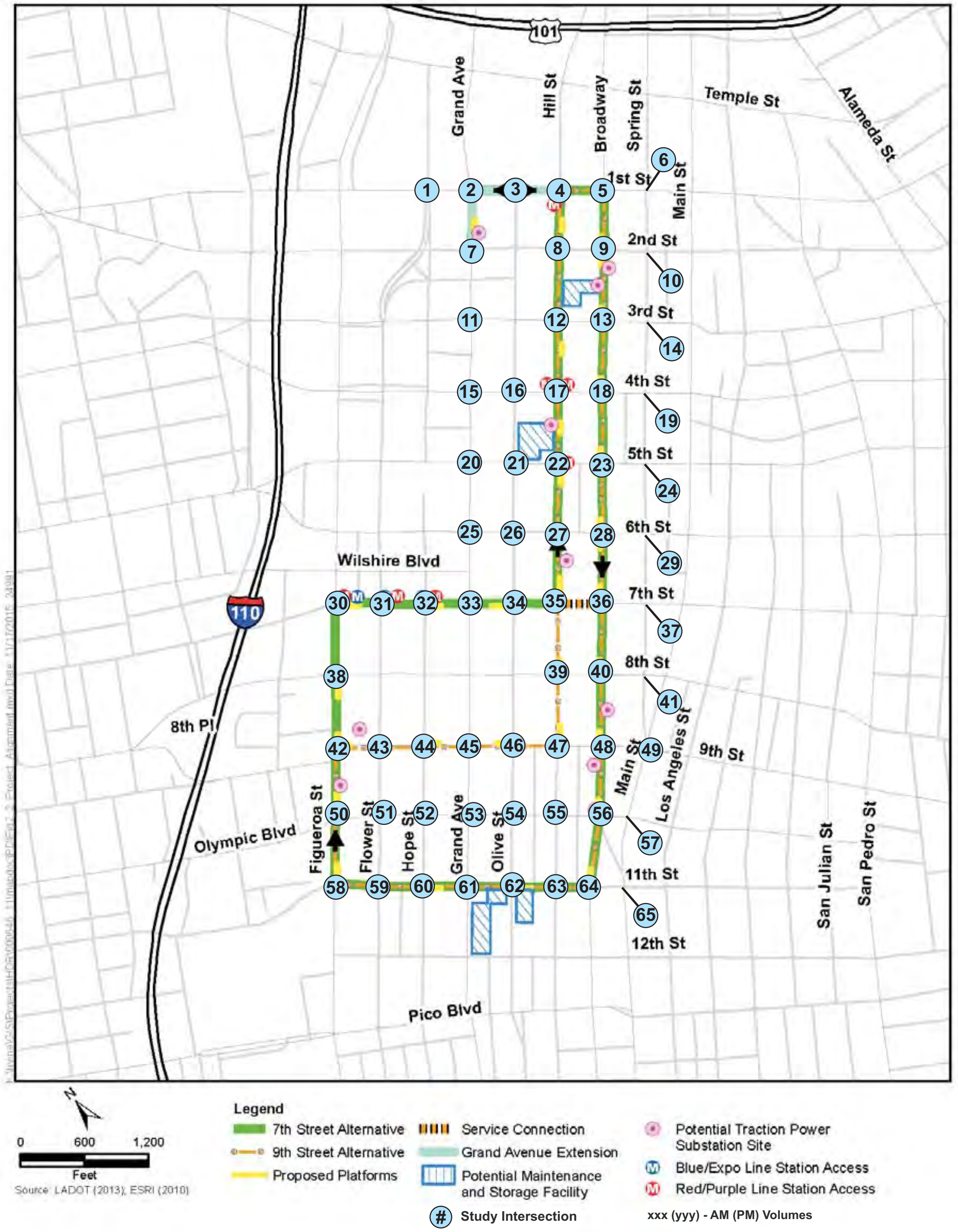
It should be noted that although both intersections along Hill Street are significantly impacted per the significance thresholds, they are operating at LOS D or better, which is considered an acceptable level of service. In addition, as described in the project description, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.

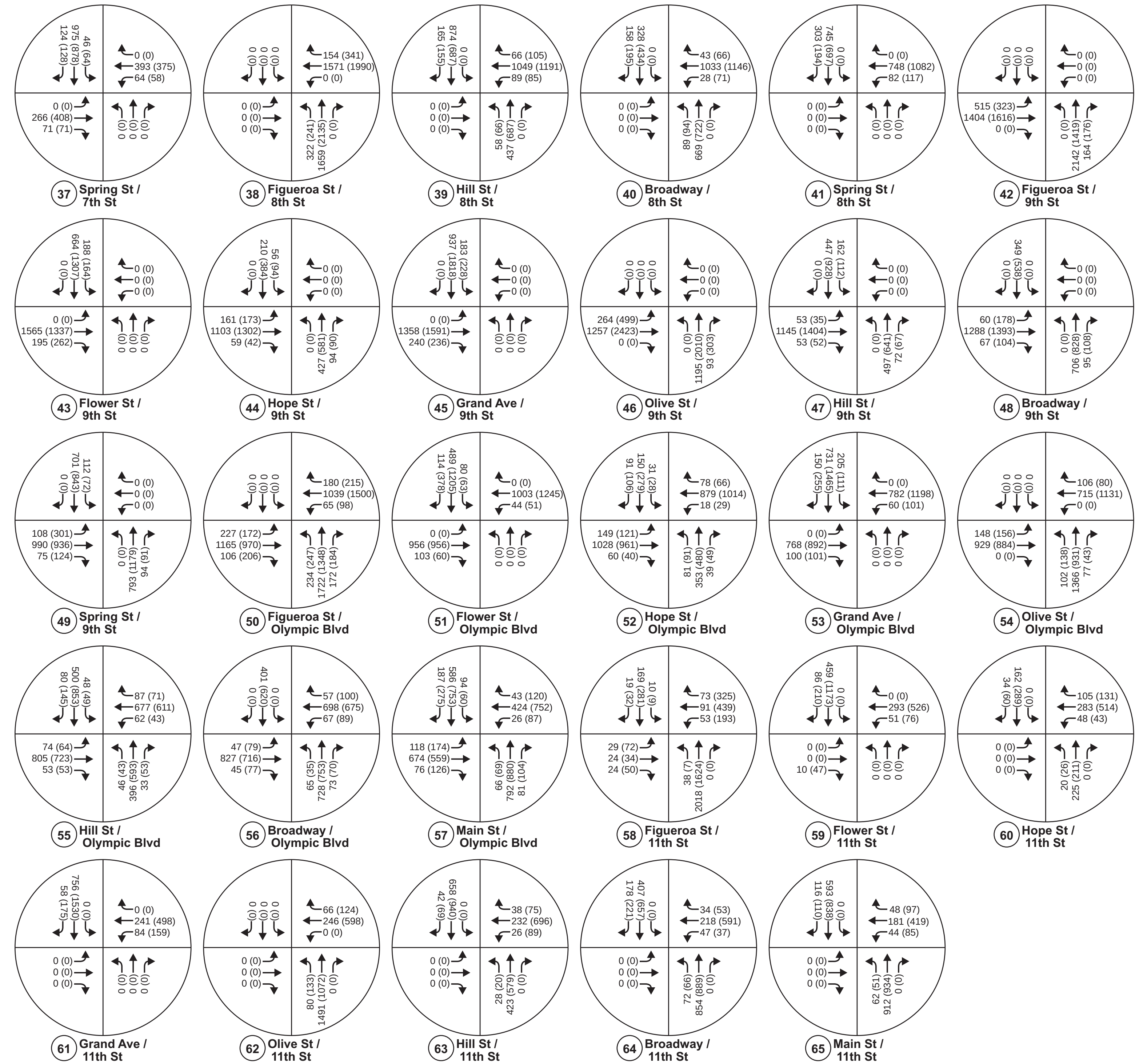


INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-6: Opening Year (2020) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-6: Opening Year (2020) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes (continued)

Table 4-14: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	43.4	D	35.8	D
2	Grand Avenue / 1st Street	62.0	E	56.8	E
3	Olive Street / 1st Street	15.2	B	28.5	C
4	Hill Street / 1st Street	41.2	D	40.8	D
5	Broadway / 1st Street	22.7	C	22.8	C
6	Spring Street / 1st Street	19.3	B	20.7	C
7	Grand Avenue / 2nd Street	19.7	B	23.5	C
8	Hill Street / 2nd Street	24.8	C	27.9	C
9	Broadway / 2nd Street	51.8	D	30.3	C
10	Spring Street / 2nd Street	15.7	B	20.3	C
11	Grand Avenue / 3rd Street	3.1	A	17.5	B
12	Hill Street / 3rd Street	53.2	D	56.2	E
13	Broadway / 3rd Street	120.1	F	21.8	C
14	Spring Street / 3rd Street	38.1	D	26.3	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	20.5	C	26.6	C
17	Hill Street / 4th Street	19.2	B	11.6	B
18	Broadway / 4th Street	22.8	C	13.9	B
19	Spring Street / 4th Street	21.3	C	20.8	C
20	Grand Avenue / 5th Street	16.1	B	28.9	C
21	Olive Street / 5th Street	38.1	D	45.6	D
22	Hill Street / 5th Street	8.9	A	16.1	B
23	Broadway / 5th Street	9.9	A	17.2	B
24	Spring Street / 5th Street	17.1	B	12.8	B
25	Grand Avenue / 6th Street	20.3	C	21.6	C
26	Olive Street / 6th Street	17.0	B	15.0	B
27	Hill Street / 6th Street	8.4	A	6.1	A
28	Broadway / 6th Street	16.7	B	15.9	B
29	Spring Street / 6th Street	8.7	A	11.6	B
30	Figueroa Street / 7th Street	143.6	F	83.2	F
31	Flower Street / 7th Street	19.3	B	17.9	B
32	Hope Street / 7th Street	11.4	B	16.3	B
33	Grand Avenue / 7th Street	17.8	B	55.6	E
34	Olive Street / 7th Street	16.6	B	20.2	C
35	Hill Street / 7th Street	48.6	D	40.3	D
36	Broadway / 7th Street	15.8	B	22.8	C
37	Spring Street / 7th Street	7.7	A	30.8	C
38	Figueroa Street / 8th Street	33.2	C	101.5	F
39	Hill Street / 8th Street	5.4	A	27.9	C
40	Broadway / 8th Street	18.8	B	44.4	D

Table 4-14: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM Delay[1]	AM LOS	PM Delay[1]	PM LOS
41	Spring Street / 8th Street	9.3	A	23.5	C
42	Figueroa Street / 9th Street	116.2	F	32.5	C
43	Flower Street / 9th Street	30.8	C	28.0	C
44	Hope Street / 9th Street	14.6	B	24.4	C
45	Grand Avenue / 9th Street	16.4	B	23.5	C
46	Olive Street / 9th Street	27.4	C	227.4	F
47	Hill Street / 9th Street	25.4	C	28.7	C
48	Broadway / 9th Street	7.6	A	17.1	B
49	Spring Street / 9th Street	13.9	B	31.8	C
50	Figueroa Street / Olympic Boulevard	108.4	F	85.6	F
51	Flower Street / Olympic Boulevard	19.3	B	27.4	C
52	Hope Street / Olympic Boulevard	23.6	C	25.3	C
53	Grand Avenue / Olympic Boulevard	16.8	B	27.8	C
54	Olive Street / Olympic Boulevard	17.1	B	36.0	D
55	Hill Street / Olympic Boulevard	18.3	B	26.8	C
56	Broadway / Olympic Boulevard	22.4	C	26.6	C
57	Main Street / Olympic Boulevard	31.0	C	50.9	D
58	Figueroa Street / 11th Street	113.4	F	71.6	E
59	Flower Street / 11th Street	17.7	B	40.9	D
60	Hope Street / 11th Street	24.3	C	28.1	C
61	Grand Avenue / 11th Street	10.3	B	18.5	B
62	Olive Street / 11th Street	18.9	B	24.5	C
63	Hill Street / 11th Street	8.9	A	37.4	D
64	Broadway / 11th Street	18.5	B	31.3	C
65	Main Street / 11th Street	11.8	B	14.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-15: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	62.0	E	0.6	NO
3	Olive Street / 1st Street	17.4	B	15.2	B	-2.2	NO
4	Hill Street / 1st Street	27.9	C	41.2	D	13.3	YES
5	Broadway / 1st Street	22.9	C	22.7	C	-0.2	NO
6	Spring Street / 1st Street	20.1	C	19.3	B	-0.8	NO
7	Grand Avenue / 2nd Street	19.7	B	19.7	B	0.0	NO
8	Hill Street / 2nd Street	20.0	B	24.8	C	4.8	NO
9	Broadway / 2nd Street	60.9	E	51.8	D	-9.1	NO
10	Spring Street / 2nd Street	15.9	B	15.7	B	-0.2	NO
11	Grand Avenue / 3rd Street	3.1	A	3.1	A	0.0	NO
12	Hill Street / 3rd Street	53.1	D	53.2	D	0.1	NO
13	Broadway / 3rd Street	121.4	F	120.1	F	-1.3	NO
14	Spring Street / 3rd Street	38.0	D	38.1	D	0.1	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	20.5	C	20.5	C	0.0	NO
17	Hill Street / 4th Street	18.9	B	19.2	B	0.3	NO
18	Broadway / 4th Street	22.3	C	22.8	C	0.5	NO
19	Spring Street / 4th Street	21.3	C	21.3	C	0.0	NO
20	Grand Avenue / 5th Street	16.1	B	16.1	B	0.0	NO
21	Olive Street / 5th Street	37.5	D	38.1	D	0.6	NO
22	Hill Street / 5th Street	8.8	A	8.9	A	0.1	NO
23	Broadway / 5th Street	9.0	A	9.9	A	0.9	NO
24	Spring Street / 5th Street	17.0	B	17.1	B	0.1	NO
25	Grand Avenue / 6th Street	20.3	C	20.3	C	0.0	NO
26	Olive Street / 6th Street	15.2	B	17.0	B	1.8	NO
27	Hill Street / 6th Street	9.3	A	8.4	A	-0.9	NO
28	Broadway / 6th Street	17.6	B	16.7	B	-0.9	NO
29	Spring Street / 6th Street	8.6	A	8.7	A	0.1	NO
30	Figueroa Street / 7th Street	145.3	F	143.6	F	-1.7	NO
31	Flower Street / 7th Street	19.2	B	19.3	B	0.1	NO
32	Hope Street / 7th Street	11.3	B	11.4	B	0.1	NO
33	Grand Avenue / 7th Street	17.8	B	17.8	B	0.0	NO
34	Olive Street / 7th Street	17.4	B	16.6	B	-0.8	NO
35	Hill Street / 7th Street	17.5	B	48.6	D	31.1	YES
36	Broadway / 7th Street	13.3	B	15.8	B	2.5	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO

Table 4-15: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	33.8	C	33.2	C	-0.6	NO
39	Hill Street / 8th Street	8.9	A	5.4	A	-3.5	NO
40	Broadway / 8th Street	19.8	B	18.8	B	-1.0	NO
41	Spring Street / 8th Street	9.3	A	9.3	A	0.0	NO
42	Figueroa Street / 9th Street	142.1	F	116.2	F	-25.9	NO
43	Flower Street / 9th Street	30.4	C	30.8	C	0.4	NO
44	Hope Street / 9th Street	14.6	B	14.6	B	0.0	NO
45	Grand Avenue / 9th Street	16.4	B	16.4	B	0.0	NO
46	Olive Street / 9th Street	27.4	C	27.4	C	0.0	NO
47	Hill Street / 9th Street	23.0	C	25.4	C	2.4	NO
48	Broadway / 9th Street	7.9	A	7.6	A	-0.3	NO
49	Spring Street / 9th Street	13.9	B	13.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	108.2	F	108.4	F	0.2	NO
51	Flower Street / Olympic Boulevard	19.3	B	19.3	B	0.0	NO
52	Hope Street / Olympic Boulevard	23.6	C	23.6	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	16.8	B	16.8	B	0.0	NO
54	Olive Street / Olympic Boulevard	17.0	B	17.1	B	0.1	NO
55	Hill Street / Olympic Boulevard	18.1	B	18.3	B	0.2	NO
56	Broadway / Olympic Boulevard	21.9	C	22.4	C	0.5	NO
57	Main Street / Olympic Boulevard	31.0	C	31.0	C	0.0	NO
58	Figueroa Street / 11th Street	114.6	F	113.4	F	-1.2	NO
59	Flower Street / 11th Street	17.4	B	17.7	B	0.3	NO
60	Hope Street / 11th Street	19.7	B	24.3	C	4.6	NO
61	Grand Avenue / 11th Street	10.4	B	10.3	B	-0.1	NO
62	Olive Street / 11th Street	18.5	B	18.9	B	0.4	NO
63	Hill Street / 11th Street	7.8	A	8.9	A	1.1	NO
64	Broadway / 11th Street	21.1	C	18.5	B	-2.6	NO
65	Main Street / 11th Street	11.8	B	11.8	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-16: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	35.4	D	35.8	D	0.4	NO
2	Grand Avenue / 1st Street	34.6	C	56.8	E	22.2	YES
3	Olive Street / 1st Street	32.0	C	28.5	C	-3.5	NO
4	Hill Street / 1st Street	32.1	C	40.8	D	8.7	YES
5	Broadway / 1st Street	23.5	C	22.8	C	-0.7	NO
6	Spring Street / 1st Street	20.6	C	20.7	C	0.1	NO
7	Grand Avenue / 2nd Street	32.8	C	23.5	C	-9.3	NO
8	Hill Street / 2nd Street	32.8	C	27.9	C	-4.9	NO
9	Broadway / 2nd Street	33.1	C	30.3	C	-2.8	NO
10	Spring Street / 2nd Street	20.4	C	20.3	C	-0.1	NO
11	Grand Avenue / 3rd Street	18.8	B	17.5	B	-1.3	NO
12	Hill Street / 3rd Street	56.9	E	56.2	E	-0.7	NO
13	Broadway / 3rd Street	22.4	C	21.8	C	-0.6	NO
14	Spring Street / 3rd Street	26.3	C	26.3	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	26.6	C	26.6	C	0.0	NO
17	Hill Street / 4th Street	10.7	B	11.6	B	0.9	NO
18	Broadway / 4th Street	13.3	B	13.9	B	0.6	NO
19	Spring Street / 4th Street	20.8	C	20.8	C	0.0	NO
20	Grand Avenue / 5th Street	29.0	C	28.9	C	-0.1	NO
21	Olive Street / 5th Street	45.2	D	45.6	D	0.4	NO
22	Hill Street / 5th Street	21.9	C	16.1	B	-5.8	NO
23	Broadway / 5th Street	17.2	B	17.2	B	0.0	NO
24	Spring Street / 5th Street	12.8	B	12.8	B	0.0	NO
25	Grand Avenue / 6th Street	21.6	C	21.6	C	0.0	NO
26	Olive Street / 6th Street	15.1	B	15.0	B	-0.1	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	15.3	B	15.9	B	0.6	NO
29	Spring Street / 6th Street	11.6	B	11.6	B	0.0	NO
30	Figueroa Street / 7th Street	84.0	F	83.2	F	-0.8	NO
31	Flower Street / 7th Street	17.8	B	17.9	B	0.1	NO
32	Hope Street / 7th Street	16.5	B	16.3	B	-0.2	NO
33	Grand Avenue / 7th Street	56.0	E	55.6	E	-0.4	NO
34	Olive Street / 7th Street	20.3	C	20.2	C	-0.1	NO
35	Hill Street / 7th Street	35.1	D	40.3	D	5.2	YES
36	Broadway / 7th Street	19.0	B	22.8	C	3.8	NO
37	Spring Street / 7th Street	30.8	C	30.8	C	0.0	NO

Table 4-16: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	148.4	F	101.5	F	-46.9	NO
39	Hill Street / 8th Street	30.3	C	27.9	C	-2.4	NO
40	Broadway / 8th Street	42.1	D	44.4	D	2.3	NO
41	Spring Street / 8th Street	23.5	C	23.5	C	0.0	NO
42	Figueroa Street / 9th Street	40.7	D	32.5	C	-8.2	NO
43	Flower Street / 9th Street	27.8	C	28.0	C	0.2	NO
44	Hope Street / 9th Street	24.4	C	24.4	C	0.0	NO
45	Grand Avenue / 9th Street	23.5	C	23.5	C	0.0	NO
46	Olive Street / 9th Street	227.4	F	227.4	F	0.0	NO
47	Hill Street / 9th Street	28.9	C	28.7	C	-0.2	NO
48	Broadway / 9th Street	16.8	B	17.1	B	0.3	NO
49	Spring Street / 9th Street	31.8	C	31.8	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	86.2	F	85.6	F	-0.6	NO
51	Flower Street / Olympic Boulevard	27.5	C	27.4	C	-0.1	NO
52	Hope Street / Olympic Boulevard	25.3	C	25.3	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	27.8	C	27.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	36.1	D	36.0	D	-0.1	NO
55	Hill Street / Olympic Boulevard	28.1	C	26.8	C	-1.3	NO
56	Broadway / Olympic Boulevard	24.0	C	26.6	C	2.6	NO
57	Main Street / Olympic Boulevard	50.9	D	50.9	D	0.0	NO
58	Figueroa Street / 11th Street	71.8	E	71.6	E	-0.2	NO
59	Flower Street / 11th Street	42.6	D	40.9	D	-1.7	NO
60	Hope Street / 11th Street	38.7	D	28.1	C	-10.6	NO
61	Grand Avenue / 11th Street	18.3	B	18.5	B	0.2	NO
62	Olive Street / 11th Street	21.1	C	24.5	C	3.4	NO
63	Hill Street / 11th Street	40.3	D	37.4	D	-2.9	NO
64	Broadway / 11th Street	65.0	E	31.3	C	-33.7	NO
65	Main Street / 11th Street	14.8	B	14.8	B	0.0	NO

[1] Average vehicle delay in seconds

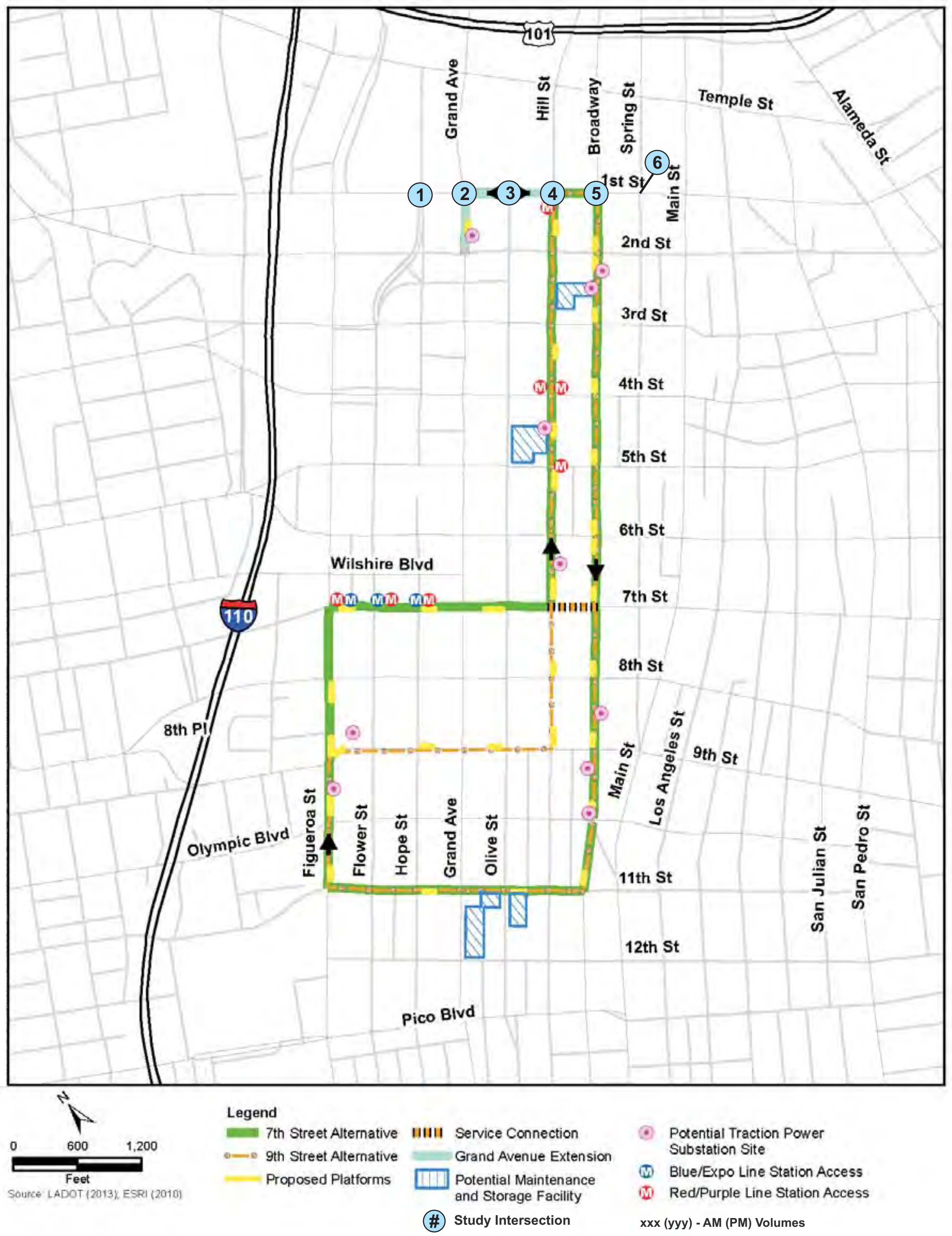
Opening Year (2020) – 7th Street Alternative Without Grand Avenue Extension

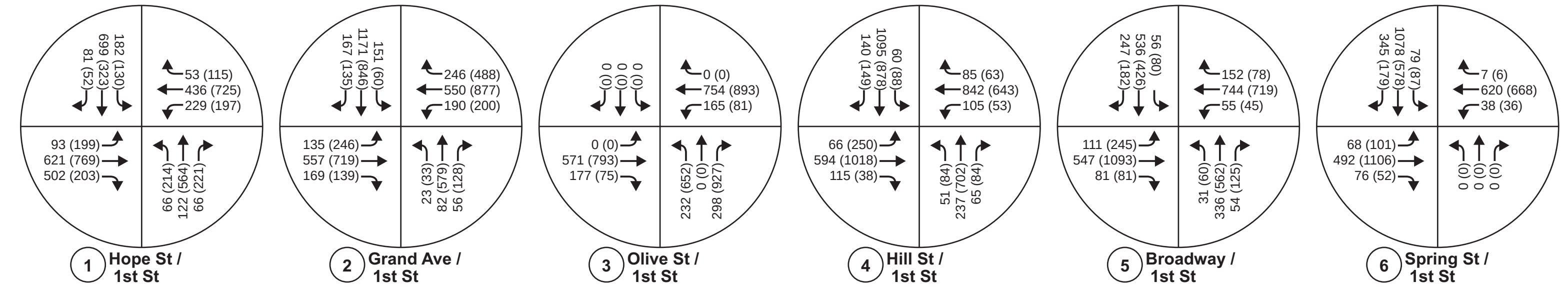
This scenario consists of adding the 7th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Opening Year (2020) without Project AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 7th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the six affected intersection locations are illustrated in **Figure 4-7.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-6.**

The Opening Year (2020) with the 7th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-17** and also included in **Appendix G**. The intersection analysis showed that only the intersection of Grand Avenue and 1st Street operates at LOS E in the AM peak hour and LOS C in the PM peak hour. The remaining five intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the LOS for the intersection of Grand Avenue and 1st Street did not change and is the same as that identified in the Opening Year (2020) without Project level of service analysis. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-14**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Opening Year (2020) to identify significantly (CEQA) affected locations. As shown in **Table 4-18** and **Table 4-19**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted.

For the remaining 59 intersections, the comparison results are the same as the 7th Street Alternative with the Grand Avenue Extension. As previously presented in **Table 4-15** and **Table 4-16**, the intersection of Hill Street and 7th Street is significantly impacted during both AM and PM peak hours. This intersection is significantly impacted due to the addition of a protected signal phase for the streetcar. Although this intersection is significantly impacted per the significance thresholds, it is operating at LOS D or better, which is considered an acceptable level of service.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-7: Opening Year (2020) - 7th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-17: Opening Year (2020) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	43.4	D	35.4	D
2	Grand Avenue / 1st Street	61.4	E	34.6	C
3	Olive Street / 1st Street	17.4	B	32.0	C
4	Hill Street / 1st Street	28.4	C	32.6	C
5	Broadway / 1st Street	23.0	C	23.0	C
6	Spring Street / 1st Street	20.0	B	20.5	C

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F
Note: The LOS for the remaining intersections does not change and can be found in Table 4-16

Table 4-18: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	61.4	E	0.0	NO
3	Olive Street / 1st Street	17.4	B	17.4	B	0.0	NO
4	Hill Street / 1st Street	27.9	C	28.4	C	0.5	NO
5	Broadway / 1st Street	22.9	C	23.0	C	0.1	NO
6	Spring Street / 1st Street	20.1	C	20.0	B	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-17

Table 4-19: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	35.4	D	35.4	D	0.0	NO
2	Grand Avenue / 1st Street	34.6	C	34.6	C	0.0	NO
3	Olive Street / 1st Street	32.0	C	32.0	C	0.0	NO
4	Hill Street / 1st Street	32.1	C	32.6	C	0.5	NO
5	Broadway / 1st Street	23.5	C	23.0	C	-0.5	NO
6	Spring Street / 1st Street	20.6	C	20.5	C	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-18

Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension

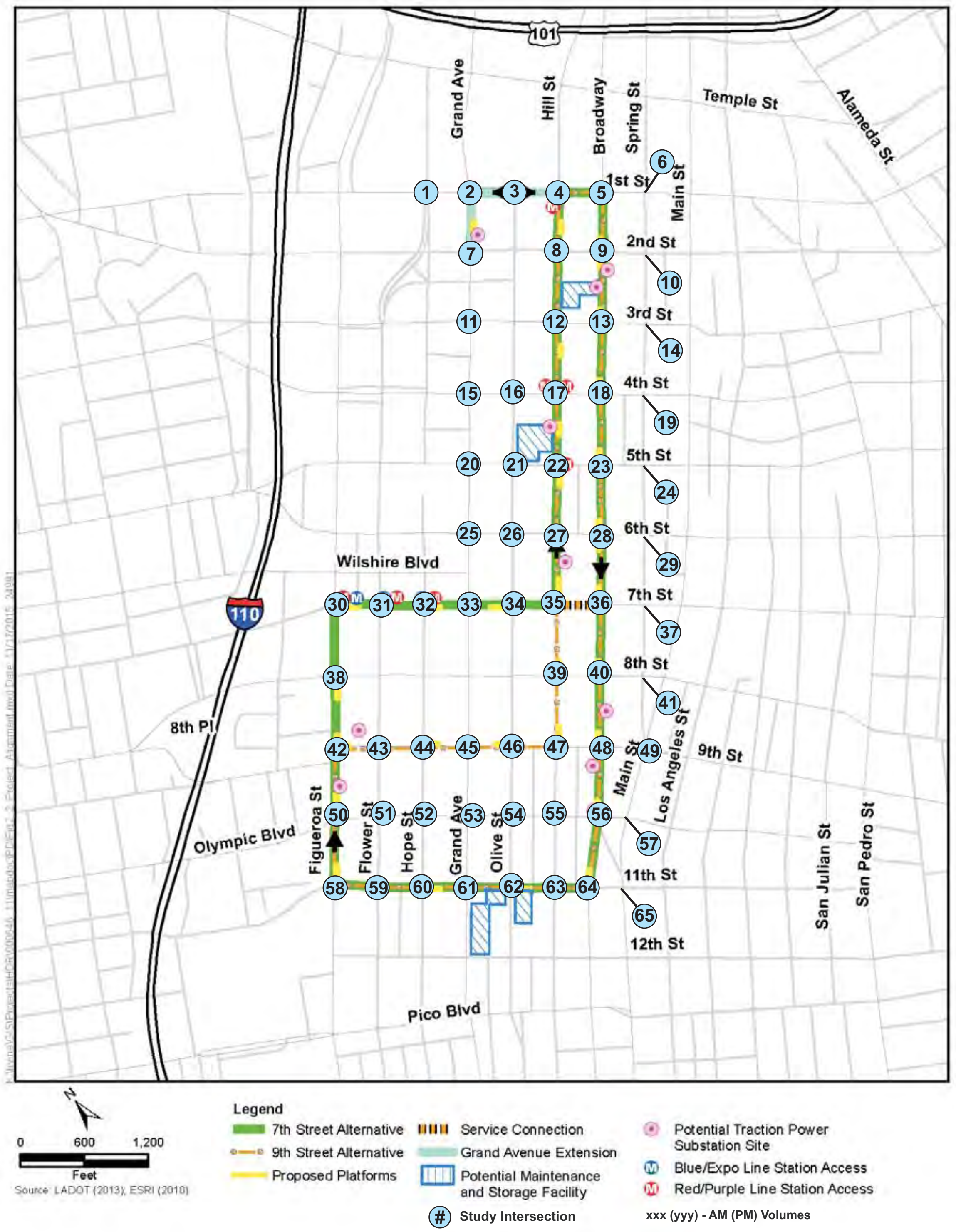
This scenario consists of adding the 9th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Opening Year (2020) without Project AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes are illustrated in **Figure 4-8.**

The intersection traffic analysis was completed, and the corresponding LOS are provided in **Table 4-20** and also included in **Appendix H**. The intersection analysis showed that 10 of the 65 locations operate at LOS E or F. The remaining 55 intersections operate at LOS D or better during both AM and PM peak hours. The 10 locations operating at LOS E or F are the same as those identified in the Opening Year (2020) without Project level of service analysis.

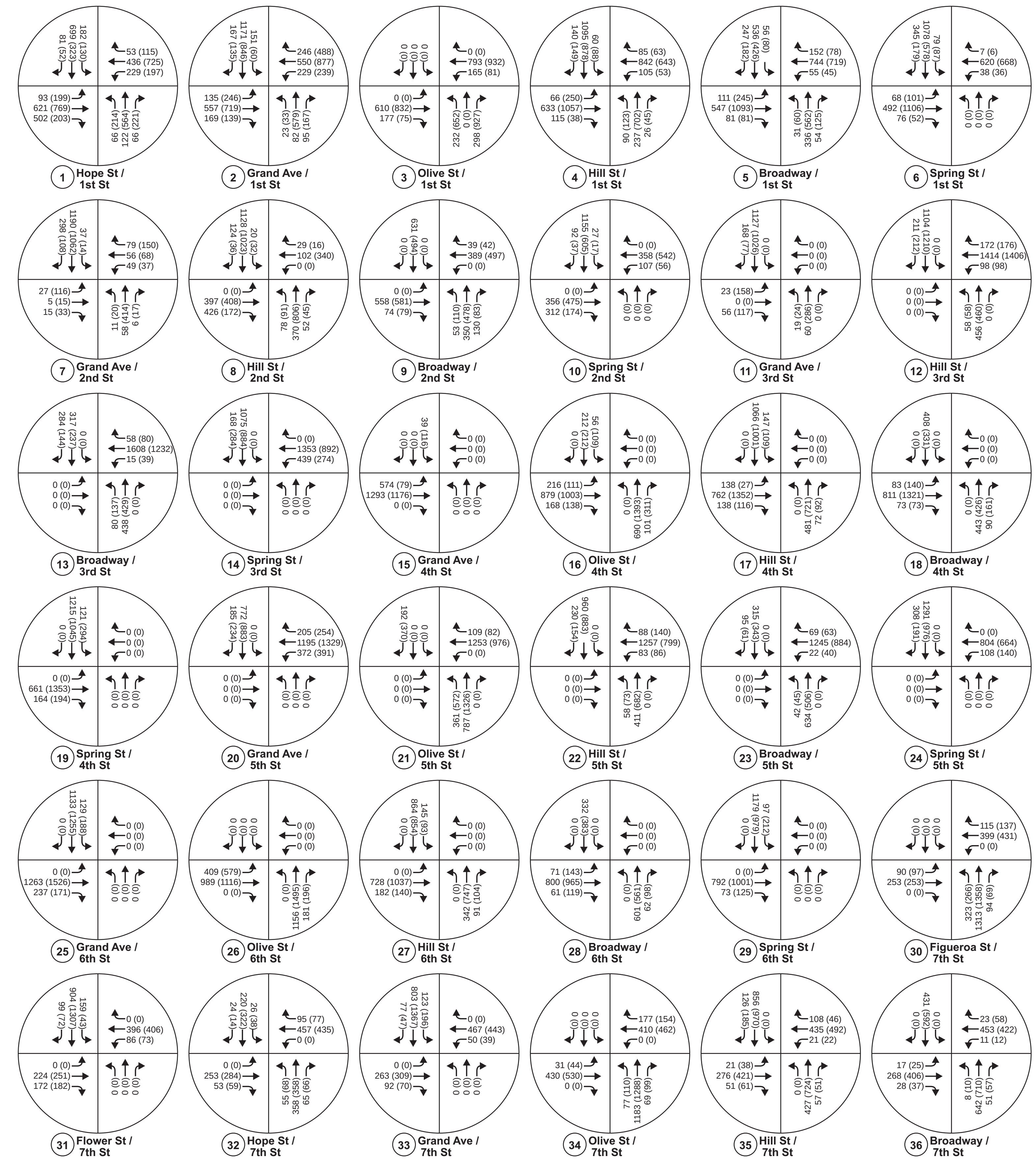
Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Opening Year (2020) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-21** and **Table 4-22**, two intersections are anticipated to be significantly impacted by this alternative. The two significantly impacted intersections are as follows:

- Grand Avenue and 1st Street
- Hill Street and 1st Street

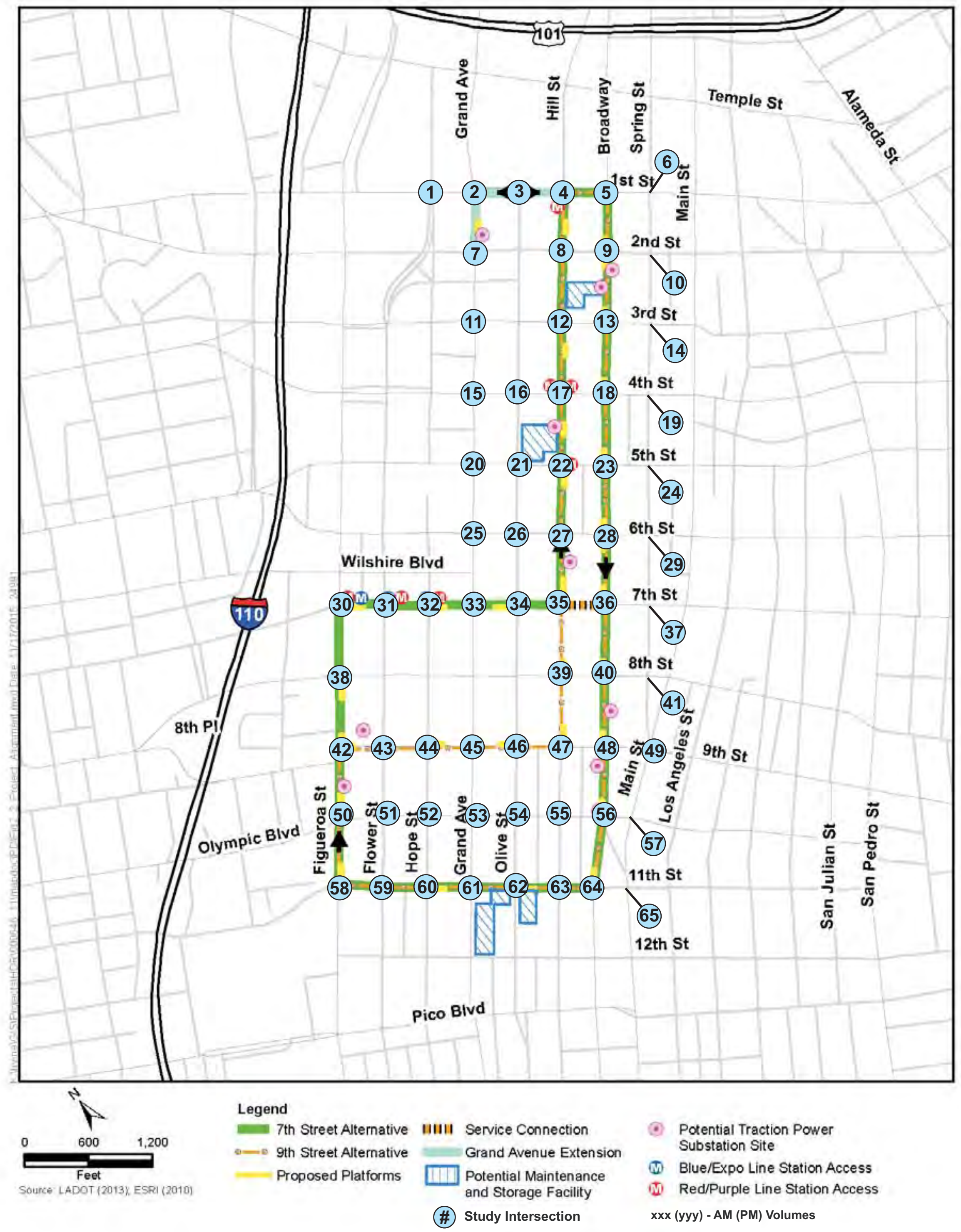
It should be noted that although both these intersections are significantly impacted per the significance thresholds, the intersection of Hill Street and 1st Street is operating at LOS D or better, which is considered an acceptable level of service. In addition, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.

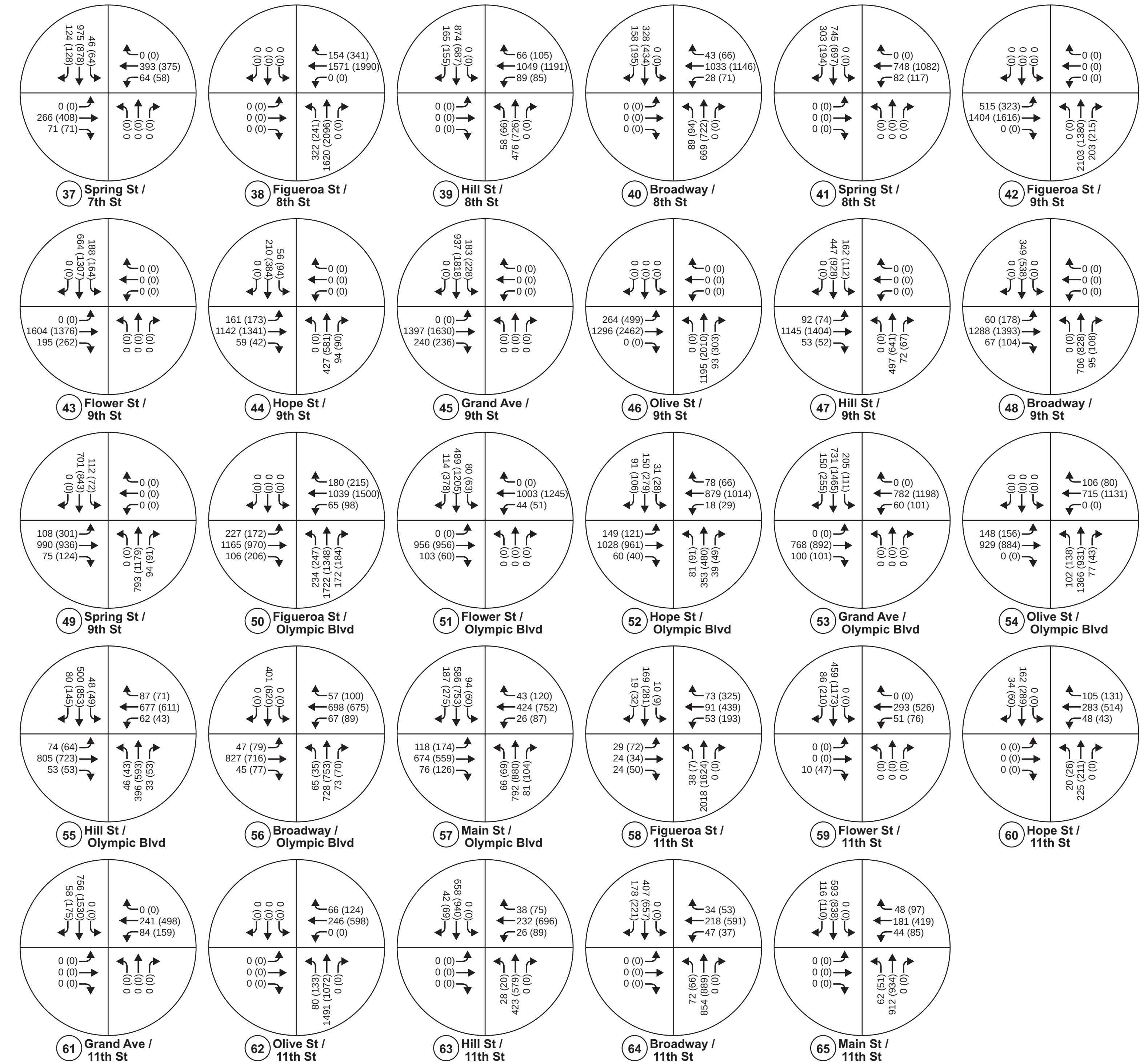


101
Temple St
Alameda St
Grand Ave
Hill St
Broadway
Spring St
Main St
1st St
2nd St
3rd St
4th St
5th St
6th St
Wilshire Blvd
7th St
8th St
8th Pl
9th St
Los Angeles St
Olympic Blvd
Figueroa St
Flower St
Hope St
Olive St
11th St
12th St
Pico Blvd
San Julian St
San Pedro St
110
Legend
7th Street Alternative
9th Street Alternative
Proposed Platforms
Service Connection
Grand Avenue Extension
Potential Maintenance and Storage Facility
Study Intersection
Potential Traction Power Substation Site
Blue/Expo Line Station Access
Red/Purple Line Station Access
xxx (yyy) - AM (PM) Volumes
0 600 1,200
Feet
Source: LADOT (2013), ESRI (2010)



1 Hope St / 1st St
2 Grand Ave / 1st St
3 Olive St / 1st St
4 Hill St / 1st St
5 Broadway / 1st St
6 Spring St / 1st St
7 Grand Ave / 2nd St
8 Hill St / 2nd St
9 Broadway / 2nd St
10 Spring St / 2nd St
11 Grand Ave / 3rd St
12 Hill St / 3rd St
13 Broadway / 3rd St
14 Spring St / 3rd St
15 Grand Ave / 4th St
16 Olive St / 4th St
17 Hill St / 4th St
18 Broadway / 4th St
19 Spring St / 4th St
20 Grand Ave / 5th St
21 Olive St / 5th St
22 Hill St / 5th St
23 Broadway / 5th St
24 Spring St / 5th St
25 Grand Ave / 6th St
26 Olive St / 6th St
27 Hill St / 6th St
28 Broadway / 6th St
29 Spring St / 6th St
30 Figueroa St / 7th St
31 Flower St / 7th St
32 Hope St / 7th St
33 Grand Ave / 7th St
34 Olive St / 7th St
35 Hill St / 7th St
36 Broadway / 7th St





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-8: Opening Year (2020) - 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes (continued)

Table 4-20: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	43.4	D	35.8	D
2	Grand Avenue / 1st Street	62.0	E	56.8	E
3	Olive Street / 1st Street	15.2	B	28.5	C
4	Hill Street / 1st Street	41.2	D	40.8	D
5	Broadway / 1st Street	22.7	C	22.8	C
6	Spring Street / 1st Street	19.3	B	20.7	C
7	Grand Avenue / 2nd Street	19.7	B	23.5	C
8	Hill Street / 2nd Street	24.8	C	27.9	C
9	Broadway / 2nd Street	51.8	D	30.3	C
10	Spring Street / 2nd Street	15.7	B	20.3	C
11	Grand Avenue / 3rd Street	3.1	A	17.5	B
12	Hill Street / 3rd Street	53.2	D	56.2	E
13	Broadway / 3rd Street	120.1	F	21.8	C
14	Spring Street / 3rd Street	38.1	D	26.3	C
15	Grand Avenue / 4th Street	4.0	A	5.2	A
16	Olive Street / 4th Street	20.5	C	26.6	C
17	Hill Street / 4th Street	19.2	B	11.6	B
18	Broadway / 4th Street	22.8	C	13.9	B
19	Spring Street / 4th Street	21.3	C	20.9	C
20	Grand Avenue / 5th Street	16.1	B	28.9	C
21	Olive Street / 5th Street	37.5	D	45.7	D
22	Hill Street / 5th Street	9.0	A	17.1	B
23	Broadway / 5th Street	9.9	A	17.7	B
24	Spring Street / 5th Street	17.1	B	12.8	B
25	Grand Avenue / 6th Street	20.3	C	21.6	C
26	Olive Street / 6th Street	15.2	B	15.0	B
27	Hill Street / 6th Street	9.6	A	6.1	A
28	Broadway / 6th Street	16.6	B	15.8	B
29	Spring Street / 6th Street	8.7	A	11.6	B
30	Figueroa Street / 7th Street	145.3	F	84.0	F
31	Flower Street / 7th Street	19.2	B	17.8	B
32	Hope Street / 7th Street	11.3	B	15.7	B
33	Grand Avenue / 7th Street	17.8	B	56.0	E
34	Olive Street / 7th Street	15.8	B	24.7	C
35	Hill Street / 7th Street	17.3	B	33.0	C
36	Broadway / 7th Street	15.1	B	23.1	C
37	Spring Street / 7th Street	7.7	A	30.8	C
38	Figueroa Street / 8th Street	34.1	C	148.5	F
39	Hill Street / 8th Street	8.6	A	30.6	C
40	Broadway / 8th Street	18.8	B	44.3	D

Table 4-20: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	9.3	A	23.5	C
42	Figueroa Street / 9th Street	109.7	F	31.2	C
43	Flower Street / 9th Street	31.1	C	28.1	C
44	Hope Street / 9th Street	14.7	B	18.9	B
45	Grand Avenue / 9th Street	16.8	B	24.6	C
46	Olive Street / 9th Street	19.3	B	180.4	F
47	Hill Street / 9th Street	22.9	C	19.1	B
48	Broadway / 9th Street	7.5	A	17.1	B
49	Spring Street / 9th Street	13.9	B	31.8	C
50	Figueroa Street / Olympic Boulevard	108.4	F	85.6	F
51	Flower Street / Olympic Boulevard	19.3	B	27.5	C
52	Hope Street / Olympic Boulevard	23.6	C	25.3	C
53	Grand Avenue / Olympic Boulevard	16.8	B	27.8	C
54	Olive Street / Olympic Boulevard	17.0	B	35.9	D
55	Hill Street / Olympic Boulevard	18.1	B	25.8	C
56	Broadway / Olympic Boulevard	22.5	C	26.6	C
57	Main Street / Olympic Boulevard	31.0	C	50.9	D
58	Figueroa Street / 11th Street	113.4	F	71.6	E
59	Flower Street / 11th Street	17.7	B	40.9	D
60	Hope Street / 11th Street	24.3	C	28.1	C
61	Grand Avenue / 11th Street	10.3	B	18.5	B
62	Olive Street / 11th Street	18.9	B	24.5	C
63	Hill Street / 11th Street	8.7	A	37.4	D
64	Broadway / 11th Street	18.5	B	31.3	C
65	Main Street / 11th Street	11.8	B	14.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-21: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	62.0	E	0.6	NO
3	Olive Street / 1st Street	17.4	B	15.2	B	-2.2	NO
4	Hill Street / 1st Street	27.9	C	41.2	D	13.3	YES
5	Broadway / 1st Street	22.9	C	22.7	C	-0.2	NO
6	Spring Street / 1st Street	20.1	C	19.3	B	-0.8	NO
7	Grand Avenue / 2nd Street	19.7	B	19.7	B	0.0	NO
8	Hill Street / 2nd Street	20.0	B	24.8	C	4.8	NO
9	Broadway / 2nd Street	60.9	E	51.8	D	-9.1	NO
10	Spring Street / 2nd Street	15.9	B	15.7	B	-0.2	NO
11	Grand Avenue / 3rd Street	3.1	A	3.1	A	0.0	NO
12	Hill Street / 3rd Street	53.1	D	53.2	D	0.1	NO
13	Broadway / 3rd Street	121.4	F	120.1	F	-1.3	NO
14	Spring Street / 3rd Street	38.0	D	38.1	D	0.1	NO
15	Grand Avenue / 4th Street	4.0	A	4.0	A	0.0	NO
16	Olive Street / 4th Street	20.5	C	20.5	C	0.0	NO
17	Hill Street / 4th Street	18.9	B	19.2	B	0.3	NO
18	Broadway / 4th Street	22.3	C	22.8	C	0.5	NO
19	Spring Street / 4th Street	21.3	C	21.3	C	0.0	NO
20	Grand Avenue / 5th Street	16.1	B	16.1	B	0.0	NO
21	Olive Street / 5th Street	37.5	D	37.5	D	0.0	NO
22	Hill Street / 5th Street	8.8	A	9.0	A	0.2	NO
23	Broadway / 5th Street	9.0	A	9.9	A	0.9	NO
24	Spring Street / 5th Street	17.0	B	17.1	B	0.1	NO
25	Grand Avenue / 6th Street	20.3	C	20.3	C	0.0	NO
26	Olive Street / 6th Street	15.2	B	15.2	B	0.0	NO
27	Hill Street / 6th Street	9.3	A	9.6	A	0.3	NO
28	Broadway / 6th Street	17.6	B	16.6	B	-1.0	NO
29	Spring Street / 6th Street	8.6	A	8.7	A	0.1	NO
30	Figueroa Street / 7th Street	145.3	F	145.3	F	0.0	NO
31	Flower Street / 7th Street	19.2	B	19.2	B	0.0	NO
32	Hope Street / 7th Street	11.3	B	11.3	B	0.0	NO
33	Grand Avenue / 7th Street	17.8	B	17.8	B	0.0	NO
34	Olive Street / 7th Street	17.4	B	15.8	B	-1.6	NO
35	Hill Street / 7th Street	17.5	B	17.3	B	-0.2	NO
36	Broadway / 7th Street	13.3	B	15.1	B	1.8	NO
37	Spring Street / 7th Street	7.7	A	7.7	A	0.0	NO

Table 4-21: AM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	33.8	C	34.1	C	0.3	NO
39	Hill Street / 8th Street	8.9	A	8.6	A	-0.3	NO
40	Broadway / 8th Street	19.8	B	18.8	B	-1.0	NO
41	Spring Street / 8th Street	9.3	A	9.3	A	0.0	NO
42	Figueroa Street / 9th Street	142.1	F	109.7	F	-32.4	NO
43	Flower Street / 9th Street	30.4	C	31.1	C	0.7	NO
44	Hope Street / 9th Street	14.6	B	14.7	B	0.1	NO
45	Grand Avenue / 9th Street	16.4	B	16.8	B	0.4	NO
46	Olive Street / 9th Street	27.4	C	19.3	B	-8.1	NO
47	Hill Street / 9th Street	23.0	C	22.9	C	-0.1	NO
48	Broadway / 9th Street	7.9	A	7.5	A	-0.4	NO
49	Spring Street / 9th Street	13.9	B	13.9	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	108.2	F	108.4	F	0.2	NO
51	Flower Street / Olympic Boulevard	19.3	B	19.3	B	0.0	NO
52	Hope Street / Olympic Boulevard	23.6	C	23.6	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	16.8	B	16.8	B	0.0	NO
54	Olive Street / Olympic Boulevard	17.0	B	17.0	B	0.0	NO
55	Hill Street / Olympic Boulevard	18.1	B	18.1	B	0.0	NO
56	Broadway / Olympic Boulevard	21.9	C	22.5	C	0.6	NO
57	Main Street / Olympic Boulevard	31.0	C	31.0	C	0.0	NO
58	Figueroa Street / 11th Street	114.6	F	113.4	F	-1.2	NO
59	Flower Street / 11th Street	17.4	B	17.7	B	0.3	NO
60	Hope Street / 11th Street	19.7	B	24.3	C	4.6	NO
61	Grand Avenue / 11th Street	10.4	B	10.3	B	-0.1	NO
62	Olive Street / 11th Street	18.5	B	18.9	B	0.4	NO
63	Hill Street / 11th Street	7.8	A	8.7	A	0.9	NO
64	Broadway / 11th Street	21.1	C	18.5	B	-2.6	NO
65	Main Street / 11th Street	11.8	B	11.8	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-22: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	35.4	D	35.8	D	0.4	NO
2	Grand Avenue / 1st Street	34.6	C	56.8	E	22.2	YES
3	Olive Street / 1st Street	32.0	C	28.5	C	-3.5	NO
4	Hill Street / 1st Street	32.1	C	40.8	D	8.7	YES
5	Broadway / 1st Street	23.5	C	22.8	C	-0.7	NO
6	Spring Street / 1st Street	20.6	C	20.7	C	0.1	NO
7	Grand Avenue / 2nd Street	32.8	C	23.5	C	-9.3	NO
8	Hill Street / 2nd Street	32.8	C	27.9	C	-4.9	NO
9	Broadway / 2nd Street	33.1	C	30.3	C	-2.8	NO
10	Spring Street / 2nd Street	20.4	C	20.3	C	-0.1	NO
11	Grand Avenue / 3rd Street	18.8	B	17.5	B	-1.3	NO
12	Hill Street / 3rd Street	56.9	E	56.2	E	-0.7	NO
13	Broadway / 3rd Street	22.4	C	21.8	C	-0.6	NO
14	Spring Street / 3rd Street	26.3	C	26.3	C	0.0	NO
15	Grand Avenue / 4th Street	5.2	A	5.2	A	0.0	NO
16	Olive Street / 4th Street	26.6	C	26.6	C	0.0	NO
17	Hill Street / 4th Street	10.7	B	11.6	B	0.9	NO
18	Broadway / 4th Street	13.3	B	13.9	B	0.6	NO
19	Spring Street / 4th Street	20.8	C	20.9	C	0.1	NO
20	Grand Avenue / 5th Street	29.0	C	28.9	C	-0.1	NO
21	Olive Street / 5th Street	45.2	D	45.7	D	0.5	NO
22	Hill Street / 5th Street	21.9	C	17.1	B	-4.8	NO
23	Broadway / 5th Street	17.2	B	17.7	B	0.5	NO
24	Spring Street / 5th Street	12.8	B	12.8	B	0.0	NO
25	Grand Avenue / 6th Street	21.6	C	21.6	C	0.0	NO
26	Olive Street / 6th Street	15.1	B	15.0	B	-0.1	NO
27	Hill Street / 6th Street	8.1	A	6.1	A	-2.0	NO
28	Broadway / 6th Street	15.3	B	15.8	B	0.5	NO
29	Spring Street / 6th Street	11.6	B	11.6	B	0.0	NO
30	Figueroa Street / 7th Street	84.0	F	84.0	F	0.0	NO
31	Flower Street / 7th Street	17.8	B	17.8	B	0.0	NO
32	Hope Street / 7th Street	16.5	B	15.7	B	-0.8	NO
33	Grand Avenue / 7th Street	56.0	E	56.0	E	0.0	NO
34	Olive Street / 7th Street	20.3	C	24.7	C	4.4	NO
35	Hill Street / 7th Street	35.1	D	33.0	C	-2.1	NO
36	Broadway / 7th Street	19.0	B	23.1	C	4.1	NO
37	Spring Street / 7th Street	30.8	C	30.8	C	0.0	NO

Table 4-22: PM Peak Hour – 9th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	148.4	F	148.5	F	0.1	NO
39	Hill Street / 8th Street	30.3	C	30.6	C	0.3	NO
40	Broadway / 8th Street	42.1	D	44.3	D	2.2	NO
41	Spring Street / 8th Street	23.5	C	23.5	C	0.0	NO
42	Figueroa Street / 9th Street	40.7	D	31.2	C	-9.5	NO
43	Flower Street / 9th Street	27.8	C	28.1	C	0.3	NO
44	Hope Street / 9th Street	24.4	C	18.9	B	-5.5	NO
45	Grand Avenue / 9th Street	23.5	C	24.6	C	1.1	NO
46	Olive Street / 9th Street	227.4	F	180.4	F	-47.0	NO
47	Hill Street / 9th Street	28.9	C	19.1	B	-9.8	NO
48	Broadway / 9th Street	16.8	B	17.1	B	0.3	NO
49	Spring Street / 9th Street	31.8	C	31.8	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	86.2	F	85.6	F	-0.6	NO
51	Flower Street / Olympic Boulevard	27.5	C	27.5	C	0.0	NO
52	Hope Street / Olympic Boulevard	25.3	C	25.3	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	27.8	C	27.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	36.1	D	35.9	D	-0.2	NO
55	Hill Street / Olympic Boulevard	28.1	C	25.8	C	-2.3	NO
56	Broadway / Olympic Boulevard	24.0	C	26.6	C	2.6	NO
57	Main Street / Olympic Boulevard	50.9	D	50.9	D	0.0	NO
58	Figueroa Street / 11th Street	71.8	E	71.6	E	-0.2	NO
59	Flower Street / 11th Street	42.6	D	40.9	D	-1.7	NO
60	Hope Street / 11th Street	38.7	D	28.1	C	-10.6	NO
61	Grand Avenue / 11th Street	18.3	B	18.5	B	0.2	NO
62	Olive Street / 11th Street	21.1	C	24.5	C	3.4	NO
63	Hill Street / 11th Street	40.3	D	37.4	D	-2.9	NO
64	Broadway / 11th Street	65.0	E	31.3	C	-33.7	NO
65	Main Street / 11th Street	14.8	B	14.8	B	0.0	NO

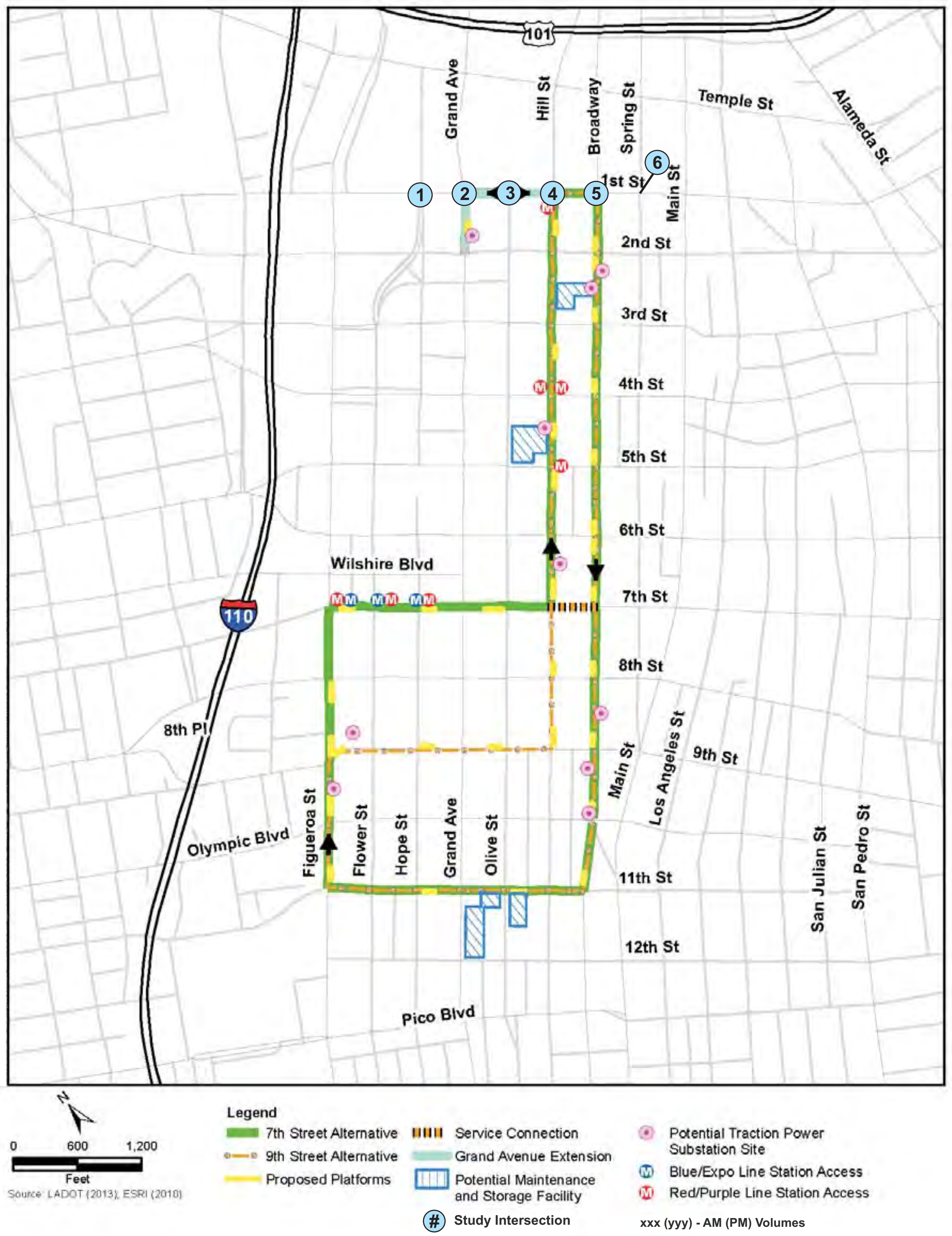
[1] Average vehicle delay in seconds

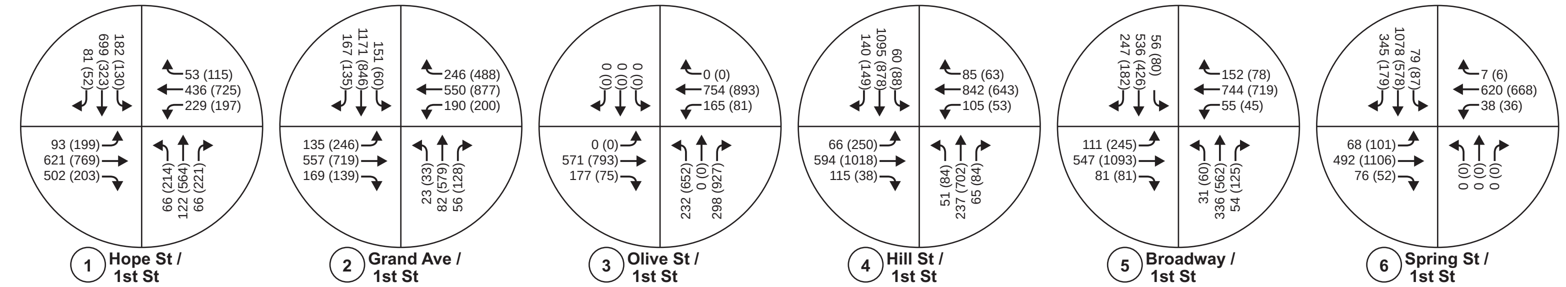
Opening Year (2020) – 9th Street Alternative Without Grand Avenue Extension

This scenario consists of adding the 9th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Opening Year (2020) without Project AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 9th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the 6 affected intersection locations are illustrated in **Figure 4-9.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-8.**

The Opening Year (2020) with the 9th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-23** and also included in **Appendix H**. The intersection analysis showed that only the intersection of Grand Avenue and 1st Street operates at LOS E in the AM peak hour and LOS C in the PM peak hour. The remaining five intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the LOS for the intersection of Grand Avenue and 1st Street did not change and is the same as that identified in the Opening Year (2020) without Project level of service analysis. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-20**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Opening Year (2020) to identify significantly (CEQA) affected locations. As shown in **Table 4-24** and **Table 4-25**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the comparison results are the same as the 9th Street Alternative with the Grand Avenue Extension; i.e., no significantly impacted intersections.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-9: Opening Year (2020) - 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-23: Opening Year (2020) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	43.4	D	35.4	D
2	Grand Avenue / 1st Street	61.4	E	34.6	C
3	Olive Street / 1st Street	17.4	B	32.0	C
4	Hill Street / 1st Street	28.4	C	32.6	C
5	Broadway / 1st Street	23.0	C	23.0	C
6	Spring Street / 1st Street	20.0	B	20.5	C

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F
Note: The LOS for the remaining intersections does not change and can be found in Table 4-22

Table 4-24: AM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	43.4	D	43.4	D	0.0	NO
2	Grand Avenue / 1st Street	61.4	E	61.4	E	0.0	NO
3	Olive Street / 1st Street	17.4	B	17.4	B	0.0	NO
4	Hill Street / 1st Street	27.9	C	28.4	C	0.5	NO
5	Broadway / 1st Street	22.9	C	23.0	C	0.1	NO
6	Spring Street / 1st Street	20.1	C	20.0	B	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-23

Table 4-25: PM Peak Hour – 9th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Opening Year (2020) With and Without Project)

#	Intersection	2020 Without Project		2020 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	35.4	D	35.4	D	0.0	NO
2	Grand Avenue / 1st Street	34.6	C	34.6	C	0.0	NO
3	Olive Street / 1st Street	32.0	C	32.0	C	0.0	NO
4	Hill Street / 1st Street	32.1	C	32.6	C	0.5	NO
5	Broadway / 1st Street	23.5	C	23.0	C	-0.5	NO
6	Spring Street / 1st Street	20.6	C	20.5	C	-0.1	NO

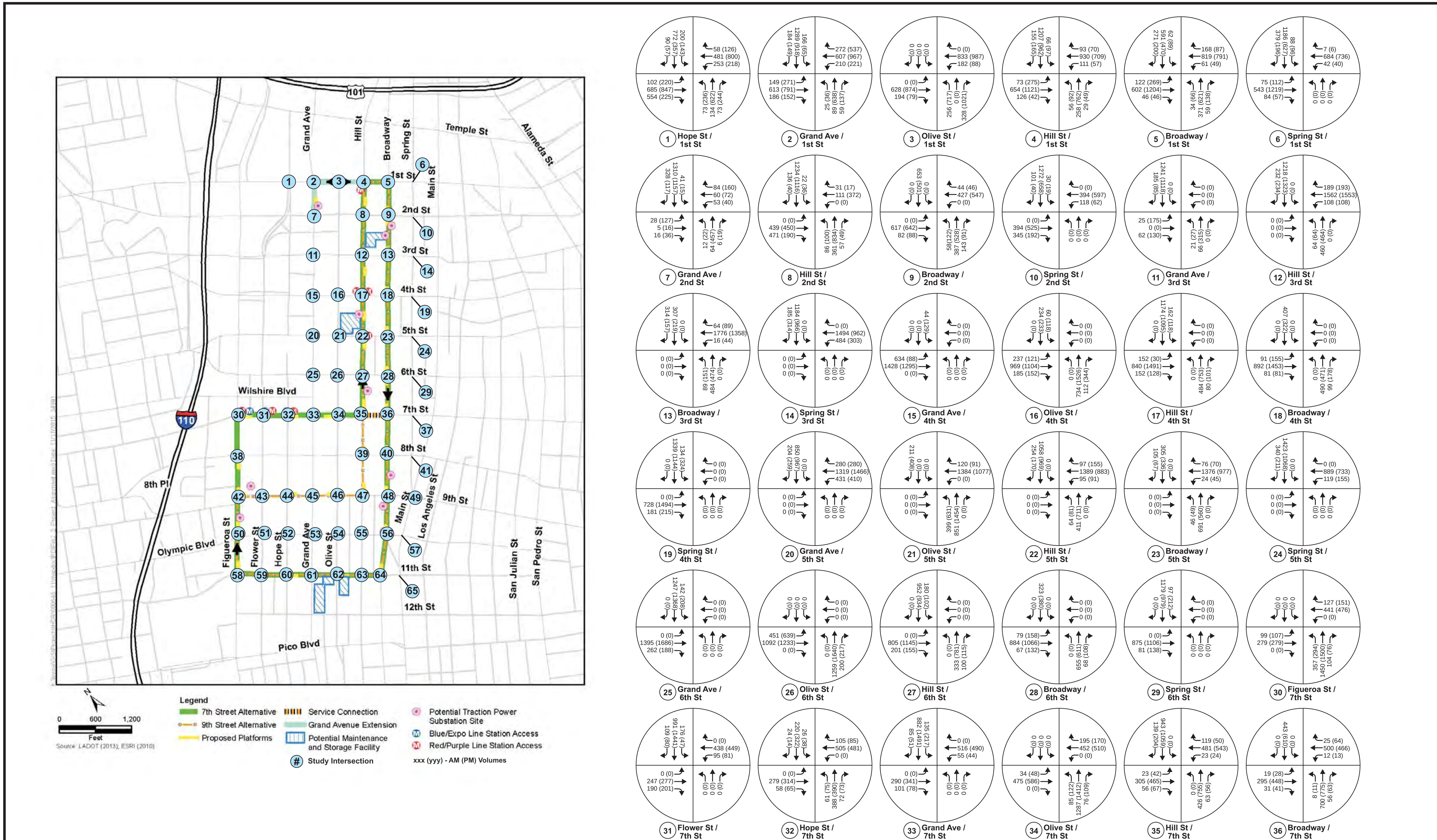
[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-24

4.2.3 Horizon Year (2040)

Horizon Year (2040) Without Project

To determine the Horizon Year (2040) without Project traffic volumes, two primary elements that contribute to traffic growth over the years were considered: an ambient traffic growth rate, and traffic due to other known programmed or planned future (related) development projects (as detailed in Section 2.3.6). The resulting traffic volumes are illustrated in **Figure 4-10.**

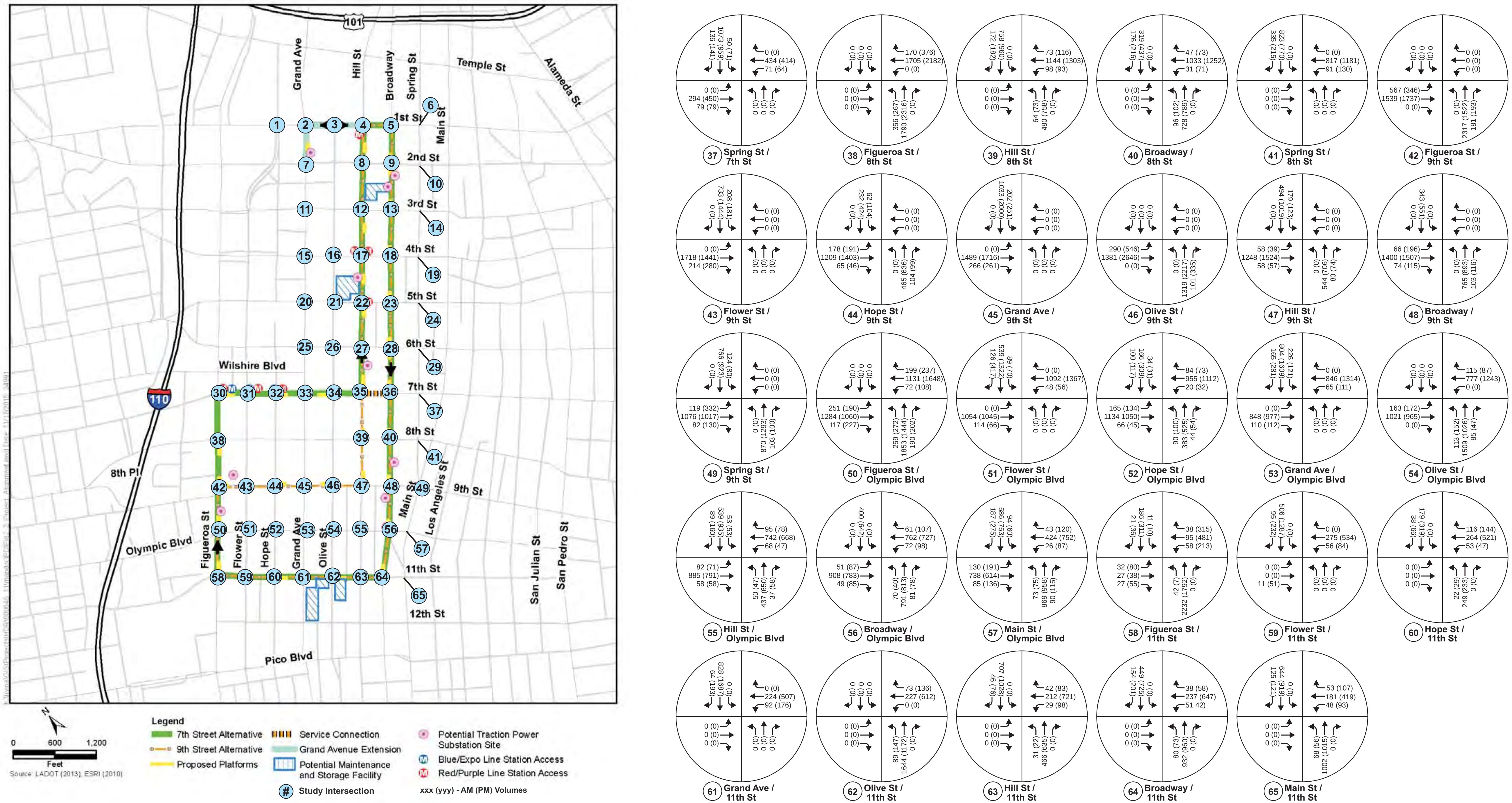
The Horizon Year (2040) without Project scenario, which is also referred to as the No Project Alternative, was analyzed with the assumption that the roadway projects listed in Section 3.2.2 would be in place by year 2040, and the resulting traffic operating conditions and corresponding LOS are provided in **Table 4-26** and also included in **Appendix I**. The intersection analysis showed that 16 of the 65 locations operate at LOS E or F. The remaining 49 intersections operate at LOS D or better during both AM and PM peak hours.



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-10: Horizon Year (2040) Without Project AM/PM Peak Hour Traffic Volumes



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-10: Horizon Year (2040) Without Project AM/PM Peak Hour Traffic Volumes (continued)

Table 4-26: Horizon Year (2040) Without Project Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	64.0	E	47.9	D
2	Grand Avenue / 1st Street	79.8	E	44.7	D
3	Olive Street / 1st Street	18.0	B	35.9	D
4	Hill Street / 1st Street	38.4	D	37.7	D
5	Broadway / 1st Street	25.1	C	25.4	C
6	Spring Street / 1st Street	21.4	C	22.3	C
7	Grand Avenue / 2nd Street	29.1	C	45.6	D
8	Hill Street / 2nd Street	24.6	C	38.0	D
9	Broadway / 2nd Street	79.3	E	43.9	D
10	Spring Street / 2nd Street	19.5	B	23.1	C
11	Grand Avenue / 3rd Street	3.4	A	19.5	B
12	Hill Street / 3rd Street	79.1	E	85.6	F
13	Broadway / 3rd Street	157.4	F	26.9	C
14	Spring Street / 3rd Street	59.1	E	30.0	C
15	Grand Avenue / 4th Street	4.3	A	5.4	A
16	Olive Street / 4th Street	21.2	C	42.8	D
17	Hill Street / 4th Street	20.2	C	12.0	B
18	Broadway / 4th Street	23.3	C	15.3	B
19	Spring Street / 4th Street	26.8	C	23.0	C
20	Grand Avenue / 5th Street	17.1	B	33.9	C
21	Olive Street / 5th Street	52.8	D	41.1	D
22	Hill Street / 5th Street	9.8	A	23.0	C
23	Broadway / 5th Street	9.7	A	17.5	B
24	Spring Street / 5th Street	17.7	B	13.5	B
25	Grand Avenue / 6th Street	20.9	C	22.9	C
26	Olive Street / 6th Street	15.8	B	17.6	B
27	Hill Street / 6th Street	9.4	A	8.7	A
28	Broadway / 6th Street	17.8	B	15.6	B
29	Spring Street / 6th Street	10.4	B	12.6	B
30	Figueroa Street / 7th Street	183.9	F	115.0	F
31	Flower Street / 7th Street	20.1	C	18.9	B
32	Hope Street / 7th Street	11.8	B	16.9	B
33	Grand Avenue / 7th Street	19.9	B	75.4	E
34	Olive Street / 7th Street	19.0	B	22.4	C
35	Hill Street / 7th Street	19.8	B	46.0	D
36	Broadway / 7th Street	14.5	B	22.1	C
37	Spring Street / 7th Street	8.3	A	31.4	C
38	Figueroa Street / 8th Street	56.4	E	184.9	F
39	Hill Street / 8th Street	9.7	A	32.1	C
40	Broadway / 8th Street	20.4	C	45.6	D

Table 4-26: Horizon Year (2040) Without Project Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	9.7	A	24.4	C
42	Figueroa Street / 9th Street	179.1	F	59.4	E
43	Flower Street / 9th Street	33.3	C	28.2	C
44	Hope Street / 9th Street	15.2	B	27.0	C
45	Grand Avenue / 9th Street	17.4	B	33.4	C
46	Olive Street / 9th Street	47.9	D	278.6	F
47	Hill Street / 9th Street	23.8	C	45.7	D
48	Broadway / 9th Street	9.4	A	18.3	B
49	Spring Street / 9th Street	14.7	B	33.9	C
50	Figueroa Street / Olympic Boulevard	143.5	F	111.1	F
51	Flower Street / Olympic Boulevard	21.9	C	32.1	C
52	Hope Street / Olympic Boulevard	32.2	C	35.3	D
53	Grand Avenue / Olympic Boulevard	18.0	B	34.8	C
54	Olive Street / Olympic Boulevard	24.2	C	52.4	D
55	Hill Street / Olympic Boulevard	18.9	B	30.7	C
56	Broadway / Olympic Boulevard	24.1	C	29.8	C
57	Main Street / Olympic Boulevard	38.9	D	65.3	E
58	Figueroa Street / 11th Street	185.3	F	105.1	F
59	Flower Street / 11th Street	17.8	B	39.8	D
60	Hope Street / 11th Street	21.6	C	46.6	D
61	Grand Avenue / 11th Street	10.6	B	20.0	B
62	Olive Street / 11th Street	20.5	C	23.6	C
63	Hill Street / 11th Street	8.3	A	55.4	E
64	Broadway / 11th Street	23.5	C	93.8	F
65	Main Street / 11th Street	12.3	B	15.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension

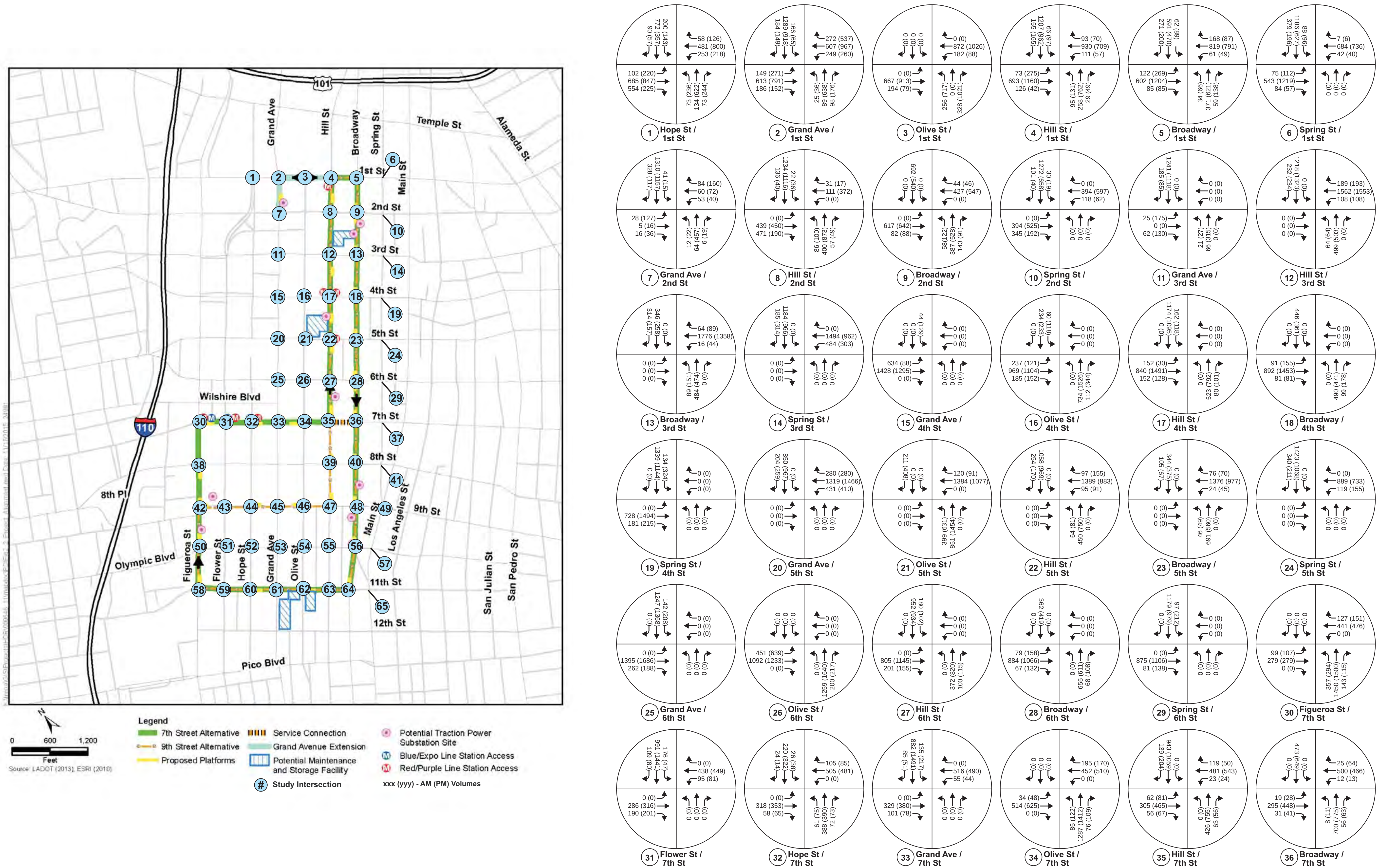
This scenario consists of adding the 7th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Horizon Year (2040) without Project AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes at the study intersections are illustrated in **Figure 4-11.**

The intersection traffic analysis was completed, and the corresponding LOS are provided in **Table 4-27** and also included in **Appendix J**. The intersection analysis showed that 16 of the 65 locations operate at LOS E or F. The remaining 49 intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that 14 of the 16 locations operating at LOS E or F are the same as those identified in the Horizon Year (2040) without Project level of service analysis. The intersections of Hill Street and 1st Street and Hill Street and 7th Street are the additional locations compared to the without Project condition.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 7th Street Alternative with the Grand Avenue were compared with the Horizon Year (2040) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-28** and **Table 4-29**, three intersections are anticipated to be significantly impacted by this alternative. The three significantly impacted intersection locations are as follows:

- Grand Avenue and 1st Street
- Hill Street and 1st Street
- Hill Street and 7th Street

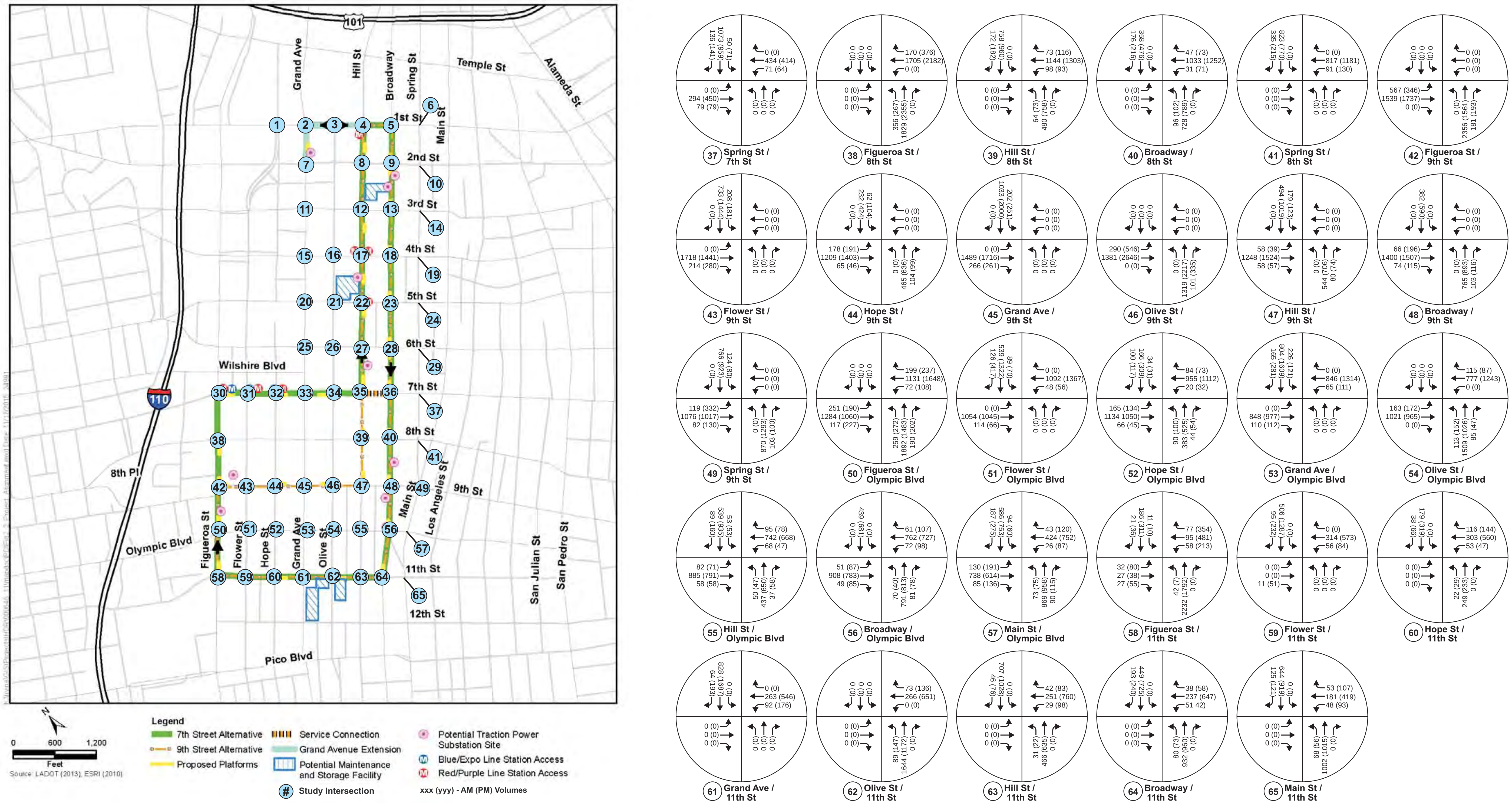
As described in the project description, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-11: Horizon Year (2040) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-11: Horizon Year (2040) - 7th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes (continued)

Table 4-27: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	64.0	E	48.1	D
2	Grand Avenue / 1st Street	80.2	F	73.6	E
3	Olive Street / 1st Street	15.9	B	32.6	C
4	Hill Street / 1st Street	59.1	E	56.9	E
5	Broadway / 1st Street	25.0	C	24.7	C
6	Spring Street / 1st Street	20.6	C	22.4	C
7	Grand Avenue / 2nd Street	29.1	C	36.4	D
8	Hill Street / 2nd Street	30.5	C	32.2	C
9	Broadway / 2nd Street	74.0	E	41.4	D
10	Spring Street / 2nd Street	18.7	B	22.8	C
11	Grand Avenue / 3rd Street	3.4	A	18.2	B
12	Hill Street / 3rd Street	78.5	E	84.7	F
13	Broadway / 3rd Street	156.3	F	26.3	C
14	Spring Street / 3rd Street	59.1	E	30.0	C
15	Grand Avenue / 4th Street	4.3	A	5.4	A
16	Olive Street / 4th Street	21.2	C	42.8	D
17	Hill Street / 4th Street	20.6	C	12.8	B
18	Broadway / 4th Street	24.6	C	15.9	B
19	Spring Street / 4th Street	26.8	C	23.0	C
20	Grand Avenue / 5th Street	17.2	B	33.8	C
21	Olive Street / 5th Street	53.2	D	41.7	D
22	Hill Street / 5th Street	9.9	A	16.9	B
23	Broadway / 5th Street	10.6	B	18.0	B
24	Spring Street / 5th Street	17.7	B	13.5	B
25	Grand Avenue / 6th Street	21.0	C	22.9	C
26	Olive Street / 6th Street	17.4	B	17.6	B
27	Hill Street / 6th Street	8.5	A	6.3	A
28	Broadway / 6th Street	17.0	B	16.2	B
29	Spring Street / 6th Street	10.5	B	12.5	B
30	Figueroa Street / 7th Street	181.9	F	113.9	F
31	Flower Street / 7th Street	20.2	C	19.0	B
32	Hope Street / 7th Street	12.0	B	16.7	B
33	Grand Avenue / 7th Street	19.9	B	74.8	E
34	Olive Street / 7th Street	17.8	B	22.3	C
35	Hill Street / 7th Street	63.3	E	51.1	D
36	Broadway / 7th Street	17.2	B	26.4	C
37	Spring Street / 7th Street	8.3	A	31.3	C
38	Figueroa Street / 8th Street	55.5	E	144.7	F
39	Hill Street / 8th Street	6.3	A	29.4	C
40	Broadway / 8th Street	19.2	B	47.4	D

Table 4-27: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	9.7	A	24.4	C
42	Figueroa Street / 9th Street	160.2	F	45.6	D
43	Flower Street / 9th Street	33.1	C	28.4	C
44	Hope Street / 9th Street	15.2	B	27.0	C
45	Grand Avenue / 9th Street	17.4	B	33.4	C
46	Olive Street / 9th Street	47.9	D	278.6	F
47	Hill Street / 9th Street	26.1	C	45.6	D
48	Broadway / 9th Street	9.0	A	19.0	B
49	Spring Street / 9th Street	14.7	B	33.9	C
50	Figueroa Street / Olympic Boulevard	133.6	F	106.5	F
51	Flower Street / Olympic Boulevard	21.9	C	32.1	C
52	Hope Street / Olympic Boulevard	32.2	C	35.3	D
53	Grand Avenue / Olympic Boulevard	18.0	B	34.8	C
54	Olive Street / Olympic Boulevard	24.2	C	52.5	D
55	Hill Street / Olympic Boulevard	19.0	B	29.3	C
56	Broadway / Olympic Boulevard	24.9	C	33.4	C
57	Main Street / Olympic Boulevard	38.9	D	65.3	E
58	Figueroa Street / 11th Street	186.5	F	104.7	F
59	Flower Street / 11th Street	18.1	B	41.5	D
60	Hope Street / 11th Street	24.4	C	29.8	C
61	Grand Avenue / 11th Street	10.5	B	20.5	C
62	Olive Street / 11th Street	20.9	C	29.1	C
63	Hill Street / 11th Street	9.6	A	47.3	D
64	Broadway / 11th Street	19.4	B	45.1	D
65	Main Street / 11th Street	12.3	B	15.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-28: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	80.2	F	0.4	NO
3	Olive Street / 1st Street	18.0	B	15.9	B	-2.1	NO
4	Hill Street / 1st Street	38.4	D	59.1	E	20.7	YES
5	Broadway / 1st Street	25.1	C	25.0	C	-0.1	NO
6	Spring Street / 1st Street	21.4	C	20.6	C	-0.8	NO
7	Grand Avenue / 2nd Street	29.1	C	29.1	C	0.0	NO
8	Hill Street / 2nd Street	24.6	C	30.5	C	5.9	NO
9	Broadway / 2nd Street	79.3	E	74.0	E	-5.3	NO
10	Spring Street / 2nd Street	19.5	B	18.7	B	-0.8	NO
11	Grand Avenue / 3rd Street	3.4	A	3.4	A	0.0	NO
12	Hill Street / 3rd Street	79.1	E	78.5	E	-0.6	NO
13	Broadway / 3rd Street	157.4	F	156.3	F	-1.1	NO
14	Spring Street / 3rd Street	59.1	E	59.1	E	0.0	NO
15	Grand Avenue / 4th Street	4.3	A	4.3	A	0.0	NO
16	Olive Street / 4th Street	21.2	C	21.2	C	0.0	NO
17	Hill Street / 4th Street	20.2	C	20.6	C	0.4	NO
18	Broadway / 4th Street	23.3	C	24.6	C	1.3	NO
19	Spring Street / 4th Street	26.8	C	26.8	C	0.0	NO
20	Grand Avenue / 5th Street	17.1	B	17.2	B	0.1	NO
21	Olive Street / 5th Street	52.8	D	53.2	D	0.4	NO
22	Hill Street / 5th Street	9.8	A	9.9	A	0.1	NO
23	Broadway / 5th Street	9.7	A	10.6	B	0.9	NO
24	Spring Street / 5th Street	17.7	B	17.7	B	0.0	NO
25	Grand Avenue / 6th Street	20.9	C	21.0	C	0.1	NO
26	Olive Street / 6th Street	15.8	B	17.4	B	1.6	NO
27	Hill Street / 6th Street	9.4	A	8.5	A	-0.9	NO
28	Broadway / 6th Street	17.8	B	17.0	B	-0.8	NO
29	Spring Street / 6th Street	10.4	B	10.5	B	0.1	NO
30	Figueroa Street / 7th Street	183.9	F	181.9	F	-2.0	NO
31	Flower Street / 7th Street	20.1	C	20.2	C	0.1	NO
32	Hope Street / 7th Street	11.8	B	12.0	B	0.2	NO
33	Grand Avenue / 7th Street	19.9	B	19.9	B	0.0	NO
34	Olive Street / 7th Street	19.0	B	17.8	B	-1.2	NO
35	Hill Street / 7th Street	19.8	B	63.3	E	43.5	YES
36	Broadway / 7th Street	14.5	B	17.2	B	2.7	NO
37	Spring Street / 7th Street	8.3	A	8.3	A	0.0	NO

Table 4-28: AM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	56.4	E	55.5	E	-0.9	NO
39	Hill Street / 8th Street	9.7	A	6.3	A	-3.4	NO
40	Broadway / 8th Street	20.4	C	19.2	B	-1.2	NO
41	Spring Street / 8th Street	9.7	A	9.7	A	0.0	NO
42	Figueroa Street / 9th Street	179.1	F	160.2	F	-18.9	NO
43	Flower Street / 9th Street	33.3	C	33.1	C	-0.2	NO
44	Hope Street / 9th Street	15.2	B	15.2	B	0.0	NO
45	Grand Avenue / 9th Street	17.4	B	17.4	B	0.0	NO
46	Olive Street / 9th Street	47.9	D	47.9	D	0.0	NO
47	Hill Street / 9th Street	23.8	C	26.1	C	2.3	NO
48	Broadway / 9th Street	9.4	A	9.0	A	-0.4	NO
49	Spring Street / 9th Street	14.7	B	14.7	B	0.0	NO
50	Figueroa Street / Olympic Boulevard	143.5	F	133.6	F	-9.9	NO
51	Flower Street / Olympic Boulevard	21.9	C	21.9	C	0.0	NO
52	Hope Street / Olympic Boulevard	32.2	C	32.2	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	18.0	B	18.0	B	0.0	NO
54	Olive Street / Olympic Boulevard	24.2	C	24.2	C	0.0	NO
55	Hill Street / Olympic Boulevard	18.9	B	19.0	B	0.1	NO
56	Broadway / Olympic Boulevard	24.1	C	24.9	C	0.8	NO
57	Main Street / Olympic Boulevard	38.9	D	38.9	D	0.0	NO
58	Figueroa Street / 11th Street	185.3	F	186.5	F	1.2	NO
59	Flower Street / 11th Street	17.8	B	18.1	B	0.3	NO
60	Hope Street / 11th Street	21.6	C	24.4	C	2.8	NO
61	Grand Avenue / 11th Street	10.6	B	10.5	B	-0.1	NO
62	Olive Street / 11th Street	20.5	C	20.9	C	0.4	NO
63	Hill Street / 11th Street	8.3	A	9.6	A	1.3	NO
64	Broadway / 11th Street	23.5	C	19.4	B	-4.1	NO
65	Main Street / 11th Street	12.3	B	12.3	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-29: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	47.9	D	48.1	D	0.2	NO
2	Grand Avenue / 1st Street	44.7	D	73.6	E	28.9	YES
3	Olive Street / 1st Street	35.9	D	32.6	C	-3.3	NO
4	Hill Street / 1st Street	37.7	D	56.9	E	19.2	YES
5	Broadway / 1st Street	25.4	C	24.7	C	-0.7	NO
6	Spring Street / 1st Street	22.3	C	22.4	C	0.1	NO
7	Grand Avenue / 2nd Street	45.6	D	36.4	D	-9.2	NO
8	Hill Street / 2nd Street	38.0	D	32.2	C	-5.8	NO
9	Broadway / 2nd Street	43.9	D	41.4	D	-2.5	NO
10	Spring Street / 2nd Street	23.1	C	22.8	C	-0.3	NO
11	Grand Avenue / 3rd Street	19.5	B	18.2	B	-1.3	NO
12	Hill Street / 3rd Street	85.6	F	84.7	F	-0.9	NO
13	Broadway / 3rd Street	26.9	C	26.3	C	-0.6	NO
14	Spring Street / 3rd Street	30.0	C	30.0	C	0.0	NO
15	Grand Avenue / 4th Street	5.4	A	5.4	A	0.0	NO
16	Olive Street / 4th Street	42.8	D	42.8	D	0.0	NO
17	Hill Street / 4th Street	12.0	B	12.8	B	0.8	NO
18	Broadway / 4th Street	15.3	B	15.9	B	0.6	NO
19	Spring Street / 4th Street	23.0	C	23.0	C	0.0	NO
20	Grand Avenue / 5th Street	33.9	C	33.8	C	-0.1	NO
21	Olive Street / 5th Street	41.1	D	41.7	D	0.6	NO
22	Hill Street / 5th Street	23.0	C	16.9	B	-6.1	NO
23	Broadway / 5th Street	17.5	B	18.0	B	0.5	NO
24	Spring Street / 5th Street	13.5	B	13.5	B	0.0	NO
25	Grand Avenue / 6th Street	22.9	C	22.9	C	0.0	NO
26	Olive Street / 6th Street	17.6	B	17.6	B	0.0	NO
27	Hill Street / 6th Street	8.7	A	6.3	A	-2.4	NO
28	Broadway / 6th Street	15.6	B	16.2	B	0.6	NO
29	Spring Street / 6th Street	12.6	B	12.5	B	-0.1	NO
30	Figueroa Street / 7th Street	115.0	F	113.9	F	-1.1	NO
31	Flower Street / 7th Street	18.9	B	19.0	B	0.1	NO
32	Hope Street / 7th Street	16.9	B	16.7	B	-0.2	NO
33	Grand Avenue / 7th Street	75.4	E	74.8	E	-0.6	NO
34	Olive Street / 7th Street	22.4	C	22.3	C	-0.1	NO
35	Hill Street / 7th Street	46.0	D	51.1	D	5.1	YES
36	Broadway / 7th Street	22.1	C	26.4	C	4.3	NO
37	Spring Street / 7th Street	31.4	C	31.3	C	-0.1	NO

Table 4-29: PM Peak Hour – 7th Street Alternative With Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	184.9	F	144.7	F	-40.2	NO
39	Hill Street / 8th Street	32.1	C	29.4	C	-2.7	NO
40	Broadway / 8th Street	45.6	D	47.4	D	1.8	NO
41	Spring Street / 8th Street	24.4	C	24.4	C	0.0	NO
42	Figueroa Street / 9th Street	59.4	E	45.6	D	-13.8	NO
43	Flower Street / 9th Street	28.2	C	28.4	C	0.2	NO
44	Hope Street / 9th Street	27.0	C	27.0	C	0.0	NO
45	Grand Avenue / 9th Street	33.4	C	33.4	C	0.0	NO
46	Olive Street / 9th Street	278.6	F	278.6	F	0.0	NO
47	Hill Street / 9th Street	45.7	D	45.6	D	-0.1	NO
48	Broadway / 9th Street	18.3	B	19.0	B	0.7	NO
49	Spring Street / 9th Street	33.9	C	33.9	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	111.1	F	106.5	F	-4.6	NO
51	Flower Street / Olympic Boulevard	32.1	C	32.1	C	0.0	NO
52	Hope Street / Olympic Boulevard	35.3	D	35.3	D	0.0	NO
53	Grand Avenue / Olympic Boulevard	34.8	C	34.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	52.4	D	52.5	D	0.1	NO
55	Hill Street / Olympic Boulevard	30.7	C	29.3	C	-1.4	NO
56	Broadway / Olympic Boulevard	29.8	C	33.4	C	3.6	NO
57	Main Street / Olympic Boulevard	65.3	E	65.3	E	0.0	NO
58	Figueroa Street / 11th Street	105.1	F	104.7	F	-0.4	NO
59	Flower Street / 11th Street	39.8	D	41.5	D	1.7	NO
60	Hope Street / 11th Street	46.6	D	29.8	C	-16.8	NO
61	Grand Avenue / 11th Street	20.0	B	20.5	C	0.5	NO
62	Olive Street / 11th Street	23.6	C	29.1	C	5.5	NO
63	Hill Street / 11th Street	55.4	E	47.3	D	-8.1	NO
64	Broadway / 11th Street	93.8	F	45.1	D	-48.7	NO
65	Main Street / 11th Street	15.8	B	15.8	B	0.0	NO

[1] Average vehicle delay in seconds

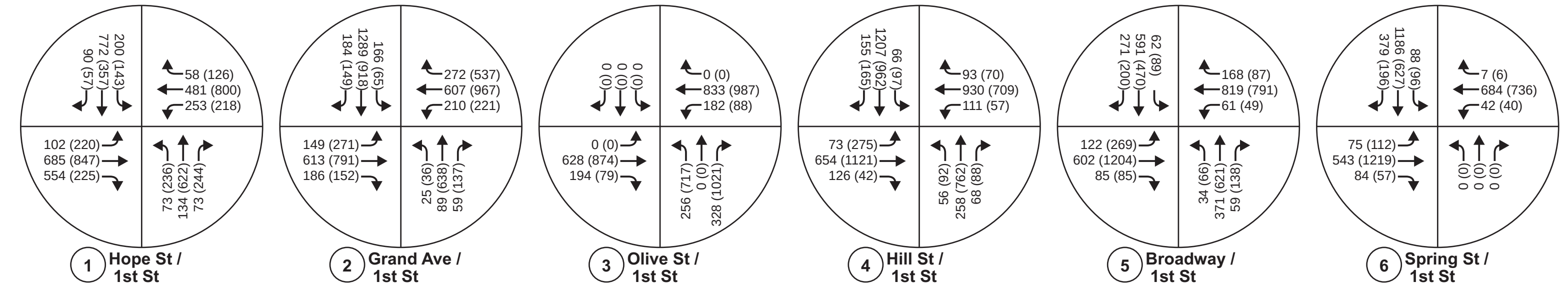
Horizon Year (2040) – 7th Street Alternative Without Grand Avenue Extension

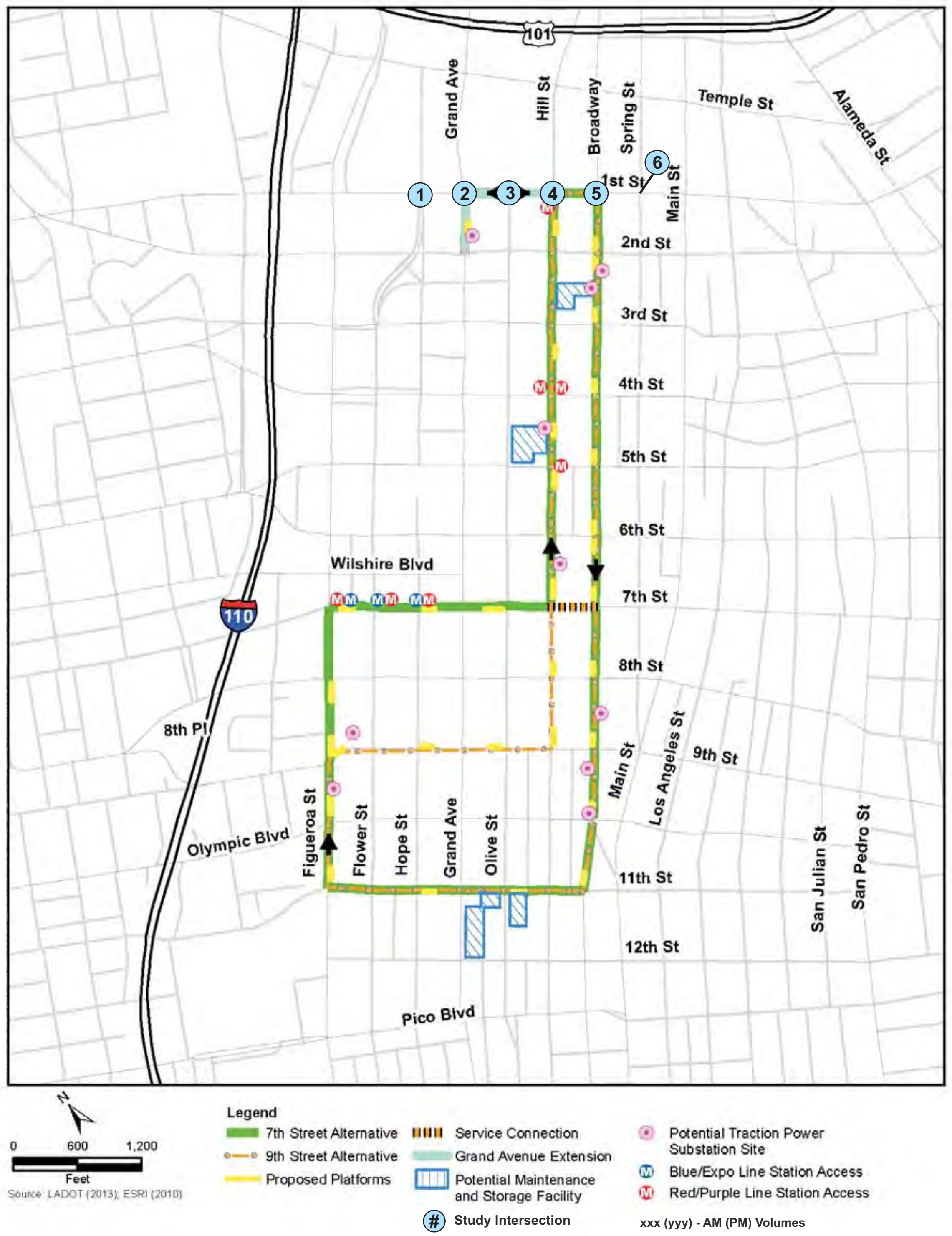
This scenario consists of adding the 7th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Horizon Year (2040) without Project AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 7th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the six affected intersection locations are illustrated in **Figure 4-12.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-11.**

The Horizon Year (2040) with the 7th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-30** and also included in **Appendix J**. The intersection analysis showed that the intersections of Hope Street and 1st Street and Grand Avenue and 1st Street operate at LOS E in the AM peak hour and LOS D in the PM peak hour. The remaining 4 intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the LOS for the intersection of Hope Street and 1st Street and Grand Avenue and 1st Street did not change and is the same as that identified in the Horizon Year (2040) without Project level of service analysis. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-27**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Opening Year (2020) to identify significantly (CEQA) affected locations. As shown in **Table 4-31** and **Table 4-32**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted.

For the remaining 59 intersections, the comparison results are the same as the 7th Street Alternative with the Grand Avenue Extension. As previously presented in **Table 4-28** and **Table 4-29**, the intersection of Hill Street and 7th Street is significantly impacted during AM and PM peak hours. This intersection is significantly impacted due to the addition of a protected signal phase for the streetcar. Although this intersection is significantly impacted per the significance thresholds, it is operating at LOS E in the AM peak hour and LOS D in the PM peak hour.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-12: Horizon Year (2040) - 7th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-30: Horizon Year (2040) – 7th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	64.0	E	47.9	D
2	Grand Avenue / 1st Street	79.8	E	44.7	D
3	Olive Street / 1st Street	18.0	B	35.9	D
4	Hill Street / 1st Street	38.6	D	38.2	D
5	Broadway / 1st Street	25.2	C	24.9	C
6	Spring Street / 1st Street	21.3	C	22.3	C

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F
Note: The LOS for the remaining intersections does not change and can be found in Table 4-29

Table 4-31: AM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	79.8	E	0.0	NO
3	Olive Street / 1st Street	18.0	B	18.0	B	0.0	NO
4	Hill Street / 1st Street	38.4	D	38.6	D	0.2	NO
5	Broadway / 1st Street	25.1	C	25.2	C	0.1	NO
6	Spring Street / 1st Street	21.4	C	21.3	C	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-30

Table 4-32: PM Peak Hour – 7th Street Alternative Without Grand Avenue Extension Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	47.9	D	47.9	D	0.0	NO
2	Grand Avenue / 1st Street	44.7	D	44.7	D	0.0	NO
3	Olive Street / 1st Street	35.9	D	35.9	D	0.0	NO
4	Hill Street / 1st Street	37.7	D	38.2	D	0.5	NO
5	Broadway / 1st Street	25.4	C	24.9	C	-0.5	NO
6	Spring Street / 1st Street	22.3	C	22.3	C	0.0	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-31

Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension

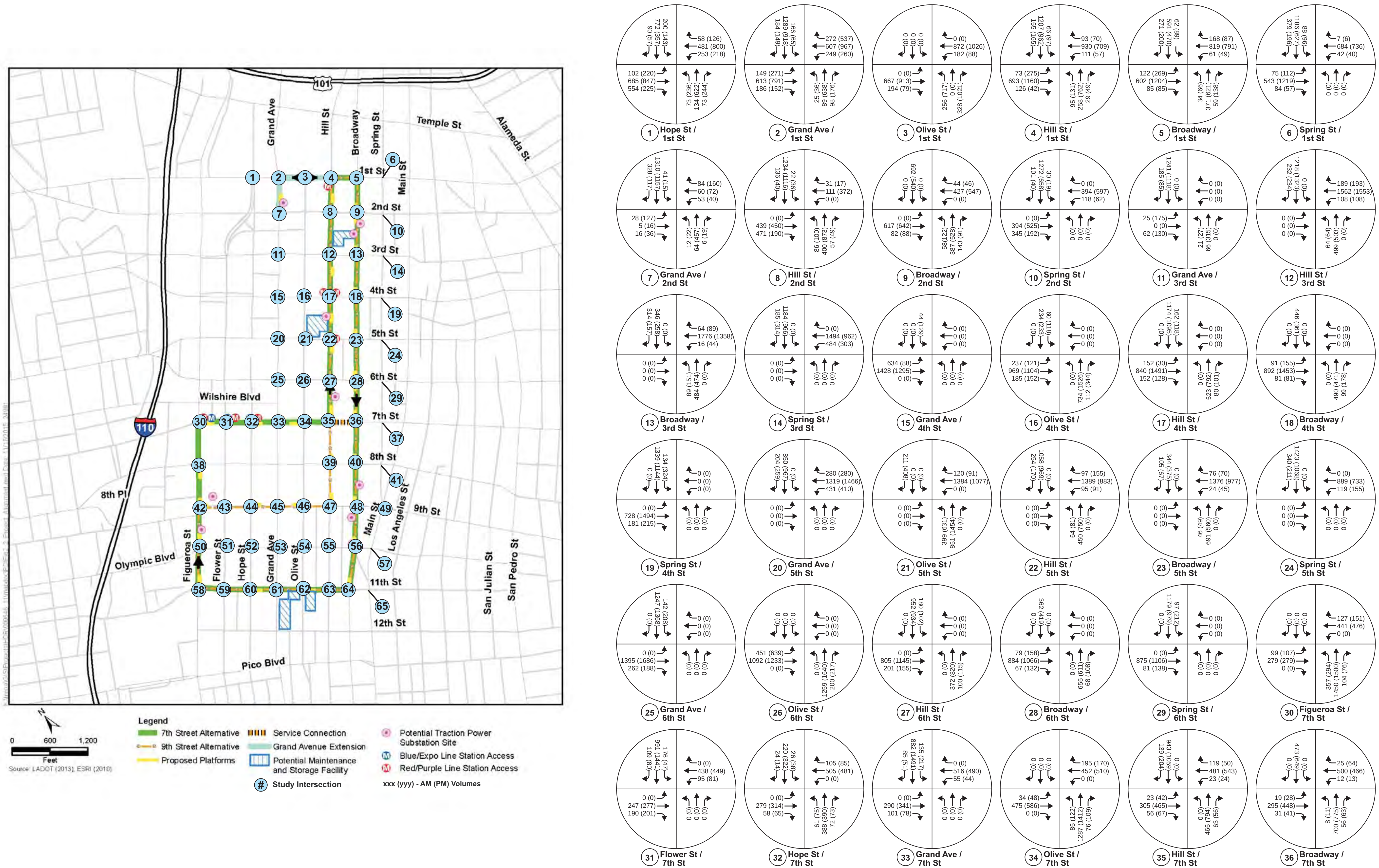
This scenario consists of adding the 9th Street Alternative with the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Horizon Year (2040) without Project AM and PM peak hour intersection and roadway operating conditions. The resulting traffic volumes at the study intersections are illustrated in **Figure 4-13.**

The intersection traffic analysis was completed, and the corresponding LOS are provided in **Table 4-33** and also included in **Appendix K**. The intersection analysis showed that 15 of the 65 locations operate at LOS E or F. The remaining 50 intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that 14 of the 15 locations operating at LOS E or F are the same as those identified in the Horizon Year (2040) without Project level of service analysis. The intersections of Hill Street and 1st Street is the additional location compared to the without Project condition.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Horizon Year (2040) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-34** and **Table 4-35**, two intersections are anticipated to be significantly impacted by this alternative. The two significantly impacted intersection locations are as follows:

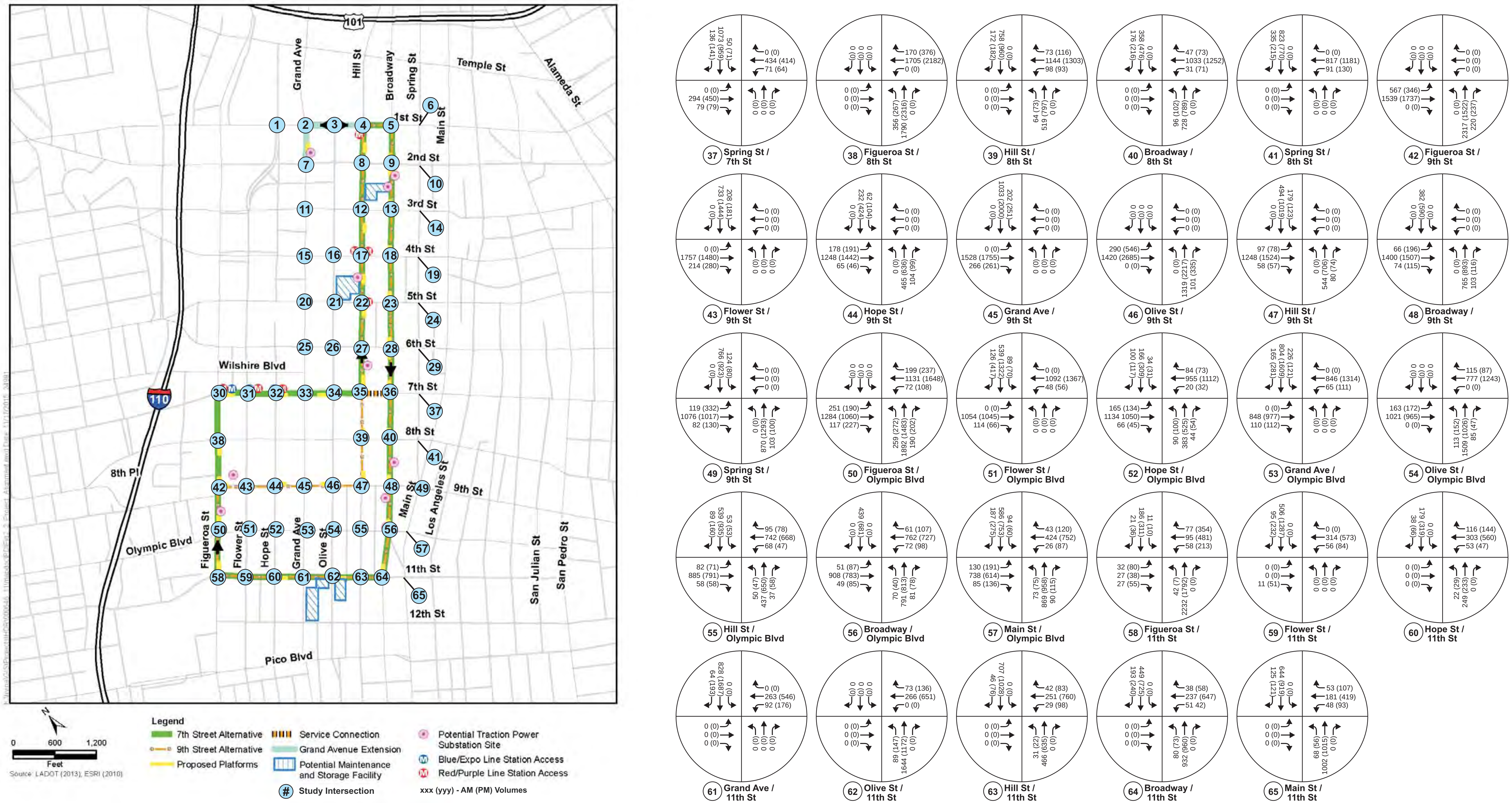
- Grand Avenue and 1st Street
- Hill Street and 1st Street

As described in the project description, the exclusive streetcar track and station platform in the median of Grand Avenue between 1st and 2nd Street shortens the length of the left turn lane from northbound Grand Avenue to westbound 1st Street and from southbound Grand Avenue to eastbound 2nd Street. The queue lengths at these two left turn pocket lanes were reviewed and it was determined that the shortened left turn lane lengths are adequate to accommodate the forecasted traffic volumes without spilling over into the adjacent through lane.



Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-13: Horizon Year (2040) - 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes



INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-13: Horizon Year (2040) - 9th Street Alternative With Grand Avenue Extension AM/PM Peak Hour Traffic Volumes (continued)

Table 4-33: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	64.0	E	48.1	D
2	Grand Avenue / 1st Street	80.2	F	73.6	E
3	Olive Street / 1st Street	15.9	B	32.6	C
4	Hill Street / 1st Street	59.1	E	56.9	E
5	Broadway / 1st Street	25.0	C	24.7	C
6	Spring Street / 1st Street	20.6	C	22.4	C
7	Grand Avenue / 2nd Street	29.1	C	36.4	D
8	Hill Street / 2nd Street	30.5	C	32.2	C
9	Broadway / 2nd Street	74.0	E	41.4	D
10	Spring Street / 2nd Street	18.7	B	22.8	C
11	Grand Avenue / 3rd Street	3.4	A	18.2	B
12	Hill Street / 3rd Street	78.5	E	84.8	F
13	Broadway / 3rd Street	156.3	F	26.3	C
14	Spring Street / 3rd Street	59.1	E	30.0	C
15	Grand Avenue / 4th Street	4.3	A	5.4	A
16	Olive Street / 4th Street	21.2	C	42.8	D
17	Hill Street / 4th Street	20.6	C	12.9	B
18	Broadway / 4th Street	24.6	C	15.9	B
19	Spring Street / 4th Street	26.8	C	23.0	C
20	Grand Avenue / 5th Street	17.1	B	33.8	C
21	Olive Street / 5th Street	52.8	D	41.7	D
22	Hill Street / 5th Street	9.9	A	17.8	B
23	Broadway / 5th Street	10.6	B	18.0	B
24	Spring Street / 5th Street	17.7	B	13.5	B
25	Grand Avenue / 6th Street	20.9	C	22.9	C
26	Olive Street / 6th Street	15.8	B	17.6	B
27	Hill Street / 6th Street	9.5	A	6.3	A
28	Broadway / 6th Street	16.9	B	16.0	B
29	Spring Street / 6th Street	10.5	B	12.5	B
30	Figueroa Street / 7th Street	183.9	F	115.0	F
31	Flower Street / 7th Street	20.1	C	18.9	B
32	Hope Street / 7th Street	11.9	B	16.1	B
33	Grand Avenue / 7th Street	19.9	B	75.4	E
34	Olive Street / 7th Street	17.3	B	26.0	C
35	Hill Street / 7th Street	19.6	B	43.4	D
36	Broadway / 7th Street	16.5	B	26.7	C
37	Spring Street / 7th Street	8.3	A	31.4	C
38	Figueroa Street / 8th Street	56.7	E	185.0	F
39	Hill Street / 8th Street	9.4	A	31.9	C
40	Broadway / 8th Street	19.3	B	47.4	D

Table 4-33: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
41	Spring Street / 8th Street	9.7	A	24.4	C
42	Figueroa Street / 9th Street	153.2	F	40.8	D
43	Flower Street / 9th Street	34.2	C	28.5	C
44	Hope Street / 9th Street	15.3	B	20.7	C
45	Grand Avenue / 9th Street	17.9	B	36.5	D
46	Olive Street / 9th Street	24.6	C	233.9	F
47	Hill Street / 9th Street	23.8	C	20.4	C
48	Broadway / 9th Street	9.1	A	19.6	B
49	Spring Street / 9th Street	14.6	B	33.9	C
50	Figueroa Street / Olympic Boulevard	133.6	F	106.5	F
51	Flower Street / Olympic Boulevard	21.9	C	32.1	C
52	Hope Street / Olympic Boulevard	32.2	C	35.3	D
53	Grand Avenue / Olympic Boulevard	18.0	B	34.8	C
54	Olive Street / Olympic Boulevard	24.2	C	52.4	D
55	Hill Street / Olympic Boulevard	18.8	B	28.0	C
56	Broadway / Olympic Boulevard	25.0	C	33.4	C
57	Main Street / Olympic Boulevard	38.9	D	65.3	E
58	Figueroa Street / 11th Street	186.5	F	104.7	F
59	Flower Street / 11th Street	18.1	B	41.5	D
60	Hope Street / 11th Street	24.4	C	29.8	C
61	Grand Avenue / 11th Street	10.5	B	20.5	C
62	Olive Street / 11th Street	20.9	C	29.1	C
63	Hill Street / 11th Street	9.4	A	47.3	D
64	Broadway / 11th Street	19.4	B	45.1	D
65	Main Street / 11th Street	12.3	B	15.8	B

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F

Table 4-34: AM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	80.2	F	0.4	NO
3	Olive Street / 1st Street	18.0	B	15.9	B	-2.1	NO
4	Hill Street / 1st Street	38.4	D	59.1	E	20.7	YES
5	Broadway / 1st Street	25.1	C	25.0	C	-0.1	NO
6	Spring Street / 1st Street	21.4	C	20.6	C	-0.8	NO
7	Grand Avenue / 2nd Street	29.1	C	29.1	C	0.0	NO
8	Hill Street / 2nd Street	24.6	C	30.5	C	5.9	NO
9	Broadway / 2nd Street	79.3	E	74.0	E	-5.3	NO
10	Spring Street / 2nd Street	19.5	B	18.7	B	-0.8	NO
11	Grand Avenue / 3rd Street	3.4	A	3.4	A	0.0	NO
12	Hill Street / 3rd Street	79.1	E	78.5	E	-0.6	NO
13	Broadway / 3rd Street	157.4	F	156.3	F	-1.1	NO
14	Spring Street / 3rd Street	59.1	E	59.1	E	0.0	NO
15	Grand Avenue / 4th Street	4.3	A	4.3	A	0.0	NO
16	Olive Street / 4th Street	21.2	C	21.2	C	0.0	NO
17	Hill Street / 4th Street	20.2	C	20.6	C	0.4	NO
18	Broadway / 4th Street	23.3	C	24.6	C	1.3	NO
19	Spring Street / 4th Street	26.8	C	26.8	C	0.0	NO
20	Grand Avenue / 5th Street	17.1	B	17.1	B	0.0	NO
21	Olive Street / 5th Street	52.8	D	52.8	D	0.0	NO
22	Hill Street / 5th Street	9.8	A	9.9	A	0.1	NO
23	Broadway / 5th Street	9.7	A	10.6	B	0.9	NO
24	Spring Street / 5th Street	17.7	B	17.7	B	0.0	NO
25	Grand Avenue / 6th Street	20.9	C	20.9	C	0.0	NO
26	Olive Street / 6th Street	15.8	B	15.8	B	0.0	NO
27	Hill Street / 6th Street	9.4	A	9.5	A	0.1	NO
28	Broadway / 6th Street	17.8	B	16.9	B	-0.9	NO
29	Spring Street / 6th Street	10.4	B	10.5	B	0.1	NO
30	Figueroa Street / 7th Street	183.9	F	183.9	F	0.0	NO
31	Flower Street / 7th Street	20.1	C	20.1	C	0.0	NO
32	Hope Street / 7th Street	11.8	B	11.9	B	0.1	NO
33	Grand Avenue / 7th Street	19.9	B	19.9	B	0.0	NO
34	Olive Street / 7th Street	19.0	B	17.3	B	-1.7	NO
35	Hill Street / 7th Street	19.8	B	19.6	B	-0.2	NO
36	Broadway / 7th Street	14.5	B	16.5	B	2.0	NO
37	Spring Street / 7th Street	8.3	A	8.3	A	0.0	NO

Table 4-34: AM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	56.4	E	56.7	E	0.3	NO
39	Hill Street / 8th Street	9.7	A	9.4	A	-0.3	NO
40	Broadway / 8th Street	20.4	C	19.3	B	-1.1	NO
41	Spring Street / 8th Street	9.7	A	9.7	A	0.0	NO
42	Figueroa Street / 9th Street	179.1	F	153.2	F	-25.9	NO
43	Flower Street / 9th Street	33.3	C	34.2	C	0.9	NO
44	Hope Street / 9th Street	15.2	B	15.3	B	0.1	NO
45	Grand Avenue / 9th Street	17.4	B	17.9	B	0.5	NO
46	Olive Street / 9th Street	47.9	D	24.6	C	-23.3	NO
47	Hill Street / 9th Street	23.8	C	23.8	C	0.0	NO
48	Broadway / 9th Street	9.4	A	9.1	A	-0.3	NO
49	Spring Street / 9th Street	14.7	B	14.6	B	-0.1	NO
50	Figueroa Street / Olympic Boulevard	143.5	F	133.6	F	-9.9	NO
51	Flower Street / Olympic Boulevard	21.9	C	21.9	C	0.0	NO
52	Hope Street / Olympic Boulevard	32.2	C	32.2	C	0.0	NO
53	Grand Avenue / Olympic Boulevard	18.0	B	18.0	B	0.0	NO
54	Olive Street / Olympic Boulevard	24.2	C	24.2	C	0.0	NO
55	Hill Street / Olympic Boulevard	18.9	B	18.8	B	-0.1	NO
56	Broadway / Olympic Boulevard	24.1	C	25.0	C	0.9	NO
57	Main Street / Olympic Boulevard	38.9	D	38.9	D	0.0	NO
58	Figueroa Street / 11th Street	185.3	F	186.5	F	1.2	NO
59	Flower Street / 11th Street	17.8	B	18.1	B	0.3	NO
60	Hope Street / 11th Street	21.6	C	24.4	C	2.8	NO
61	Grand Avenue / 11th Street	10.6	B	10.5	B	-0.1	NO
62	Olive Street / 11th Street	20.5	C	20.9	C	0.4	NO
63	Hill Street / 11th Street	8.3	A	9.4	A	1.1	NO
64	Broadway / 11th Street	23.5	C	19.4	B	-4.1	NO
65	Main Street / 11th Street	12.3	B	12.3	B	0.0	NO

[1] Average vehicle delay in seconds

Table 4-35: PM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	47.9	D	48.1	D	0.2	NO
2	Grand Avenue / 1st Street	44.7	D	73.6	E	28.9	YES
3	Olive Street / 1st Street	35.9	D	32.6	C	-3.3	NO
4	Hill Street / 1st Street	37.7	D	56.9	E	19.2	YES
5	Broadway / 1st Street	25.4	C	24.7	C	-0.7	NO
6	Spring Street / 1st Street	22.3	C	22.4	C	0.1	NO
7	Grand Avenue / 2nd Street	45.6	D	36.4	D	-9.2	NO
8	Hill Street / 2nd Street	38.0	D	32.2	C	-5.8	NO
9	Broadway / 2nd Street	43.9	D	41.4	D	-2.5	NO
10	Spring Street / 2nd Street	23.1	C	22.8	C	-0.3	NO
11	Grand Avenue / 3rd Street	19.5	B	18.2	B	-1.3	NO
12	Hill Street / 3rd Street	85.6	F	84.8	F	-0.8	NO
13	Broadway / 3rd Street	26.9	C	26.3	C	-0.6	NO
14	Spring Street / 3rd Street	30.0	C	30.0	C	0.0	NO
15	Grand Avenue / 4th Street	5.4	A	5.4	A	0.0	NO
16	Olive Street / 4th Street	42.8	D	42.8	D	0.0	NO
17	Hill Street / 4th Street	12.0	B	12.9	B	0.9	NO
18	Broadway / 4th Street	15.3	B	15.9	B	0.6	NO
19	Spring Street / 4th Street	23.0	C	23.0	C	0.0	NO
20	Grand Avenue / 5th Street	33.9	C	33.8	C	-0.1	NO
21	Olive Street / 5th Street	41.1	D	41.7	D	0.6	NO
22	Hill Street / 5th Street	23.0	C	17.8	B	-5.2	NO
23	Broadway / 5th Street	17.5	B	18.0	B	0.5	NO
24	Spring Street / 5th Street	13.5	B	13.5	B	0.0	NO
25	Grand Avenue / 6th Street	22.9	C	22.9	C	0.0	NO
26	Olive Street / 6th Street	17.6	B	17.6	B	0.0	NO
27	Hill Street / 6th Street	8.7	A	6.3	A	-2.4	NO
28	Broadway / 6th Street	15.6	B	16.0	B	0.4	NO
29	Spring Street / 6th Street	12.6	B	12.5	B	-0.1	NO
30	Figueroa Street / 7th Street	115.0	F	115.0	F	0.0	NO
31	Flower Street / 7th Street	18.9	B	18.9	B	0.0	NO
32	Hope Street / 7th Street	16.9	B	16.1	B	-0.8	NO
33	Grand Avenue / 7th Street	75.4	E	75.4	E	0.0	NO
34	Olive Street / 7th Street	22.4	C	26.0	C	3.6	NO
35	Hill Street / 7th Street	46.0	D	43.4	D	-2.6	NO
36	Broadway / 7th Street	22.1	C	26.7	C	4.6	NO
37	Spring Street / 7th Street	31.4	C	31.4	C	0.0	NO

Table 4-35: PM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
38	Figueroa Street / 8th Street	184.9	F	185.0	F	0.1	NO
39	Hill Street / 8th Street	32.1	C	31.9	C	-0.2	NO
40	Broadway / 8th Street	45.6	D	47.4	D	1.8	NO
41	Spring Street / 8th Street	24.4	C	24.4	C	0.0	NO
42	Figueroa Street / 9th Street	59.4	E	40.8	D	-18.6	NO
43	Flower Street / 9th Street	28.2	C	28.5	C	0.3	NO
44	Hope Street / 9th Street	27.0	C	20.7	C	-6.3	NO
45	Grand Avenue / 9th Street	33.4	C	36.5	D	3.1	NO
46	Olive Street / 9th Street	278.6	F	233.9	F	-44.7	NO
47	Hill Street / 9th Street	45.7	D	20.4	C	-25.3	NO
48	Broadway / 9th Street	18.3	B	19.6	B	1.3	NO
49	Spring Street / 9th Street	33.9	C	33.9	C	0.0	NO
50	Figueroa Street / Olympic Boulevard	111.1	F	106.5	F	-4.6	NO
51	Flower Street / Olympic Boulevard	32.1	C	32.1	C	0.0	NO
52	Hope Street / Olympic Boulevard	35.3	D	35.3	D	0.0	NO
53	Grand Avenue / Olympic Boulevard	34.8	C	34.8	C	0.0	NO
54	Olive Street / Olympic Boulevard	52.4	D	52.4	D	0.0	NO
55	Hill Street / Olympic Boulevard	30.7	C	28.0	C	-2.7	NO
56	Broadway / Olympic Boulevard	29.8	C	33.4	C	3.6	NO
57	Main Street / Olympic Boulevard	65.3	E	65.3	E	0.0	NO
58	Figueroa Street / 11th Street	105.1	F	104.7	F	-0.4	NO
59	Flower Street / 11th Street	39.8	D	41.5	D	1.7	NO
60	Hope Street / 11th Street	46.6	D	29.8	C	-16.8	NO
61	Grand Avenue / 11th Street	20.0	B	20.5	C	0.5	NO
62	Olive Street / 11th Street	23.6	C	29.1	C	5.5	NO
63	Hill Street / 11th Street	55.4	E	47.3	D	-8.1	NO
64	Broadway / 11th Street	93.8	F	45.1	D	-48.7	NO
65	Main Street / 11th Street	15.8	B	15.8	B	0.0	NO

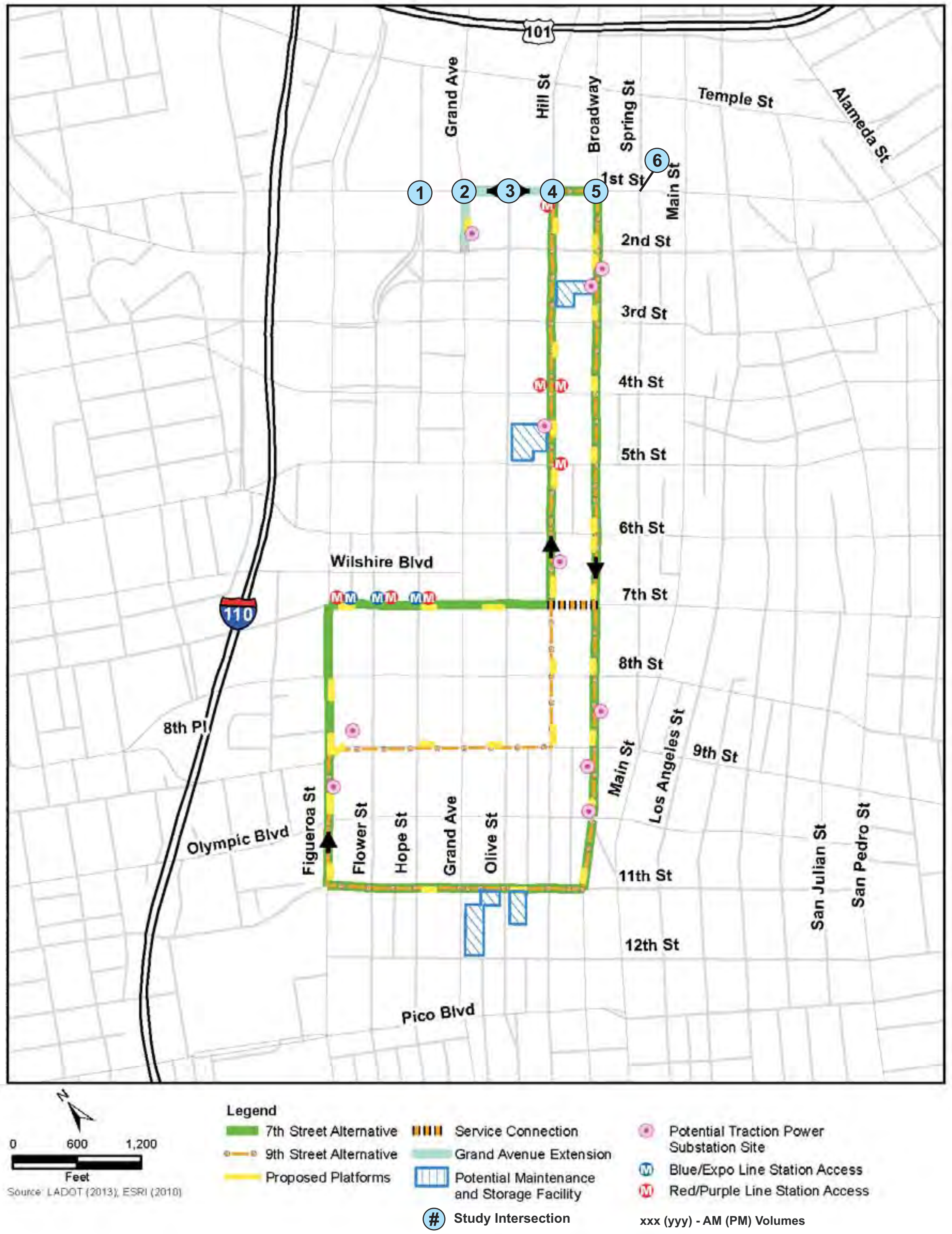
[1] Average vehicle delay in seconds

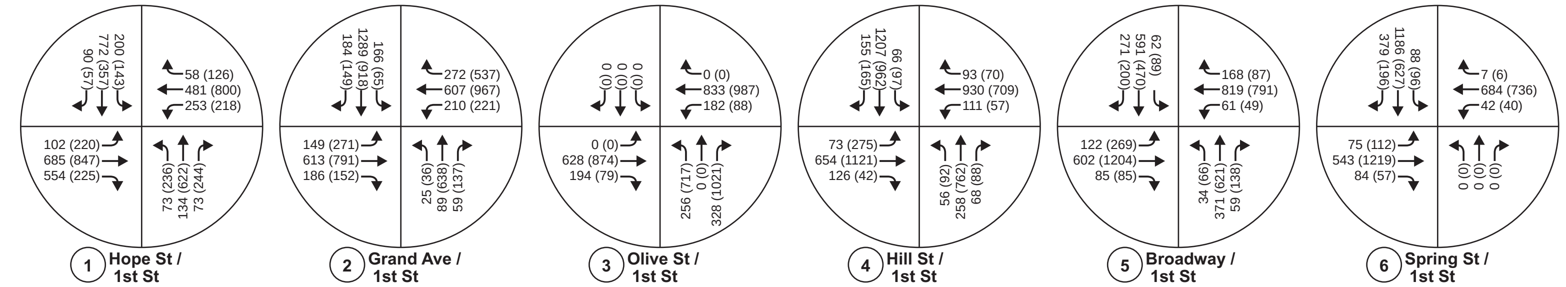
Horizon Year (2040) – 9th Street Alternative Without Grand Avenue Extension

This scenario consists of adding the 9th Street Alternative without the Grand Avenue Extension vehicular trips (as described in Section 2.3.5) to the Horizon Year (2040) without Project AM and PM peak hour intersection and roadway operating conditions. This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected. The results of the remaining intersection locations are the same as the results presented under the 9th Street Alternative with the Grand Avenue Extension. The resulting traffic volumes for the six affected intersection locations are illustrated in **Figure 4-14.** The traffic volumes for the remaining 59 intersection locations did not change and can be found in **Figure 4-13.**

The Horizon Year (2040) with the 9th Street Alternative without the Grand Avenue Extension was analyzed, and the resulting traffic operating conditions and corresponding LOS for the six affected intersection locations are provided in **Table 4-36** and also included in **Appendix K**. The intersection analysis showed that the intersections of Hope Street and 1st Street and Grand Avenue and 1st Street operate at LOS E in the AM peak hour and LOS D in the PM peak hour. The remaining four intersections operate at LOS D or better during both AM and PM peak hours. It should be noted that the LOS for the intersections of Hope Street and 1st Street and Grand Avenue and 1st Street did not change and is the same as that identified in the Horizon Year (2040) without Project level of service analysis. The LOS for the remaining 59 intersection locations did not change and is presented in **Table 4-33**.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Horizon Year (2040) to identify significantly (CEQA) affected locations. As shown in **Table 4-37** and **Table 4-38**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the comparison results are the same as the 9th Street Alternative with the Grand Avenue Extension.





INTUEOR MAXIMIZING VALUE

Restoration of Historic Streetcar Service in Downtown Los Angeles

Figure 4-14: Horizon Year (2040) - 9th Street Alternative Without Grand Avenue Extension AM/PM Peak Hour Traffic Volumes

Table 4-36: Horizon Year (2040) – 9th Street Alternative Without Grand Avenue Extension Intersection LOS Analysis[2]

#	Intersection	AM		PM	
		Delay[1]	LOS	Delay[1]	LOS
1	Hope Street / 1st Street	64.0	E	47.9	D
2	Grand Avenue / 1st Street	79.8	E	44.7	D
3	Olive Street / 1st Street	18.0	B	35.9	D
4	Hill Street / 1st Street	38.6	D	38.2	D
5	Broadway / 1st Street	25.2	C	24.9	C
6	Spring Street / 1st Street	21.3	C	22.3	C

[1] Average vehicle delay in seconds
[2] Shading shows intersections that would operate at LOS E or F
Note: The LOS for the remaining intersections does not change and can be found in Table 4-35

Table 4-37: AM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	64.0	E	64.0	E	0.0	NO
2	Grand Avenue / 1st Street	79.8	E	79.8	E	0.0	NO
3	Olive Street / 1st Street	18.0	B	18.0	B	0.0	NO
4	Hill Street / 1st Street	38.4	D	38.6	D	0.2	NO
5	Broadway / 1st Street	25.1	C	25.2	C	0.1	NO
6	Spring Street / 1st Street	21.4	C	21.3	C	-0.1	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-36

Table 4-38: PM Peak Hour – Intersection Impacts Comparison (Horizon Year (2040) With and Without Project)

#	Intersection	2040 Without Project		2040 With Project		Change in Delay	Significant Impact
		Delay[1]	LOS	Delay[1]	LOS		
1	Hope Street / 1st Street	47.9	D	47.9	D	0.0	NO
2	Grand Avenue / 1st Street	44.7	D	44.7	D	0.0	NO
3	Olive Street / 1st Street	35.9	D	35.9	D	0.0	NO
4	Hill Street / 1st Street	37.7	D	38.2	D	0.5	NO
5	Broadway / 1st Street	25.4	C	24.9	C	-0.5	NO
6	Spring Street / 1st Street	22.3	C	22.3	C	0.0	NO

[1] Average vehicle delay in seconds
Note: The intersection impacts for the remaining intersections do not change and can be found in Table 4-37

4.3 PARKING

Appendix G of the State CEQA Guidelines was recently updated to no longer require the analysis of parking as an environmental impact by a project. Nonetheless, this section provides a quantitative assessment of the potential effects of the Project on the availability of on-street parking along the build alternatives' corridors.

A parking inventory was compiled for existing conditions, future conditions, without and with the proposed Project. In general, the without Project condition will result in an increase of on-street parking and/or loading spaces due to the proposed projects that were identified in Section 2.3.6. For the proposed Project condition, a number of parking and loading spaces will be removed to accommodate the proposed station platforms and the transitioning of the streetcar tracks. However, a number of full time on-street parking spaces will be gained along Hill Street due to the proposed bump-outs that are being implemented as part of the project in order to create a location for the station areas. Based on the current station location placement, the 7th Street Alternatives would both result in an approximate loss of up to 19 on-street parking spaces and the 9th Street Alternatives would both result in an approximate loss of up to 41 on-street parking spaces. This loss, as a result of the proposed Project, is an estimate and may change once the exact station locations are defined. A block-by-block estimate of the on-street parking spaces that would be lost or gained is presented in **Table 4-39**. Since, this is a transit project that aims to support non-motorized modes of travel in the area, the Project is also consistent with LADOT's policies in developing transportation demand management (TDM) measures that reduce single occupancy vehicle (SOV) trips and encourage ridesharing and transit use.

In the assessment of off-street parking, the four potential Maintenance and Storage Facility sites were assessed as they are currently utilized as privately-operated off-street parking facilities. The first site is bound by Grand Avenue to the west, 11th Street to the north, Olive Street to the east, and 12th Street to the south. Currently, this site accommodates about 350 off-street parking spaces, however, a small portion of these parking spaces are covenanted to the Grand Lofts. Because no final designs have been produced for the MSF locations, it is unknown at this time how much of the site will be utilized and how many parking spaces will be permanently displaced due to the proposed Project. Once built, the facility would provide adequate parking spaces to accommodate its employees that are working on site per the requirements set forth in the *Los Angeles Municipal Code* (LAMC).

The second MSF site is proposed at the southeast corner of 11th and Olive Streets. Currently, this site accommodates about 140 off-street parking spaces. Some or all of these spaces would be removed if this site is selected for the MSF. It should be noted that it has not been determined if the proposed MSF footprint will be utilizing all or part of the site. Once the facility is built on the selected site, the Project would provide adequate parking spaces to accommodate its employees that are working on site.

The third MSF site is proposed along 5th Street between Olive and Hill Streets. Currently, this site accommodates about 430 off-street parking spaces. Some or all of these spaces would be removed if this site is selected for the MSF. It should be noted that it has not been determined if the proposed MSF footprint will be utilizing all or part of the site.

The fourth and final MSF site is proposed along 3rd Street between Hill Street and Broadway. Currently, this site accommodates about 240 off-street parking spaces. Some or all of these spaces would be removed if this site is selected for the MSF. It should be noted that it has not been determined if the proposed MSF footprint will be utilizing all or part of the site. Once built on the selected site, the Project would provide adequate parking spaces to accommodate its employees that are working on site.

4.4 PEDESTRIAN AND BICYCLE FACILITIES

A number of bikeway and streetscape projects are planned within the project area (detailed in Section 3.2.2) to enhance the pedestrian environment and support bicycle use. Implementation of the streetcar alignment on those streets for which bicycle facilities are either currently in place or programmed will be completed so as to accommodate those facilities. Consequently, the proposed Project is not anticipated to have any adverse impact within the project area on any of the existing or planned pedestrian and bicycle facilities. The proposed Project is expected to create a pedestrian friendly environment, support walking and transit use, and result in an increase in pedestrian traffic along the alignment streets such as Broadway, Hill Street, 11th Street and Figueroa Street. Generally, streetcar systems serve relatively short trips in dense urban corridors. Therefore, the streetcar would improve and benefit the pedestrian environment and enhance connectivity for those who walk in the downtown area. However, by 2040, increased traffic congestion and the deterioration of operating conditions (LOS) for traffic segments and intersections may result in an overall performance deterioration for bicycle and pedestrian movements at intersections located within the project study area. Consequently, the proposed Project would be designed to maximize pedestrian safety and accessibility through the implementation of measures that would minimize, if not avoid, vehicular/pedestrian and vehicular/bicycle conflicts. Design elements of the streetcar system may include but not be limited to the following: streetcars equipped with lighting, audible warning devices; train to wayside communication (TWC); signage; striping; and wayfinding. In order to provide for a safe and reliable operation, the Project will comply with but not be limited to improvement programs by LADOT, other City departments, and the applicable CPUC regulations. In summary, the project will result in no negative effects to the pedestrian environment.

Bicyclists traveling along the streetcar alignment, for the streets on which bicycle lanes are not designated, would need to be aware of potential conflicts between bicycle tires and the rail flangeway. A grooved section which includes a formed steel flangeway (groove), is the desired rail section for areas subject to bicycles and other narrow-tired vehicles. Bicycle safety will remain an important design consideration requiring further investigation in the design phase of the project. Implementation of the Project would involve the installation of a fixed guideway within the roadway, which may present hazards for cyclists traveling parallel to, or across, the railway. Although the rail itself would be vertically flush with the road surface, there would be a horizontal gap between the track and the surrounding pavement, which is known as the flangeway. The flangeway is oftentimes wider than a bicycle tire, particularly the tires of road bicycles, and tires can become wedged in the flangeway if the bicycle is traveling parallel, or close to parallel, to the flangeway. This "tire-in-track" issue is a potential hazard of the Project with respect to cyclists. In all instances in which the fixed guideway would occupy the same roadway as an existing or planned bike lane (and cyclists would be traveling parallel to the fixed guideway), designated bike lanes and the guideway would be separated. Roadways with bicycle lanes are expected to experience the highest volume of cyclists, but implementation of the Project would not prohibit cyclists from using any part of the alignment. For the roadways on which the fixed guideway and the travel lane closest to the sidewalk coincide, the potential for "tire-in-track" hazards would be greater than along the portions of the alignment with designated bicycle lanes. With the implementation of MM-TRAF-O1, which would include signage and pavement markings instructing cyclists how to cross the tracks safely, safety hazards for cyclists would be considered potentially significant.

Table 4-39: On-Street Parking for Future Conditions						
Street	**Segment**	**Direction**	**Existing Spaces[1] (Parking and Loading)**	**Future Without Project Spaces[2] (Parking and Loading)**	**Future With Project Spaces (Parking and Loading)**	**Overall Gain or Loss due to the Project**
1st Street	Grand Avenue to Olive Street	WB	0	0	0	0
1st Street	Grand Avenue to Olive Street	EB	5	5	5	0
1st Street	Olive Street to Hill Street	WB	0	0	0	0
1st Street	Olive Street to Hill Street	EB	0	0	0	0
1st Street	Hill Street to Broadway	WB	0	0	0	0
1st Street	Hill Street to Broadway	EB	0	0	0	0
Broadway	1st Street to 2nd Street	NB	5	11	11	0
Broadway	1st Street to 2nd Street	SB	0	0	0	0
Broadway	2nd Street to 3rd Street	NB	8	8	8	0
Broadway	2nd Street to 3rd Street	SB	3	21	21	0
Broadway	3rd Street to 4th Street	NB	2	16	16	0
Broadway	3rd Street to 4th Street	SB	5	15	15	0
Broadway	4th Street to 5th Street	NB	8	17	17	0
Broadway	4th Street to 5th Street	SB	13	14	14	0
Broadway	5th Street to 6th Street	NB	7	17	17	0
Broadway	5th Street to 6th Street	SB	11	14	14	0
Broadway	6th Street to 7th Street	NB	11	16	16	0
Broadway	6th Street to 7th Street	SB	3	10	10	0
Broadway	7th Street to 8th Street	NB	14	16	16	0
Broadway	7th Street to 8th Street	SB	16	16	16	0
Broadway	8th Street to 9th Street	NB	14	17	17	0
Broadway	8th Street to 9th Street	SB	0	14	14	0
Broadway	9th Street to Olympic Boulevard	NB	5	16	16	0
Broadway	9th Street to Olympic Boulevard	SB	2	13	13	0
Broadway	Olympic Boulevard to 11th Street	NB	17	10	10	0
Broadway	Olympic Boulevard to 11th Street	SB	1	2	2	0
11th Street	Broadway to Hill Street	WB	6	5	5	0
11th Street	Hill Street to Olive Street	WB	10	6	4	-2
11th Street	Olive Street to Grand Avenue	WB	13	8	8	0
11th Street	Grand Avenue to Hope Street	WB	12	9	5	-4
11th Street	Hope Street to Flower Street	WB	7	7	7	0
11th Street	Flower Street to Figueroa Street	WB	0	0	0	0
Figueroa Street	11th Street to Olympic Boulevard	NB & SB	0	0	0	0
Figueroa Street	Olympic Boulevard to 9th Street	NB	10	10	10	0
Hill Street	1st Street to 2nd Street	NB	7	7	4	-3
Hill Street	1st Street to 2nd Street	SB	0	0	0	0
Hill Street	2nd Street to 3rd Street	NB	10	10	4	-6
Hill Street	2nd Street to 3rd Street	SB	5	5	5	0
Hill Street	3rd Street to 4th Street	NB	9	9	0	-9
Hill Street	3rd Street to 4th Street	SB	6	6	6	0

Table 4-39: On-Street Parking for Future Conditions

Street	Segment	Direction	Existing Spaces[1] (Parking and Loading)	Future Without Project Spaces[2] (Parking and Loading)	Future With Project Spaces (Parking and Loading)	Overall Gain or Loss due to the Project
Hill Street	4th Street to 5th Street	NB	13	13	11	-2
Hill Street	4th Street to 5th Street	SB	3	3	3	0
Hill Street	5th Street to 6th Street	NB	0	0	10	10
Hill Street	5th Street to 6th Street	SB	0	0	0	0
Hill Street	6th Street to 7th Street	NB	12	12	9	-3
Hill Street	6th Street to 7th Street	SB	6	6	6	0
7th Street Alternative						
Figueroa Street	9th Street to 8th Street	NB	9	9	9	0
Figueroa Street	8th Street to 7th Street	NB	9	9	9	0
7th Street	Figueroa Street to Flower Street	EB	7	7	7	0
7th Street	Figueroa Street to Flower Street	WB	4	4	4	0
7th Street	Flower Street to Hope Street	EB	5	5	5	0
7th Street	Flower Street to Hope Street	WB	8	8	8	0
7th Street	Hope Street to Grand Avenue	EB	5	5	5	0
7th Street	Hope Street to Grand Avenue	WB	1	1	1	0
7th Street	Grand Avenue to Olive Street	EB	6	6	6	0
7th Street	Grand Avenue to Olive Street	WB	6	6	6	0
7th Street	Olive Street to Hill Street	EB	5	5	5	0
7th Street	Olive Street to Hill Street	WB	4	4	4	0
9th Street Alternative						
9th Street	Figueroa Street to Flower Street	EB	0	0	0	0
9th Street	Flower Street to Hope Street	EB	17	17	17	0
9th Street	Hope Street to Grand Avenue	EB	15	15	15	0
9th Street	Grand Avenue to Olive Street	EB	13	13	9	-4
9th Street	Olive Street to Hill Street	EB	18	18	16	-2
Hill Street	7th Street to 8th Street	NB	10	10	0	-10
Hill Street	7th Street to 8th Street	SB	3	3	3	0
Hill Street	8th Street to 9th Street	NB	6	6	0	-6
Hill Street	8th Street to 9th Street	SB	5	5	5	0

[1] Approximate counts based on a field survey conducted in 2013
[2] Includes the BSMP (per conceptual plans) and all other planned related projects

4.5 CONSTRUCTION PHASE

Project construction activities would typically take place between the hours of 7:00 a.m. and 9:00 p.m. in accordance with LAMC Section 41.40(a). To expedite construction activities, certain construction activities may occur during nighttime, weekend, and holiday periods with the approval of the Board of Police Commissioners pursuant to LAMC Section 41.40(j). In addition, construction within City roadways may occur during peak hours (i.e., 6:00 a.m. to 9:00 a.m. and 3:30 p.m. to 7:00 p.m.) in accordance with the Mayor's Executive Directive No. 2 and Bureau of Engineering Special Order No. 001-0406 which contain an exemption to the rush hour roadway construction prohibition for major public works projects with traffic mitigation plans.

4.5.1 Public Transit

Bus lines that would be affected by lane closures due to construction activities would continue to operate where feasible in the remaining traffic lanes. A minimum of one traffic lane in each direction will be provided during the AM and PM peak periods, and left turn pockets will be provided where room is available. During the off-peak periods and night hours when temporary full lane closures are anticipated, bus lines would be re-routed to adjacent streets in a manner that minimizes the inconvenience to bus passengers. If a block is closed that includes a bus stop, the bus stop would be temporarily relocated to the portion of the street segment that is still open to bus service.

4.5.2 Streets and Highways

A minimum of one traffic lane in each direction will be provided during the AM and PM peak periods, and left turn pockets will be provided where room is available. Access to homes and businesses will be maintained throughout the construction period. This can be ensured by leaving at least one business access point open to traffic. For businesses with single access points, the access point may be maintained through the use of temporary detours, steel plates, and half-closures of driveways. To the extent feasible full lane closures are anticipated to take place during the off peak periods and night hours. To minimize traffic impacts, LADOT guidelines require that all construction related traffic, such as those generated by construction workers, should avoid peak commute hours. A summary of the construction activities is presented in Section 1.5.

Designated haul routes for trucks will be identified during final design. These routes will be situated to minimize noise, vibration, and other possible impacts to adjacent residential areas. Since construction work is in the downtown area, it is anticipated that trucks would travel from the excavation site to the nearest freeway ramp and use the adjacent freeways to haul the excavated material. During the construction period, approximately 10 to 15 trucks per day will be utilized to haul away the materials from track, utility relocation and maintenance facility excavation.

The Streetcar Construction Methods report presents sketches of typical work zone and traffic control cross sections along various roadways of the alignment. As noted earlier, a minimum of one traffic lane in each direction will be provided during the AM and PM peak periods. Based on the typical cross-sections proposed during the construction period, at least one traffic lane will be lost in each direction on Grand Avenue, Broadway, Hill Street, Figueroa Street, 7th Street, and 9th Street during the AM and PM peak hours. This loss in lane capacity at the intersections, would most likely result in an increase in delay and a decrease in the level of service. It is highly likely that some of the intersections along the streetcar alignment construction work zone area operating at LOS D or worse during the opening year (2020) without Project condition will be significantly impacted due to the construction activity. Although this is a short term impact that may be in place for a duration of two to three weeks, mitigation measures would be identified and implemented as part of the traffic management plan discussed in Section 6.2.2.

4.5.3 Parking

It may be necessary to prohibit on-street curb parking when traffic lanes are closed or eliminated due to construction activities. Existing parking meters affected by construction, within the traffic control zone of influence, would be removed or covered as directed by the City of Los Angeles parking division.

4.5.4 Pedestrian and Bicycle Facilities

During construction, at least one travel lane will be maintained in each direction and the sidewalks will be open to pedestrians. Pedestrian access will remain open along the sidewalk, and temporary ramps and walkways will be provided by the contractor to maintain ADA accessibility at intersections and crosswalks. In addition, dedicated bicycle lanes potentially affected by work zones, such as along 7th Street for the 7th Street Alternative and along Figueroa and 11th Streets, may operate along the open traffic lane or require temporary detours.

Chapter 5 – Project Improvements and Design Elements

As discussed earlier in Section 4.2, there are various project improvements and design elements that would either serve to avoid or minimize effects on the roadway network and its users if not increase efficiencies of the network and operations of the streetcar system.

5.1 PROJECT IMPROVEMENTS AND PROJECT DESIGN ELEMENTS

PDE-TRAF-1: Lane Reconfiguration on Hill Street

In order to accommodate the streetcar, Hill Street would need to be reconfigured, however, the proposed changes would not reduce the existing number of travel lanes along Hill Street. Instead, the removal of on-street parking and/or center turn lanes along certain segments are needed to accommodate the streetcar alignment, which is located along the curb lane in the northbound direction. A typical mid-block conceptual cross-section for the before and after conditions along Hill Street is shown as part of the project description and was previously presented in **Figure 1-4**. These Hill Street lane reconfigurations are proposed between 1st and 7th Streets for the 7th Street Alternative or between 1st and 9th Street for the 9th Street Alternative. This proposed reconfiguration would include bump outs at some of the street corners to accommodate the station platforms, which would create and allow for full-time on-street parking/loading spaces along the east side of Hill Street. The station platforms are predominantly located on the near side of the intersection.

To confirm the adequacy of Hill Street to accommodate streetcar operations, field observations of current traffic circulation patterns, roadway lane configurations and peak period parking restrictions were conducted during the PM peak period (3:00 p.m. to 6:00 p.m.) on a typical representative weekday. The objective was to determine if the total curb-to-curb width of Hill Street would be adequate to accommodate at least two travel lanes in each direction with the northbound curb lane also being utilized by the streetcar alignment. The proposed reconfiguration would allow for a two-way left turn median between 4th and 6th Streets to provide enhanced driveway access to neighboring businesses and off-street parking lots. As a result of this proposed lane reconfiguration along Hill Street, the proposed conceptual design street dimensions were compared with the *Downtown Street Standards* and it was confirmed that they are within the maximum street dimensions currently shown for Hill Street.

PDE-TRAF-2: Traffic Signal Improvements

Traffic signal improvements are proposed in efforts to maximize efficiencies of the roadway network and operations of the Project. Traffic signal improvements that would be part of the Project include the following:

- Protected northbound right-turn phase at the intersection of Grand Avenue / 1st Street for both the 7th Street and 9th Street Alternatives with the Grand Avenue Extension
- Protected northbound left-turn phase at the intersection of Hill Street / 1st Street for both the 7th Street and 9th Street Alternatives with the Grand Avenue Extension
- Protected eastbound left-turn phase at the intersection of Hill Street / 7th Street for the 7th Street Alternative with and without the Grand Avenue Extension

- Redistribute the green time within the existing signal cycle length to provide more green time to the streetcar movement/direction. The amount of green time would range from 5 seconds to up to 10% of the cycle length (7 seconds for the AM peak hour and 9 seconds for the PM peak hour) when the transit vehicle is present and only if the controller has enough time in the cycle to provide it

PDE-TRAF-3: Right Turn Lane Improvements
In order to improve operations of the streetcar, including its run time, a Speed Improvements Analysis was conducted to evaluate potential physical and operational treatments along the streetcar alignment. This study was initiated in August 2015 and completed in September 2015. Proposed right turn lane improvements were identified at various intersections along Broadway and Hill Street to allow for the flow of vehicles in the through lanes, which would help reduce delay and optimize operating time for the streetcar. The following right turn lanes would be incorporated as part of the project definition:

- A right turn pocket lane for the southbound direction of Broadway at 3rd Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks
- A right turn pocket lane for the southbound direction of Broadway at 5th Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks
- A right turn pocket lane for the southbound direction of Broadway at 8th Street to provide storage and off-set the anticipated vehicular queues during pedestrians crossing the west leg, thus minimizing potential spillover onto the through movement and streetcar tracks
- A right turn pocket lane for the southbound direction of Broadway at 11th Street to enhance the streetcar run time by segregating the right turn streetcar movement from the through vehicular traffic movement
- A right turn pocket lane for the northbound direction of Hill Street at 6th Street to enhance the streetcar run time by segregating the right turn vehicular traffic movement from the through streetcar movement and to provide storage so that right turn queues do not spillover onto the northbound Hill Street through movement and the streetcar tracks

The Project would ensure that these proposed lane configurations would be in conformance with applicable City roadway and design standards, such as the *Downtown Street Standards* (DSS) and the *Broadway Streetscape Master Plan* (BSMP).

5.2 ADDITIONAL DESIGN ELEMENTS

The proposed Project is expected to create a pedestrian friendly environment and support walking and transit use. Implementation of the following project design elements will result in no negative effects to the pedestrian and transit environment.

PDE-TRAF-4: Rider/Pedestrian/Bicyclist Safety Elements
The Project would be designed to maximize pedestrian safety and accessibility through the implementation of measures that would minimize or avoid vehicular/pedestrian and vehicular/bicycle conflicts. Design elements of the streetcar system may include, but would not be limited to, the following: streetcars equipped with lighting, audible warning devices; train to wayside communication (TWC);

signage; striping; and wayfinding. In addition, specific measures will be implemented to reduce potential impacts affecting bicycle use. Please see Section 6.2.4. Mid-block pedestrian signals shall be provided on Grand Avenue and Hill Street, between 1st Street and 2nd Street. In order to provide for a safe and reliable operation, the Project will comply with, but would not be limited to, improvement programs of LADOT, other City departments, and applicable CPUC regulations.

PDE-TRAF-5: Bus Service Coordination
The City would coordinate with local and regional bus operators prior to implementation of designs that could result in necessary rerouting of buses.

PDE-TRAF-6: Traffic Rerouting Notifications
Before any major rerouting changes are made as a result of the Project, fliers would be provided on buses at least 2 weeks in advance notifying riders of route modifications. In addition, hoods would be placed over bus-stop signs, also notifying riders of what modifications have been made to the bus route.

PDE-TRAF-7: Streetcar Vehicles Safety Elements
Streetcar vehicles would be equipped with audible warning devices, a TWC system, and safety and wayfinding signs. Operators would undergo extensive training and continuing evaluation to ensure safety. The City would also develop transit safety programs, with the goal of raising streetcar safety awareness in the community.

Chapter 6 – Mitigation Measures

6.1 MITIGATION MEASURES

6.1.1 Existing (2014/2015) With Project

Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 7th Street Alternative with the Grand Avenue Extension were compared with the Existing (2014/2015) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-4** and **Table 4-5**, three intersections are anticipated to be significantly impacted by the 7th Street Alternative with the Grand Avenue Extension. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no feasible measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening is not an option either due to these new standards, or because it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

Although still significantly impacted, as shown in **Table 6-1**, the three significantly impacted intersections would operate at LOS D or better, which is considered an acceptable level of service in urban areas. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts:

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.
- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

Table 6-1: Existing (2014/2015) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	51.7	D	39.0	D	YES
4	Hill Street / 1st Street	35.8	D	34.3	C	YES
35	Hill Street / 7th Street	45.6	D	33.9	C	YES

[1] Average vehicle delay in seconds

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Existing (2014/2015) – 7th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Existing (2014/2015) to identify significantly (CEQA) affected locations. As shown in **Table 4-7** and **Table 4-8**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 7th Street Alternative with the Grand Avenue Extension. Consequently, the intersection of Hill Street and 7th Street is the only significantly impacted location for this alternative. The result of this location was previously presented in **Table 6-1**.

Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Existing (2014/2015) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-10** and **Table 4-11**, two intersections are anticipated to be significantly impacted by the 9th Street Alternative with the Grand Avenue Extension. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening was not an option either due to these new standards, or since it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

Although still significantly impacted, as shown in **Table 6-2**, the two significantly impacted intersections at Grand Avenue and 1st Street as well as Hill Street and 1st Street would operate at LOS D or better, which is considered an acceptable level of service in urban areas. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts.

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.
- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Table 6-2: Existing (2014/2015) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	51.7	D	39.0	D	YES
4	Hill Street / 1st Street	35.8	D	34.3	C	YES

[1] Average vehicle delay in seconds

Existing (2014/2015) – 9th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Existing (2014/2015) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Existing (2014/2015) to identify significantly (CEQA) affected locations. As shown in **Table 4-13** and **Table 4-14**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 9th Street Alternative without the Grand Avenue Extension. Consequently, none of the remaining 59 intersections are anticipated to be significantly impacted by this alternative.

6.1.2 Opening Year (2020) With Project

Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 7th Street Alternative with the Grand Avenue Extension were compared with the Opening Year (2020) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-17** and **Table 4-18**, three intersections are anticipated to be significantly impacted by the 7th Street Alternative with the Grand Avenue Extension. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening was not an option either due to these new standards, or since it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

Although still significantly impacted, as shown in **Table 6-3**, two of the significantly impacted intersections (Hill Street/1st Street and Hill Street/7th Street) would operate at LOS D, which is considered an acceptable level of service in urban areas. The intersection of Grand Avenue/1st Street would continue to be significantly impacted. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts.

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.

- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Table 6-3: Opening Year (2020) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	62.0	E	56.8	E	YES
4	Hill Street / 1st Street	41.2	D	40.8	D	YES
35	Hill Street / 7th Street	48.6	D	40.3	D	YES

[1] Average vehicle delay in seconds

Opening Year (2020) – 7th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Opening Year (2020) to identify significantly (CEQA) affected locations. As shown in **Table 4-20** and **Table 4-21**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 7th Street Alternative with the Grand Avenue Extension. Consequently, the intersection of Hill Street and 7th Street is the only significantly impacted location for this alternative. The result of this location was previously presented in **Table 6-3**.

Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Opening Year (2020) without Project to significantly (CEQA) affected locations. As seen in **Table 4-23** and **Table 4-24**, two intersections are anticipated to be significantly impacted by the 9th Street Alternative with the Grand Avenue Extension. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening was not an option either due to these new standards, or since it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

As shown in **Table 6-4**, the significantly impacted intersections Hill Street/1st Street would operate at LOS D, which is considered an acceptable level of service in urban areas. The intersection of Grand Avenue/1st Street would continue to be significantly impacted. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts.

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.
- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Table 6-4: Opening Year (2020) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	62.0	E	56.8	E	YES
4	Hill Street / 1st Street	41.2	D	40.8	D	YES

[1] Average vehicle delay in seconds

Opening Year (2020) – 9th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Opening Year (2020) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Opening Year (2020) to identify significantly (CEQA) affected locations. As shown in **Table 4-26** and **Table 4-27**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 9th Street Alternative without the Grand Avenue Extension. Consequently, none of the remaining 59 intersections are anticipated to be significantly impacted by this alternative.

6.1.3 Horizon Year (2040) With Project

Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 7th Street Alternative with the Grand Avenue Extension were compared with the Horizon Year (2040) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-30** and **Table 4-31**, three intersections are anticipated to be significantly impacted by the 7th

Street Alternative with the Grand Avenue Extension. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening was not an option either due to these new standards, or since it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

As shown in **Table 6-5**, all three intersections would continue to be significantly impacted. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts.

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.
- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Table 6-5: Horizon Year (2040) – 7th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	80.2	F	73.6	E	YES
4	Hill Street / 1st Street	59.1	E	56.9	E	YES
35	Hill Street / 7th Street	63.3	E	51.1	D	YES

[1] Average vehicle delay in seconds

Horizon Year (2040) – 7th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 7th Street Alternative without the Grand Avenue Extension were compared with the Horizon Year (2040) to identify significantly (CEQA) affected locations. As shown in **Table 4-33** and **Table 4-34**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 7th Street Alternative with the Grand Avenue Extension. Consequently, the intersection of Hill Street and 7th Street is the only significantly impacted location for this alternative. The result of this location was previously presented in **Table 6-5**.

Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 9th Street Alternative with the Grand Avenue Extension were compared with the Horizon Year (2040) without Project to identify significantly (CEQA) affected locations. As seen in **Table 4-36** and **Table 4-37**, two intersections are anticipated to be significantly impacted by the 9th Street Alternative. Physical traffic mitigation improvement options at the significantly impacted intersections were evaluated in an attempt to fully mitigate the impacts; however, no measures to fully mitigate these impacts were identified due to the constraints of the existing physical conditions. With the adoption of the Downtown Design Guide and new street standards, the roadway width has been set along the majority of streets in downtown. Therefore, street widening was not an option either due to these new standards, or since it was not considered practical nor desirable to widen the street at the expense of reduced sidewalk widths.

Although still significantly impacted, as shown in **Table 6-6**, both intersections would continue to be significantly impacted. Although no feasible measures may fully mitigate these intersections, there are other improvements that may be considered to address the residual impacts which may include, but not limited to, the implementation of the following additional improvements to reduce intersection impacts.

- on-going signal timing modifications, as needed, after the project is operational and traffic operating conditions shall be monitored.
- vehicle trip reduction measures (this could include encouraging walkability, supporting the use of alternative transportation modes, enhancing pedestrian crossings through curb extensions, first/last mile connections afforded by the streetcar, bike parking on widened sidewalks, bike share kiosks, pedestrian wayfinding signage program, and real time information at stations).

The numerical benefits of these proposed improvements cannot be determined or quantified. However, these enhancements would result in additional benefits that were not factored in the analysis, so the impacts presented in this section are likely overstated.

Table 6-6: Horizon Year (2040) – 9th Street Alternative With Grand Avenue Extension Mitigated Intersection Level of Service

#	Intersection	AM		PM		Significant Impact
		Delay[1]	LOS	Delay[1]	LOS	
2	Grand Avenue / 1st Street	80.2	F	73.6	E	YES
4	Hill Street / 1st Street	59.1	E	56.9	E	YES

[1] Average vehicle delay in seconds

Horizon Year (2040) – 9th Street Alternative Without Grand Avenue Extension

This alternative eliminates the streetcar alignment on 1st Street west of Hill Street, including the Grand Avenue spur. Consequently, only the intersections located along 1st Street are affected.

Using the threshold criteria presented in **Table 2-2**, intersection operating conditions under the Horizon Year (2040) with the 9th Street Alternative without the Grand Avenue Extension were compared with the Horizon Year (2040) to identify significantly (CEQA) affected locations. As shown in **Table 4-39** and **Table 4-40**, none of the six intersections affected by this alternative of the proposed Project are anticipated to be significantly impacted. For the remaining 59 intersections, the results are the same as the 9th Street Alternative without the Grand Avenue Extension. Consequently, none of the remaining 59 intersections are anticipated to be significantly impacted by this alternative.

6.2 CONSTRUCTION PHASE MITIGATION

MM-TRAF-C1: Construction Mitigation Monitoring. A construction mitigation program shall be established with the participation of LABOE Environmental Management, Bureau of Contracts Administration, and the construction contractor. A community affairs entity will be established to administer the construction mitigation program for the benefit of the community. All mitigation measures shall be monitored and reported to LABOE on a quarterly basis. The program will keep the community informed of all construction activities, with special emphasis for activities that affect the public. The program will also create a hotline number for a direct connection to staff familiar with the community and the Project. This entity will offer individual consultation for residents, facilities, and businesses for remedies appropriate to the impacts. It will identify community/business needs prior to and during the construction period through the use of surveys and community meetings.

6.2.1 Public Transit

Before any significant rerouting changes are made due to the construction of the proposed Project, fliers will be provided on buses at least two weeks in advance notifying riders of route modifications. In addition, hoods will be placed over bus-stop signs, also notifying riders of what modifications have been made to the bus route and guiding them to the nearest adjacent bus-stop. Construction impacts to public transit would be mitigated by implementation of the aforementioned measures. However, during the night hours some of the impacts may potentially not change from the level initially identified during construction due to the possibility of increased bus travel times.

6.2.2 Streets and Highways

During final design, site and street specific Worksite Traffic Control Plans will be developed in cooperation with LADOT to accommodate required pedestrian and traffic movements during the construction phase and minimize potential short term impacts to the environment. Designated haul routes for trucks will be identified during final design. During the construction period, the loss in lane capacity at the intersections would most likely result in an increase in delay and a decrease in the level of service. It is highly likely that some of the intersections along the streetcar alignment construction work zone area operating at LOS D or worse during the Opening Year (2020) without Project condition will be significantly impacted due to the construction activity. Although this is a short term impact that may be in place for a duration of two to three weeks, mitigation measures would be implemented.

During the design phase of the project a traffic management plan (TMP) would be prepared to address construction related concerns and provide short term mitigation measures. The TMP would be used to manage construction activities through the implementation of a traffic control plan to mitigate the impact of traffic disruption and to ensure the safety of all users of the affected roadway. With the implementation of Mitigation Measure TRAF-C2, construction-related traffic impacts on neighborhoods/communities, and emergency and utility services would be less than significant under CEQA.

MM-TRAF-C2: Develop a Traffic Management Plan. The Los Angeles Department of Transportation shall develop and implement a Traffic Management Plan (TMP) to reduce construction-related traffic impacts on public services, community facilities, utilities, bicycle circulation and pedestrian circulation. The TMP shall be prepared during final design for implementation during construction to mitigate the traffic impacts caused by construction of the Project. The TMP shall identify potential measures such as public awareness and changeable message signs (CMS). The TMP shall be developed in consultation with emergency service providers (i.e., local police and fire departments).

The TMP shall address construction duration and activities and include measures such as operating a temporary traffic signal, bicycle lane detours, or using flagmen adjacent to construction activities, as appropriate. The TMP shall also coordinate review of construction activities along cross and parallel streets accordingly. A community affairs entity shall be established to administer a construction impact mitigation program for the benefit of the community. This program shall keep the community informed of all construction activities, with special emphasis on activities that affect the public. The program shall also set up a hotline number with a direct connection to staff familiar with the community and the Project. This entity shall offer individual consultation for residents, facilities, and businesses for remedies appropriate to the impacts encountered. The program shall identify community/business needs prior to and during the construction period through the use of surveys and community meetings.

Construction impacts affecting traffic for the proposed Project would be mitigated to a level of insignificance by implementation of the aforementioned measures for the short term construction duration.

6.2.3 Parking

As noted earlier, it may be necessary to prohibit on-street curb parking when traffic lanes are closed or eliminated due to construction activities. In order to mitigate the short term loss of on-street parking supply, contractors will be required to have all employees park off-street at City approved locations to minimize impacts due to the loss of crucial commercial on-street parking.

6.2.4 Pedestrian and Bicycle Facilities

During construction, the work zone area will be protected by pedestrian fencing on the sidewalk side. Temporary ramps and walkways will be provided by the contractor to maintain ADA accessibility at intersections and crosswalks. In addition, bicycles may operate along the open traffic lane or require temporary detours when a dedicated bicycle lane is affected by work zones. These issues will be discussed as part of community outreach activities prior to the initiation of construction work zones. The following measure would reduce operational impacts of the Project related to bicycle safety.

MM-TRAF-O1: Signage and pavement markings shall be implemented to:

- Alert bicyclists to the presence of streetcar tracks.
- Instruct cyclists to cross tracks perpendicular to the direction of the rails. For left turning cyclists, pavement markings shall be provided to encourage perpendicular bicycle turning movements, such as "Copenhagen Left" turns. The signage and/or pavement markings would also clearly identify the presence of the flangeway to cyclists traveling parallel to the fixed guideway. A Copenhagen Left turn is a two-stage movement wherein the bicyclist crosses the intersection ahead, stops on the

opposite side in the direction he/she wishes to turn, awaits a green light, and crosses the intersection to complete the left turn movement.

- Alert bicyclists to use parallel bike routes (or Class II bike facilities) where available, such as Spring Street as an alternative route to southbound Broadway.

6.3 IMPACTS REMAINING AFTER MITIGATION

As indicated in Section 6.1, the intersections could not be mitigated to a level below significance although some of the impacted locations do operate at LOS D, which are generally considered acceptable operating levels of service for urban areas. In summary, the following impacts remain after mitigation.

Mitigation measure TRAF-O1 would reduce potential impacts affecting bicycle use along the project route. However, despite the actions identified in the mitigation measure, a potentially significant hazard for bicyclists would remain.

Summary of Existing (2014/2015) With Project Significantly Impacted Locations

- Grand Avenue and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension, and operating at acceptable levels of service in both the AM and PM peak hours
- Hill Street and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension, and operating at acceptable levels of service in both the AM and PM peak hours
- Hill Street and 7th Street – for the 7th Street Alternative with and without the Grand Avenue Extension, and operating at acceptable levels of service in both the AM and PM peak hours

Summary of Opening Year (2020) With Project Significantly Impacted Locations

- Grand Avenue and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension
- Hill Street and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension, and operating at acceptable levels of service in both the AM and PM peak hours
- Hill Street and 7th Street – for the 7th Street Alternative with and without the Grand Avenue Extension, and operating at acceptable levels of service in both the AM and PM peak hours

Summary of Horizon Year (2040) With Project Significantly Impacted Locations

- Grand Avenue and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension
- Hill Street and 1st Street – for both the 7th and 9th Street Alternatives with the Grand Avenue Extension
- Hill Street and 7th Street – for the 7th Street Alternative with and without the Grand Avenue Extension

Although the measures identified in Section 6.1 may not quantitatively reduce the impacts below the level of significance, they are recommended to optimize operating time for the Project and to maximize efficiency for the roadway network. These proposed enhancements would result in additional benefits that cannot be quantified and were not factored in the analysis.

Chapter 7 – References

City of Kansas City. *Kansas City Downtown Streetcar Project Transportation Technical Report*. September 2013.

City of Los Angeles. *2010 Bicycle Plan*. March 2011.

City of Los Angeles. *Broadway Dress Rehearsal Report*. November 2014.

City of Los Angeles. *Broadway Streetscape Master Plan*. February 2013.

City of Los Angeles. *Complete Streets Design Guide*. May 2015.

City of Los Angeles. *Downtown Street Standards*. April 2009.

City of Los Angeles. *Figueroa Streetscape Project Final Environmental Impact Report*. August 2013.

City of Los Angeles. *Mobility Plan 2035*. January 2016.

City of Los Angeles. *Traffic Study Policies and Procedures*. August 2014.

City of Seattle, URS Corporation, DKS Associates and Alta Planning + Design. *First Hill Streetcar Transportation Technical Report*. August 2010.

David Evans and Associates, Inc. *Portland Streetcar Loop Project – Local Traffic Technical Memorandum*. January 2008.

IBI Group. *Broadway Streetscape Plan Traffic Study*. November 2010.

Los Angeles County Metropolitan Transportation Authority. *2010 Congestion Management Program*. October 2010.

Parsons Brinckerhoff Quade & Douglas, Inc. *Seattle South Lake Union Streetcar Project Transportation Technical Report*. March 2005.

Transportation Research Board. *Highway Capacity Manual*. December 2010.

Appendix A
Intersection Turning Movement Counts

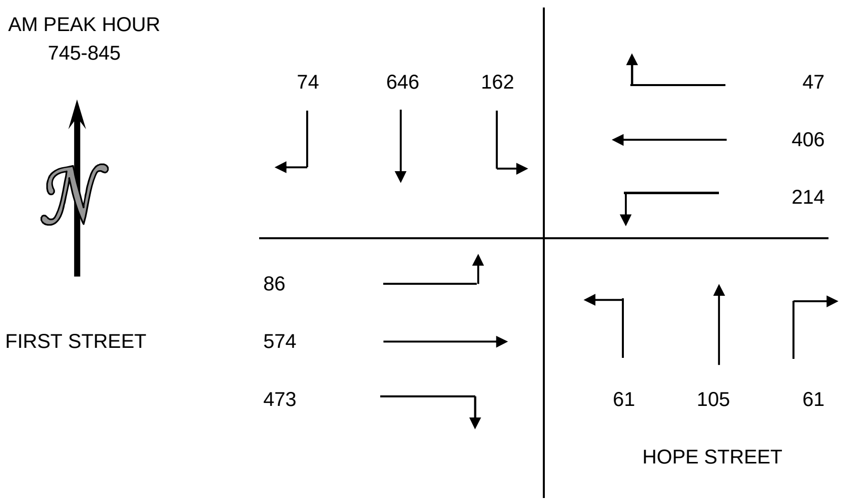
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY 23, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S HOPE STREET
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	29	93	28	11	116	55	6	15	17	47	84	14	515
715-730	22	123	41	11	97	57	8	18	12	52	93	23	557
730-745	17	127	32	13	116	58	11	30	21	72	135	29	661
745-800	30	129	34	11	108	74	21	27	24	105	140	18	721
800-815	12	171	51	10	107	55	15	21	10	108	138	26	724
815-830	13	150	35	11	83	36	11	26	18	123	142	18	666
830-845	19	196	42	15	108	49	14	31	9	137	154	24	798
845-900	21	176	35	8	100	46	11	26	13	99	151	24	710
HOUR TOTALS													
700-800	98	472	135	46	437	244	46	90	74	276	452	84	2454
715-815	81	550	158	45	428	244	55	96	67	337	506	96	2663
730-830	72	577	152	45	414	223	58	104	73	408	555	91	2772
745-845	74	646	162	47	406	214	61	105	61	473	574	86	2909
800-900	65	693	163	44	398	186	51	104	50	467	585	92	2898



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	26	5	9	15
715-730	15	6	13	23
730-745	24	8	21	17
745-800	45	13	30	29
800-815	51	21	20	19
815-830	25	4	24	34
830-845	22	105	22	26
845-900	17	4	20	17
HOUR TOTALS				
700-800	110	32	73	84
715-815	135	48	84	88
730-830	145	46	95	99
745-845	143	143	96	108
800-900	115	134	86	96

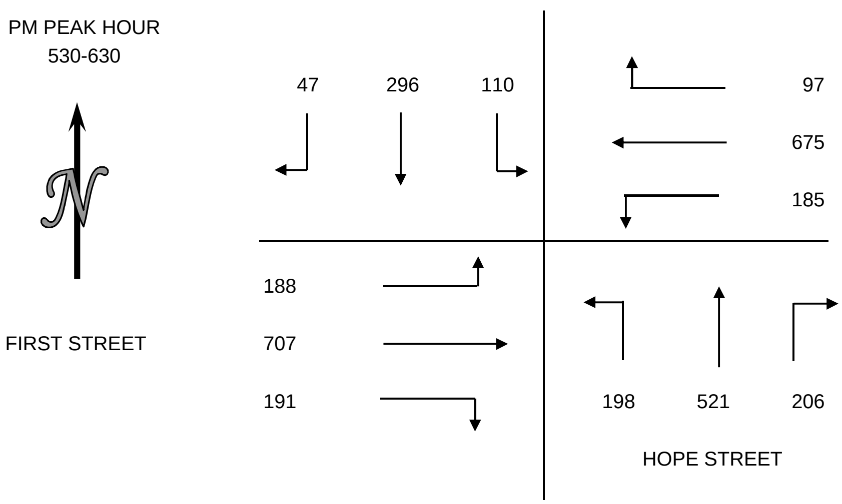
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 23, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S HOPE STREET
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
430-445	22	65	31	35	112	43	42	100	52	39	171	78	790
445-500	36	65	20	19	149	37	33	119	54	31	164	64	791
500-515	27	60	28	21	152	49	37	126	51	26	182	49	808
515-530	26	60	31	14	138	37	28	141	23	34	183	40	755
530-545	12	91	28	15	157	63	52	157	41	57	180	42	895
545-600	10	57	17	25	181	44	61	140	64	47	191	51	888
600-615	14	64	33	32	178	54	43	116	59	40	167	53	853
615-630	11	84	32	25	159	24	50	108	34	47	169	42	785
HOUR TOTALS													
430-530	111	250	110	89	551	166	140	486	180	130	700	231	3144
445-545	101	276	107	69	596	186	150	543	169	148	709	195	3249
500-600	75	268	104	75	628	193	178	564	179	164	736	182	3346
515-615	62	272	109	86	654	198	184	554	187	178	721	186	3391
530-630	47	296	110	97	675	185	206	521	198	191	707	188	3421



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	58	14	42	33
415-430	25	17	44	43
430-445	49	24	30	22
445-500	20	33	42	25
500-515	30	33	45	33
515-530	27	25	23	17
530-545	27	20	45	23
545-600	22	13	19	19
HOUR TOTALS				
400-500	152	88	158	123
415-515	124	107	161	123
430-530	126	115	140	97
445-545	104	111	155	98
500-600	106	91	132	92

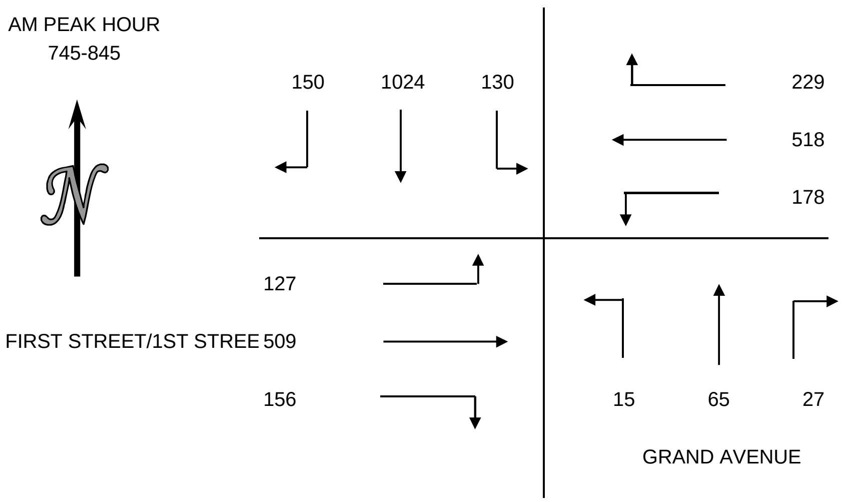
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 23, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S GRAND AVENUE
E/W FIRST STREET/1ST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	49	184	8	50	128	51	5	12	5	39	79	20	630
715-730	50	214	13	50	126	48	10	16	4	41	86	18	676
730-745	36	232	26	64	127	65	7	21	1	36	101	29	745
745-800	38	267	32	61	153	44	6	18	4	47	112	33	815
800-815	38	244	35	55	129	39	4	20	4	30	135	37	770
815-830	37	254	32	60	120	48	11	17	2	38	129	32	780
830-845	37	259	31	53	116	47	6	10	5	41	133	25	763
845-900	37	248	19	49	110	49	6	12	5	56	115	20	726
HOUR TOTALS													
700-800	173	897	79	225	534	208	28	67	14	163	378	100	2866
715-815	162	957	106	230	535	196	27	75	13	154	434	117	3006
730-830	149	997	125	240	529	196	28	76	11	151	477	131	3110
745-845	150	1024	130	229	518	178	27	65	15	156	509	127	3128
800-900	149	1005	117	217	475	183	27	59	16	165	512	114	3039



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	41	38	48	26
715-730	32	46	78	28
730-745	42	61	137	42
745-800	73	37	72	39
800-815	46	55	65	41
815-830	37	57	44	70
830-845	46	82	47	47
845-900	36	65	75	56
HOUR TOTALS				
700-800	188	182	335	135
715-815	193	199	352	150
730-830	198	210	318	192
745-845	202	231	228	197
800-900	165	259	231	214

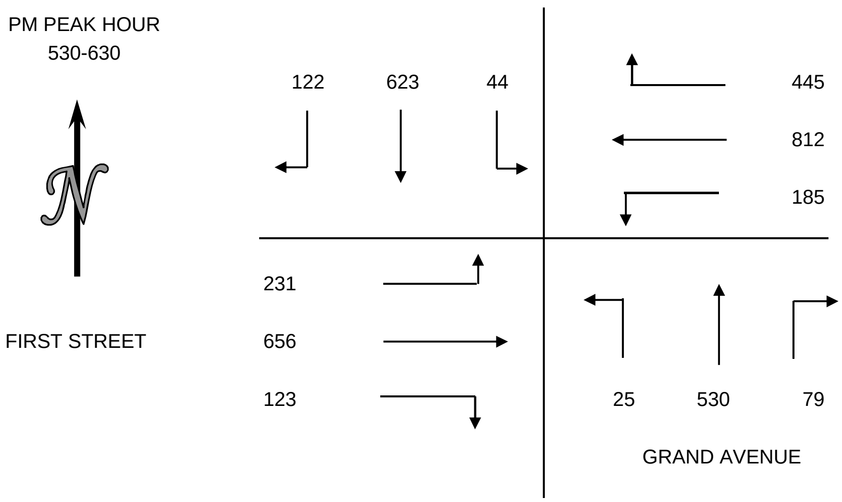
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 23, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S GRAND AVENUE
E/W FIRST STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
430-445	38	116	17	103	149	33	7	90	4	40	158	28	783
445-500	35	110	17	93	158	32	8	102	7	30	140	35	767
500-515	29	128	7	114	175	32	16	117	4	30	156	39	847
515-530	28	143	9	113	176	38	13	111	6	24	204	53	918
530-545	41	156	11	111	195	51	22	118	6	24	176	51	962
545-600	26	150	7	115	207	45	18	130	9	25	166	65	963
600-615	39	161	13	103	203	50	17	139	4	31	143	47	950
615-630	16	156	13	116	207	39	22	143	6	43	171	68	1000
HOUR TOTALS													
430-530	130	497	50	423	658	135	44	420	21	124	658	155	3315
445-545	133	537	44	431	704	153	59	448	23	108	676	178	3494
500-600	124	577	34	453	753	166	69	476	25	103	702	208	3690
515-615	134	610	40	442	781	184	70	498	25	104	689	216	3793
530-630	122	623	44	445	812	185	79	530	25	123	656	231	3875

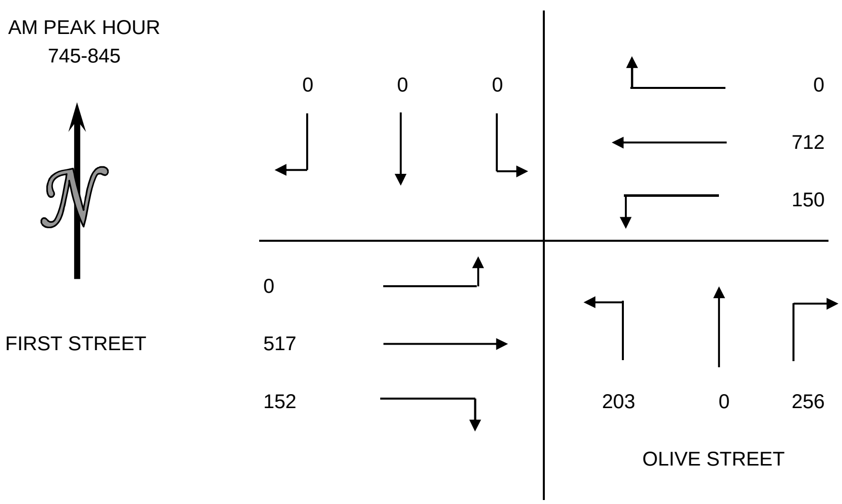


PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	101	106	159	132
415-430	71	92	125	85
430-445	106	87	117	132
445-500	59	71	43	61
500-515	35	28	61	55
515-530	18	20	20	44
530-545	31	16	30	59
545-600	18	15	28	82
HOUR TOTALS				
400-500	337	356	444	410
415-515	271	278	346	333
430-530	218	206	241	292
445-545	143	135	154	219
500-600	102	79	139	240

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 23, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S OLIVE STREET
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	0	0	0	0	176	18	34	0	46	19	73	0	366
715-730	0	0	0	0	181	32	45	0	42	30	89	0	419
730-745	0	0	0	0	193	32	44	0	79	34	87	0	469
745-800	0	0	0	0	191	27	56	0	56	35	125	0	490
800-815	0	0	0	0	186	38	71	0	41	38	130	0	504
815-830	0	0	0	0	168	46	65	0	52	44	136	0	511
830-845	0	0	0	0	167	39	64	0	54	35	126	0	485
845-900	0	0	0	0	161	49	81	0	42	32	106	0	471
HOUR TOTALS													
700-800	0	0	0	0	741	109	179	0	223	118	374	0	1744
715-815	0	0	0	0	751	129	216	0	218	137	431	0	1882
730-830	0	0	0	0	738	143	236	0	228	151	478	0	1974
745-845	0	0	0	0	712	150	256	0	203	152	517	0	1990
800-900	0	0	0	0	682	172	281	0	189	149	498	0	1971



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	0	14	16	1
715-730	0	27	33	10
730-745	0	43	59	24
745-800	0	51	64	27
800-815	0	108	22	28
815-830	0	93	2	33
830-845	0	50	4	29
845-900	0	48	36	10
HOUR TOTALS				
700-800	0	135	172	62
715-815	0	229	178	89
730-830	0	295	147	112
745-845	0	302	92	117
800-900	0	299	64	100

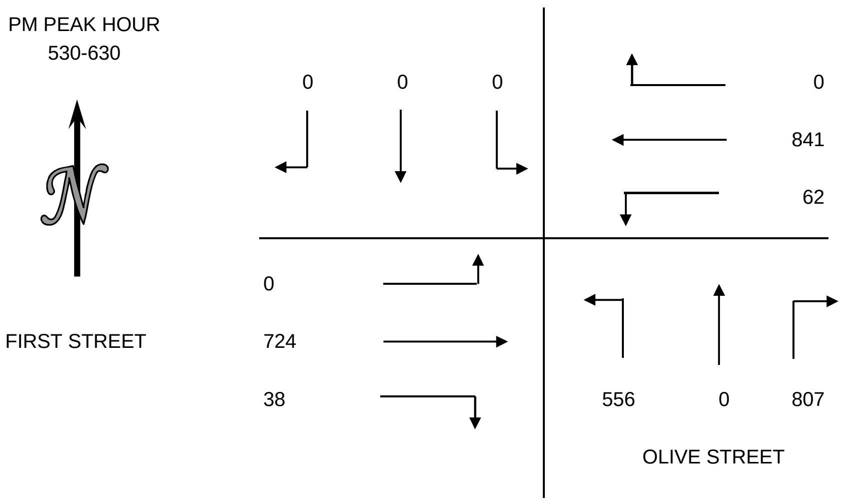
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 23, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S OLIVE STREET
E/W FIRST STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
430-445	0	0	0	0	164	8	113	0	92	11	168	0	556
445-500	0	0	0	0	192	14	157	0	109	8	175	0	655
500-515	0	0	0	0	196	13	175	0	123	6	169	0	682
515-530	0	0	0	0	219	7	154	0	117	14	206	0	717
530-545	0	0	0	0	219	16	194	0	119	8	196	0	752
545-600	0	0	0	0	231	19	208	0	152	6	185	0	801
600-615	0	0	0	0	192	10	189	0	144	10	159	0	704
615-630	0	0	0	0	199	17	216	0	141	14	184	0	771
HOUR TOTALS													
430-530	0	0	0	0	771	42	599	0	441	39	718	0	2610
445-545	0	0	0	0	826	50	680	0	468	36	746	0	2806
500-600	0	0	0	0	865	55	731	0	511	34	756	0	2952
515-615	0	0	0	0	861	52	745	0	532	38	746	0	2974
530-630	0	0	0	0	841	62	807	0	556	38	724	0	3028



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	0	37	63	34
415-430	0	40	50	19
430-445	0	59	61	23
445-500	0	44	37	10
500-515	0	35	47	13
515-530	0	16	24	3
530-545	0	6	22	1
545-600	0	4	23	4
HOUR TOTALS				
400-500	0	180	211	86
415-515	0	178	195	65
430-530	0	154	169	49
445-545	0	101	130	27
500-600	0	61	116	21

WILTEC Phone: (626) 564-1944 Fax: (626) 564-0969

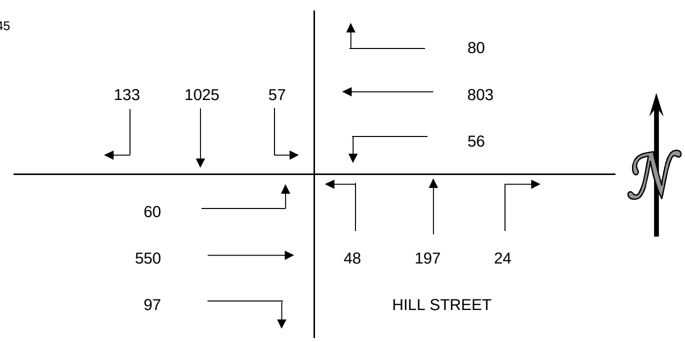
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	HILL STREET
	E/W	1ST STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	20	198	15	7	191	4	7	29	7	16	80	8	582
715-730	35	231	12	11	190	13	3	35	7	14	97	20	668
730-745	40	260	9	17	203	14	8	55	8	10	109	19	752
745-800	36	279	9	14	224	12	6	39	7	22	119	12	779
800-815	34	276	11	21	200	15	6	60	11	19	144	17	814
815-830	30	239	15	21	193	15	6	48	15	21	142	16	761
830-845	33	231	22	24	186	14	6	50	15	35	145	15	776
845-900	29	241	14	26	202	28	8	34	7	17	145	7	758
900-915	45	277	24	29	173	19	10	57	11	26	141	14	826
915-930	52	211	31	19	154	13	10	37	12	24	103	26	692
930-945	42	215	23	6	131	12	8	41	12	22	128	16	656
945-1000	38	181	28	15	159	16	6	25	7	19	94	12	600
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	131	968	45	49	808	43	24	158	29	62	405	59	2781
715-815	145	1046	41	63	817	54	23	189	33	65	469	68	3013
730-830	140	1054	44	73	820	56	26	202	41	72	514	64	3106
745-845	133	1025	57	80	803	56	24	197	48	97	550	60	3130
800-900	126	987	62	92	781	72	26	192	48	92	576	55	3109
815-915	137	988	75	100	754	76	30	189	48	99	573	52	3121
830-930	159	960	91	98	715	74	34	178	45	102	534	62	3052
845-945	168	944	92	80	660	72	36	169	42	89	517	63	2932
900-1000	177	884	106	69	617	60	34	160	42	91	466	68	2774

AM PEAK HOUR: 745-845



1ST STREET

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	32	14	35	56	137
715-730	33	20	53	87	193
730-745	42	18	43	103	206
745-800	29	14	46	118	207
800-815	39	24	37	151	251
815-830	69	32	58	170	329
830-845	50	15	47	130	242
854-900	60	25	62	147	294
900-915	53	28	57	126	264
915-930	58	23	45	113	239
930-945	64	28	65	118	275
945-1000	56	31	65	101	253
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	136	66	177	364	743
715-815	143	76	179	459	857
730-830	179	88	184	542	993
745-845	187	85	188	569	1029
800-900	218	96	204	598	1116
815-915	232	100	224	573	1129
830-930	221	91	211	516	1039
845-945	235	104	229	504	1072
900-1000	231	110	232	458	1031

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	2	1	1	2	6
715-730	0	1	2	1	4
730-745	1	2	0	0	3
745-800	3	0	0	0	3
800-815	0	1	0	1	2
815-830	2	3	1	1	7
830-845	0	0	0	1	1
845-900	4	2	0	2	8
900-915	1	1	1	0	3
915-930	2	1	2	6	11
930-945	1	1	0	4	6
945-1000	0	0	0	3	3
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	6	4	3	3	16
715-815	4	4	2	2	12
730-830	6	6	1	2	15
745-845	5	4	1	3	13
800-900	6	6	1	5	18
815-915	7	6	2	4	19
830-930	7	4	3	9	23
845-945	8	5	3	12	28
900-1000	4	3	3	13	23

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

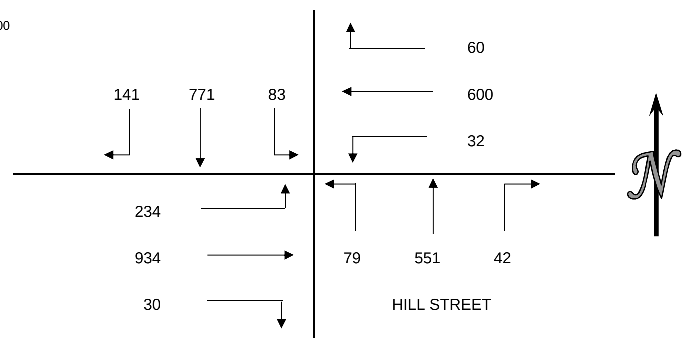
CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	HILL STREET
	E/W	1ST STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	31	152	10	8	127	15	8	67	13	8	153	39	631
315-330	35	175	10	14	120	5	13	85	11	16	153	43	680
330-345	24	192	16	13	116	11	9	80	10	13	164	48	696
345-400	26	184	18	16	129	6	13	107	8	9	211	57	784
400-415	38	224	21	8	154	8	11	111	10	11	215	52	863
415-430	33	197	19	11	134	10	10	83	11	9	197	56	770
430-445	44	211	31	22	153	7	17	99	17	8	231	62	902
445-500	31	195	21	15	167	14	11	111	13	7	220	54	859
500-515	49	224	24	17	101	9	11	135	20	7	248	51	896
515-530	29	197	24	19	143	6	13	147	23	6	224	60	891
530-545	35	190	20	11	178	4	8	113	16	4	222	57	858
545-600	28	160	15	13	178	13	10	156	20	13	240	66	912
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	116	703	54	51	492	37	43	339	42	46	681	187	2791
315-415	123	775	65	51	519	30	46	383	39	49	743	200	3023
330-430	121	797	74	48	533	35	43	381	39	42	787	213	3113
345-445	141	816	89	57	570	31	51	400	46	37	854	227	3319
400-500	146	827	92	56	608	39	49	404	51	35	863	224	3394
415-515	157	827	95	65	555	40	49	428	61	31	896	223	3427
430-530	153	827	100	73	564	36	52	492	73	28	923	227	3548
445-545	144	806	89	62	589	33	43	506	72	24	914	222	3504
500-600	141	771	83	60	600	32	42	551	79	30	934	234	3557

PM PEAK HOUR: 500-600

1ST STREET



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	61	26	47	93	227
315-330	54	26	86	125	291
330-345	57	34	96	148	335
345-400	75	37	101	168	381
400-415	73	39	117	167	396
415-430	60	23	58	104	245
430-445	54	21	90	153	318
445-500	52	16	37	108	213
500-515	47	10	34	121	212
515-530	22	17	33	68	140
530-545	25	12	31	47	115
545-600	12	19	42	56	129
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	247	123	330	534	1234
315-415	259	136	400	608	1403
330-430	265	133	372	587	1357
345-445	262	120	366	592	1340
400-500	239	99	302	532	1172
415-515	213	70	219	486	988
430-530	175	64	194	450	883
445-545	146	55	135	344	680
500-600	106	58	140	292	596

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	1	1	6	3	11
315-330	1	2	0	10	13
330-345	1	3	0	4	8
345-400	1	1	0	4	6
400-415	3	3	2	9	17
415-430	3	2	0	6	11
430-445	1	1	0	6	8
445-500	1	4	2	3	10
500-515	0	2	1	1	4
515-530	2	0	1	0	3
530-545	0	1	0	2	3
545-600	0	0	0	0	0
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	4	7	6	21	38
315-415	6	9	2	27	44
330-430	8	9	2	23	42
345-445	8	7	2	25	42
400-500	8	10	4	24	46
415-515	5	9	3	16	33
430-530	4	7	4	10	25
445-545	3	7	4	6	20
500-600	2	3	2	3	10

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

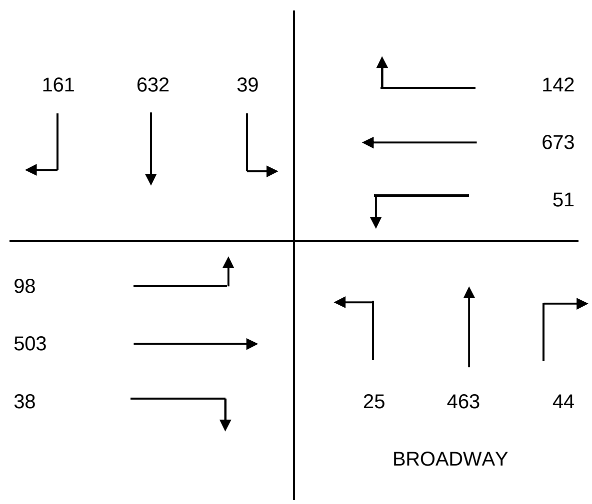
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 22, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S BROADWAY
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	27	102	8	11	99	5	3	47	9	2	77	10	400
715-730	44	137	11	15	151	8	6	76	11	2	98	19	578
730-745	40	153	8	25	178	10	16	105	9	5	104	11	664
745-800	30	163	6	21	183	16	8	96	3	3	148	20	697
800-815	53	174	14	27	168	5	18	114	9	15	134	28	759
815-830	31	152	5	39	167	17	11	127	5	8	117	30	709
830-845	47	143	14	55	155	13	7	126	8	12	104	20	704
845-900	43	133	13	38	140	21	15	93	7	11	120	19	653
HOUR TOTALS													
700-800	141	555	33	72	611	39	33	324	32	12	427	60	2339
715-815	167	627	39	88	680	39	48	391	32	25	484	78	2698
730-830	154	642	33	112	696	48	53	442	26	31	503	89	2829
745-845	161	632	39	142	673	51	44	463	25	38	503	98	2869
800-900	174	602	46	159	630	56	51	460	29	46	475	97	2825

AM PEAK HOUR
745-845

FIRST STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	30	24	22	13
715-730	38	22	30	24
730-745	44	41	38	24
745-800	20	37	40	33
800-815	50	45	28	22
815-830	32	56	31	16
830-845	37	62	29	17
845-900	46	71	35	29
HOUR TOTALS				
700-800	132	124	130	94
715-815	152	145	136	103
730-830	146	179	137	95
745-845	139	200	128	88
800-900	165	234	123	84

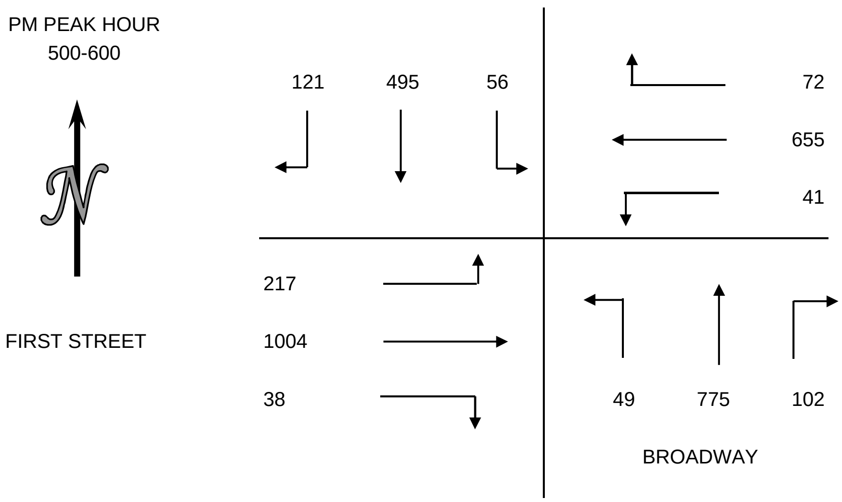
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 22, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S BROADWAY
E/W FIRST STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
430-445	22	122	14	20	109	8	17	123	11	10	205	39	700
445-500	32	128	15	20	138	10	23	164	17	5	222	43	817
500-515	31	131	15	19	161	7	33	192	13	8	244	38	892
515-530	30	131	12	20	156	11	10	208	11	9	237	64	899
530-545	31	117	16	23	173	10	31	184	11	12	262	49	919
545-600	29	116	13	10	165	13	28	191	14	9	261	66	915
600-615	13	109	9	17	159	8	27	205	12	4	252	43	858
615-630	11	94	7	19	179	13	16	200	20	4	227	43	833
HOUR TOTALS													
430-530	115	512	56	79	564	36	83	687	52	32	908	184	3308
445-545	124	507	58	82	628	38	97	748	52	34	965	194	3527
500-600	121	495	56	72	655	41	102	775	49	38	1004	217	3625
515-615	103	473	50	70	653	42	96	788	48	34	1012	222	3591
530-630	84	436	45	69	676	44	102	780	57	29	1002	201	3525



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	61	46	46	30
415-430	20	49	42	26
430-445	86	44	50	43
445-500	38	46	29	26
500-515	26	42	49	19
515-530	21	27	33	8
530-545	20	31	37	16
545-600	12	25	13	10
HOUR TOTALS				
400-500	205	185	167	125
415-515	170	181	170	114
430-530	171	159	161	96
445-545	105	146	148	69
500-600	79	125	132	53

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

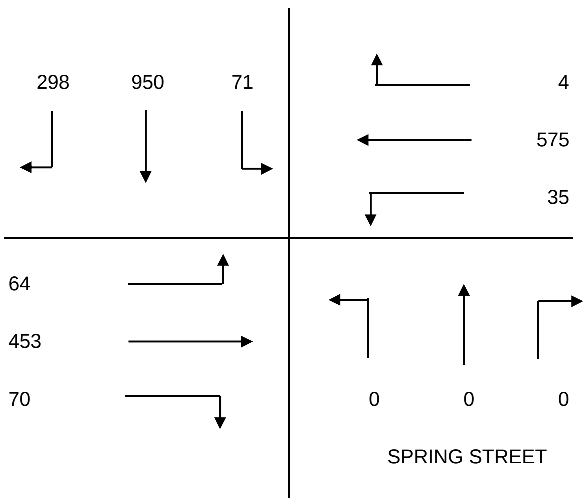
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 22, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S SPRING STREET
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	34	160	15	1	104	6	0	0	0	5	83	9	417
715-730	53	179	14	2	126	11	0	0	0	8	84	13	490
730-745	53	224	14	4	147	13	0	0	0	11	105	19	590
745-800	64	232	16	0	149	6	0	0	0	12	116	15	610
800-815	74	222	17	1	153	7	0	0	0	23	132	14	643
815-830	68	245	20	1	151	11	0	0	0	18	104	17	635
830-845	92	251	18	2	122	11	0	0	0	17	101	18	632
845-900	68	245	19	3	112	7	0	0	0	23	87	14	578
HOUR TOTALS													
700-800	204	795	59	7	526	36	0	0	0	36	388	56	2107
715-815	244	857	61	7	575	37	0	0	0	54	437	61	2333
730-830	259	923	67	6	600	37	0	0	0	64	457	65	2478
745-845	298	950	71	4	575	35	0	0	0	70	453	64	2520
800-900	302	963	74	7	538	36	0	0	0	81	424	63	2488

AM PEAK HOUR
745-845

FIRST STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	20	6	32	23
715-730	28	6	37	28
730-745	19	13	37	42
745-800	13	16	29	29
800-815	31	12	33	45
815-830	27	10	21	40
830-845	23	19	20	35
845-900	35	17	21	43
HOUR TOTALS				
700-800	80	41	135	122
715-815	91	47	136	144
730-830	90	51	120	156
745-845	94	57	103	149
800-900	116	58	95	163

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

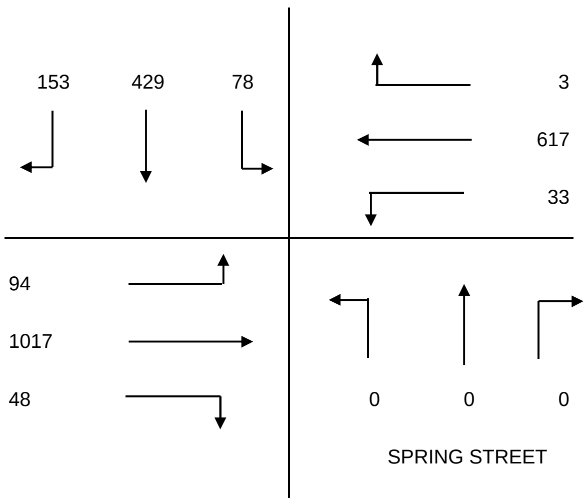
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 22, 2009
PERIOD: 4:00PM TO 6:00PM
INTERSECTION: N/S SPRING STREET
E/W FIRST STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
430-445	39	106	15	0	109	9	0	0	0	10	187	24	499
445-500	42	128	20	4	137	6	0	0	0	11	225	18	591
500-515	48	107	20	0	126	8	0	0	0	10	231	23	573
515-530	43	108	17	0	163	14	0	0	0	11	251	22	629
530-545	30	109	27	3	158	4	0	0	0	9	266	20	626
545-600	32	105	14	0	170	7	0	0	0	18	269	29	644
600-615	31	85	12	1	145	6	0	0	0	12	257	22	571
615-630	28	84	4	1	186	10	0	0	0	3	229	20	565
HOUR TOTALS													
430-530	172	449	72	4	535	37	0	0	0	42	894	87	2292
445-545	163	452	84	7	584	32	0	0	0	41	973	83	2419
500-600	153	429	78	3	617	33	0	0	0	48	1017	94	2472
515-615	136	407	70	4	636	31	0	0	0	50	1043	93	2470
530-630	121	383	57	5	659	27	0	0	0	42	1021	91	2406

PM PEAK HOUR
500-600

FIRST STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	30	13	32	27
415-430	31	21	29	17
430-445	28	33	62	24
445-500	21	18	31	29
500-515	30	39	58	30
515-530	23	22	41	30
530-545	31	9	28	18
545-600	16	11	23	14
HOUR TOTALS				
400-500	110	85	154	97
415-515	110	111	180	100
430-530	102	112	192	113
445-545	105	88	158	107
500-600	100	81	150	92

WILTEC

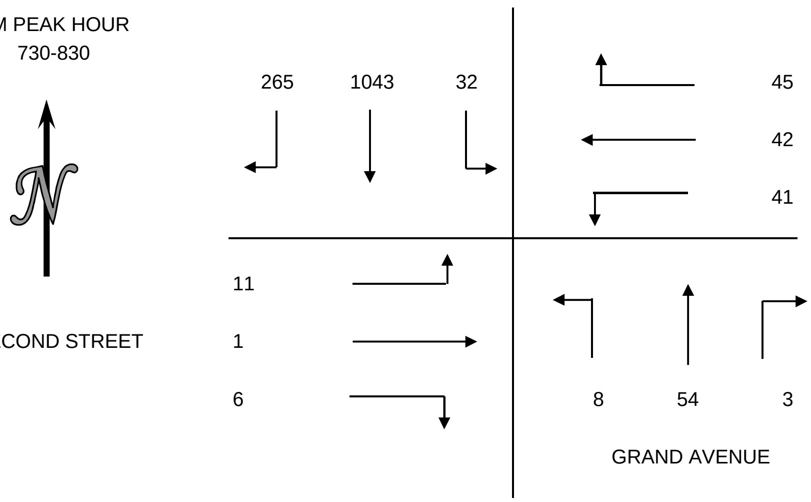
Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S GRAND AVENUE
E/W SECOND STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	63	182	5	9	20	4	0	15	1	2	0	0	301
715-730	98	212	7	19	17	5	0	8	0	3	2	0	371
730-745	81	233	8	16	13	5	0	15	1	0	0	4	376
745-800	62	264	5	7	10	12	1	14	2	2	0	1	380
800-815	53	251	8	10	8	13	1	11	2	0	0	2	359
815-830	69	295	11	12	11	11	1	14	3	4	1	4	436
830-845	40	269	16	7	10	4	2	9	1	1	1	6	366
845-900	63	279	1	4	13	12	0	12	3	1	0	1	389
HOUR TOTALS													
700-800	304	891	25	51	60	26	1	52	4	7	2	5	1428
715-815	294	960	28	52	48	35	2	48	5	5	2	7	1486
730-830	265	1043	32	45	42	41	3	54	8	6	1	11	1551
745-845	224	1079	40	36	39	40	5	48	8	7	2	13	1541
800-900	225	1094	36	33	42	40	4	46	9	6	2	13	1550

AM PEAK HOUR
730-830



SECOND STREET

PEDESTRIAN COUNTS PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	1	4	1	12
715-730	1	9	3	27
730-745	0	15	0	11
745-800	1	16	2	13
800-815	5	20	12	24
815-830	3	20	7	30
830-845	1	15	7	14
845-900	8	32	7	29
HOUR TOTALS				
700-800	3	44	6	63
715-815	7	60	17	75
730-830	9	71	21	78
745-845	10	71	28	81
800-900	17	87	33	97

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

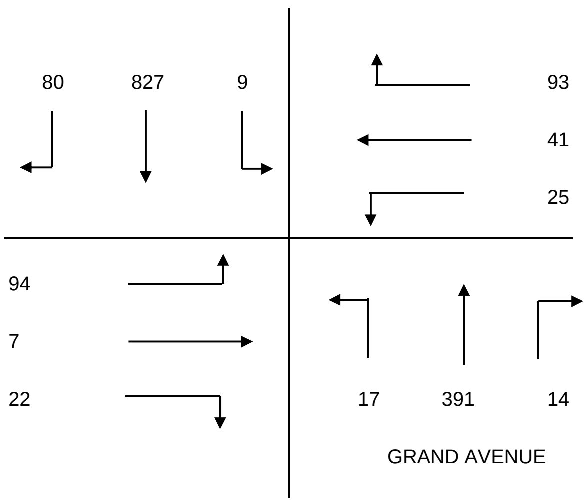
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S GRAND AVENUE
E/W SECOND STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
400-415	15	135	4	21	6	7	4	71	4	3	1	12	283
415-430	18	133	6	12	5	5	1	66	1	14	4	20	285
430-445	15	156	6	27	6	5	2	77	0	12	11	39	356
445-500	17	157	2	24	13	9	7	63	0	8	6	30	336
500-515	20	185	3	15	6	4	2	96	5	12	3	32	383
515-530	15	217	0	28	8	5	3	95	3	4	1	20	399
530-545	23	227	5	24	15	7	6	110	5	2	3	21	448
545-600	22	198	1	26	12	9	3	90	4	4	0	21	390
HOUR TOTALS													
400-500	65	581	18	84	30	26	14	277	5	37	22	101	1260
415-515	70	631	17	78	30	23	12	302	6	46	24	121	1360
430-530	67	715	11	94	33	23	14	331	8	36	21	121	1474
445-545	75	786	10	91	42	25	18	364	13	26	13	103	1566
500-600	80	827	9	93	41	25	14	391	17	22	7	94	1620

PM PEAK HOUR
500-600

SECOND STREET



GRAND AVENUE

PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	33	16	19	2
415-430	38	17	15	4
430-445	23	25	11	9
445-500	19	24	7	10
500-515	33	14	23	7
515-530	29	28	14	9
530-545	37	28	24	9
545-600	45	30	25	15
HOUR TOTALS				
400-500	113	82	52	25
415-515	113	80	56	30
430-530	104	91	55	35
445-545	118	94	68	35
500-600	144	100	86	40

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Hill Street

East/West 2nd Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Harvick

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	43	28	46	22
BIKES	3	2	1	1
BUSES	195	233	13	1

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	114	9.30	332	8.45	215	8.30	83	7.30
PM PK 15 MIN	205	5.15	246	4.45	167	5.15	91	5.45
AM PK HOUR	410	7.45	1221	8.15	802	8.00	258	7.00
PM PK HOUR	771	4.45	959	4.30	572	4.45	309	5.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	57	256	24	337	*7-8*	21	1031	66	1118	1455	38	0	63	0
8-9	73	277	50	400	*8-9*	19	1064	119	1202	1602	59	0	91	0
9-10	80	245	84	409	*9-10*	57	982	98	1137	1546	75	0	94	0
3-4	63	474	61	598	*3-4*	19	436	23	478	1076	5	1	100	0
4-5	59	596	46	701	*4-5*	29	802	30	861	1562	0	0	86	0
5-6	79	619	43	741	*5-6*	31	862	31	924	1665	0	0	85	0
TOTAL	411	2467	308	3186	TOTAL	176	5177	367	5720	8906	177	1	519	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	1	263	256	520	*7-8*	9	225	24	258	778	69	0	74	0
8-9	6	381	415	802	*8-9*	3	84	17	104	906	150	0	136	1
9-10	8	277	365	650	*9-10*	12	50	13	75	725	163	0	175	0
3-4	2	280	95	377	*3-4*	7	200	24	231	608	5	0	5	0
4-5	2	343	137	482	*4-5*	4	217	20	241	723	0	0	0	0
5-6	2	395	167	564	*5-6*	4	293	12	309	873	0	0	0	0
TOTAL	21	1939	1435	3395	TOTAL	39	1069	110	1218	4613	387	0	390	1

(Rev Oct 06)

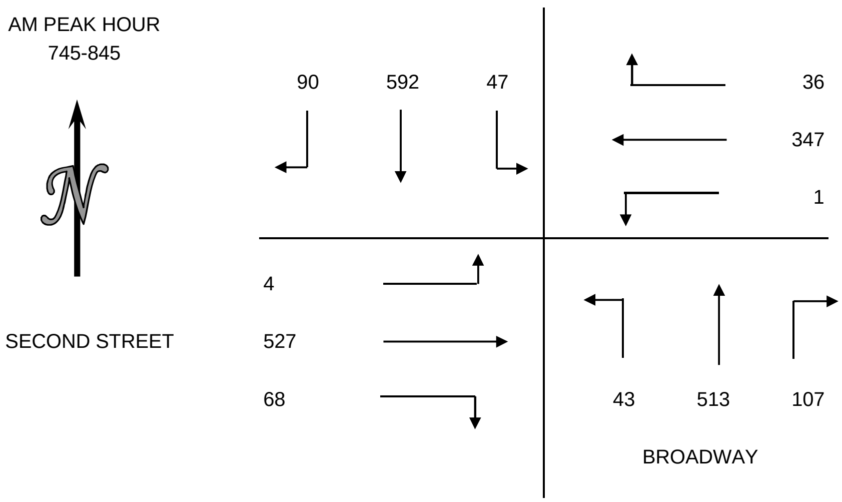
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 28, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S BROADWAY
E/W SECOND STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	10	126	8	2	44	2	16	68	12	8	81	0	377
715-730	13	119	5	7	58	0	17	97	11	8	104	0	439
730-745	16	132	15	1	63	0	8	118	10	8	115	3	489
745-800	21	149	11	6	108	0	18	115	16	18	141	0	603
800-815	25	150	11	8	90	1	20	121	6	11	126	1	570
815-830	27	171	12	14	80	0	40	155	14	15	140	1	669
830-845	17	122	13	8	69	0	29	122	7	24	120	2	533
845-900	18	126	21	10	69	0	29	104	12	23	118	4	534
HOUR TOTALS													
700-800	60	526	39	16	273	2	59	398	49	42	441	3	1908
715-815	75	550	42	22	319	1	63	451	43	45	486	4	2101
730-830	89	602	49	29	341	1	86	509	46	52	522	5	2331
745-845	90	592	47	36	347	1	107	513	43	68	527	4	2375
800-900	87	569	57	40	308	1	118	502	39	73	504	8	2306



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	2	6	14	8
715-730	7	14	16	9
730-745	9	19	11	18
745-800	23	34	25	31
800-815	18	31	20	14
815-830	7	31	35	15
830-845	12	58	24	8
845-900	11	82	49	14
HOUR TOTALS				
700-800	41	73	66	66
715-815	57	98	72	72
730-830	57	115	91	78
745-845	60	154	104	68
800-900	48	202	128	51

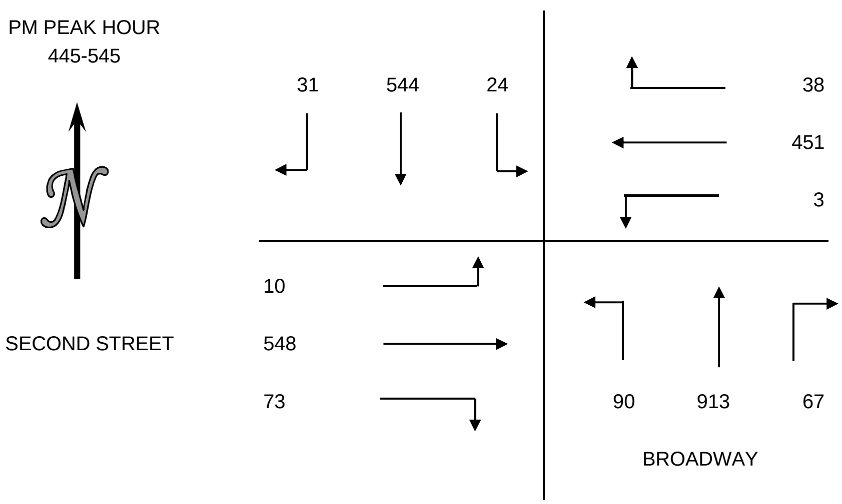
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 28, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S BROADWAY
E/W SECOND STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
400-415	5	156	6	8	96	3	17	175	10	17	113	4	610
415-430	5	133	6	6	94	0	14	180	23	21	110	2	594
430-445	9	149	2	6	97	0	19	202	18	23	116	2	643
445-500	5	146	2	7	98	0	17	224	30	23	133	0	685
500-515	14	123	7	13	114	0	20	235	24	15	153	1	719
515-530	12	147	8	8	113	1	11	232	11	14	136	4	697
530-545	0	128	7	10	126	2	19	222	25	21	126	5	691
545-600	7	119	3	11	105	0	17	225	21	14	114	2	638
HOUR TOTALS													
400-500	24	584	16	27	385	3	67	781	81	84	472	8	2532
415-515	33	551	17	32	403	0	70	841	95	82	512	5	2641
430-530	40	565	19	34	422	1	67	893	83	75	538	7	2744
445-545	31	544	24	38	451	3	67	913	90	73	548	10	2792
500-600	33	517	25	42	458	3	67	914	81	64	529	12	2745



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	7	28	36	33
415-430	14	31	34	18
430-445	20	36	34	40
445-500	9	20	34	12
500-515	8	47	33	23
515-530	6	21	23	15
530-545	10	24	32	14
545-600	8	14	15	13
HOUR TOTALS				
400-500	50	115	138	103
415-515	51	134	135	93
430-530	43	124	124	90
445-545	33	112	122	64
500-600	32	106	103	65

WILTEC

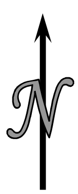
Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

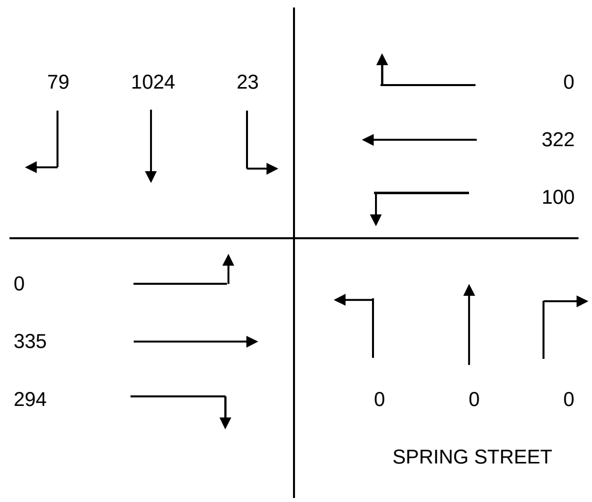
CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 28, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S SPRING STREET
E/W SECOND STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	6	166	9	0	56	12	0	0	0	40	63	0	352
715-730	12	190	6	0	46	14	0	0	0	56	73	0	397
730-745	12	228	3	0	76	16	0	0	0	54	80	0	469
745-800	17	238	2	0	92	16	0	0	0	62	90	0	517
800-815	15	230	3	0	96	20	0	0	0	72	82	0	518
815-830	19	253	4	0	76	28	0	0	0	77	95	0	552
830-845	24	265	5	0	73	25	0	0	0	72	82	0	546
845-900	21	276	11	0	77	27	0	0	0	73	76	0	561
HOUR TOTALS													
700-800	47	822	20	0	270	58	0	0	0	212	306	0	1735
715-815	56	886	14	0	310	66	0	0	0	244	325	0	1901
730-830	63	949	12	0	340	80	0	0	0	265	347	0	2056
745-845	75	986	14	0	337	89	0	0	0	283	349	0	2133
800-900	79	1024	23	0	322	100	0	0	0	294	335	0	2177

AM PEAK HOUR
800-900



SECOND STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	7	25	14	39
715-730	9	10	22	29
730-745	13	15	12	37
745-800	8	16	22	43
800-815	9	16	27	52
815-830	10	15	30	67
830-845	8	18	31	87
845-900	23	26	45	73
HOUR TOTALS				
700-800	37	66	70	148
715-815	39	57	83	161
730-830	40	62	91	199
745-845	35	65	110	249
800-900	50	75	133	279

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

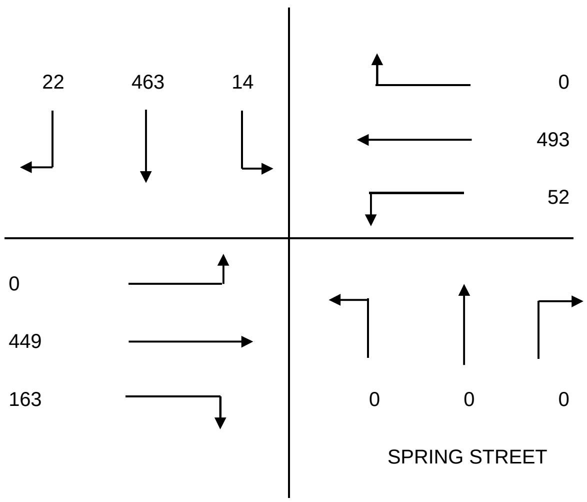
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY APRIL 28, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W SECOND STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	5	133	6	0	85	12	0	0	0	26	89	0	356
415-430	1	141	10	0	95	13	0	0	0	34	101	0	395
430-445	7	117	3	0	109	11	0	0	0	28	111	0	386
445-500	9	127	4	0	137	13	0	0	0	34	102	0	426
500-515	5	134	3	0	103	19	0	0	0	51	116	0	431
515-530	2	103	2	0	113	10	0	0	0	42	123	0	395
530-545	6	99	5	0	140	10	0	0	0	36	108	0	404
545-600	6	95	6	0	123	11	0	0	0	41	87	0	369
HOUR TOTALS													
400-500	22	518	23	0	426	49	0	0	0	122	403	0	1563
415-515	22	519	20	0	444	56	0	0	0	147	430	0	1638
430-530	23	481	12	0	462	53	0	0	0	155	452	0	1638
445-545	22	463	14	0	493	52	0	0	0	163	449	0	1656
500-600	19	431	16	0	479	50	0	0	0	170	434	0	1599

PM PEAK HOUR
445-545

SECOND STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	19	26	30	48
415-430	10	8	48	56
430-445	9	9	41	61
445-500	22	25	34	70
500-515	10	11	55	102
515-530	8	7	27	68
530-545	8	11	14	64
545-600	10	8	20	68
HOUR TOTALS				
400-500	60	68	153	235
415-515	51	53	178	289
430-530	49	52	157	301
445-545	48	54	130	304
500-600	36	37	116	302

WILTEC

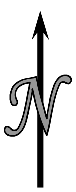
Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

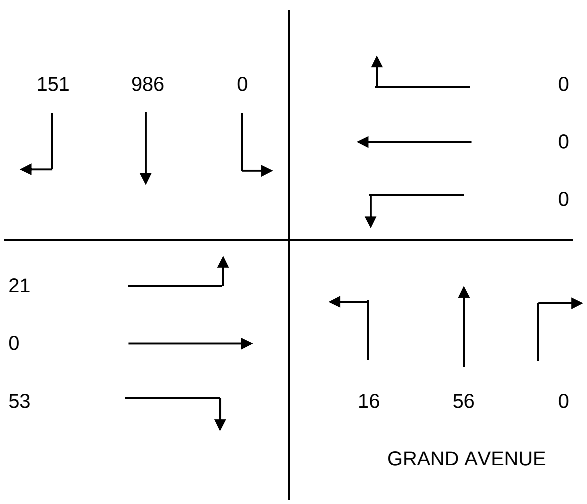
CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S GRAND AVENUE
E/W THIRD STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	15	173	0	0	0	0	0	15	3	9	0	2	217
715-730	20	172	0	0	0	0	0	10	1	7	0	2	212
730-745	21	217	0	0	0	0	0	12	1	14	0	4	269
745-800	31	233	0	0	0	0	0	17	4	12	0	2	299
800-815	39	228	0	0	0	0	0	16	5	14	0	5	307
815-830	39	238	0	0	0	0	0	11	1	9	0	8	306
830-845	40	254	0	0	0	0	0	15	6	20	0	3	338
845-900	33	266	0	0	0	0	0	14	4	10	0	5	332
HOUR TOTALS													
700-800	87	795	0	0	0	0	0	54	9	42	0	10	997
715-815	111	850	0	0	0	0	0	55	11	47	0	13	1087
730-830	130	916	0	0	0	0	0	56	11	49	0	19	1181
745-845	149	953	0	0	0	0	0	59	16	55	0	18	1250
800-900	151	986	0	0	0	0	0	56	16	53	0	21	1283

AM PEAK HOUR
800-900



THIRD STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	7	0	10	24
715-730	11	0	18	35
730-745	4	0	9	30
745-800	15	0	21	35
800-815	14	0	26	54
815-830	7	0	19	26
830-845	11	0	19	37
845-900	16	0	32	40
HOUR TOTALS				
700-800	37	0	58	124
715-815	44	0	74	154
730-830	40	0	75	145
745-845	47	0	85	152
800-900	48	0	96	157

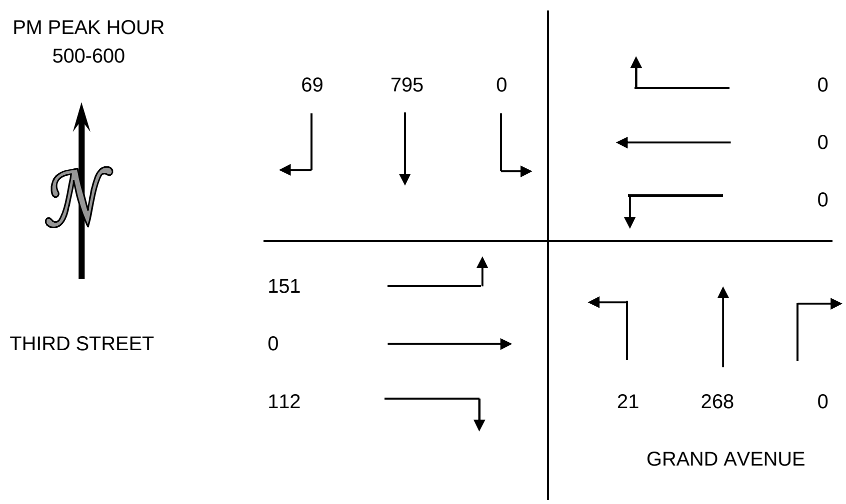
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S GRAND AVENUE
E/W THIRD STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	16	121	0	0	0	0	0	48	1	25	0	28	239
415-430	15	137	0	0	0	0	0	50	1	16	0	18	237
430-445	18	168	0	0	0	0	0	45	1	21	0	30	283
445-500	14	147	0	0	0	0	0	53	8	21	0	19	262
500-515	14	177	0	0	0	0	0	70	4	32	0	29	326
515-530	9	226	0	0	0	0	0	68	5	32	0	40	380
530-545	29	204	0	0	0	0	0	75	7	30	0	48	393
545-600	17	188	0	0	0	0	0	55	5	18	0	34	317
HOUR TOTALS													
400-500	63	573	0	0	0	0	0	196	11	83	0	95	1021
415-515	61	629	0	0	0	0	0	218	14	90	0	96	1108
430-530	55	718	0	0	0	0	0	236	18	106	0	118	1251
445-545	66	754	0	0	0	0	0	266	24	115	0	136	1361
500-600	69	795	0	0	0	0	0	268	21	112	0	151	1416



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	35	0	18	38
415-430	20	0	19	54
430-445	33	0	26	44
445-500	30	0	23	44
500-515	30	0	37	63
515-530	21	0	39	52
530-545	21	0	29	47
545-600	28	0	24	34
HOUR TOTALS				
400-500	118	0	86	180
415-515	113	0	105	205
430-530	114	0	125	203
445-545	102	0	128	206
500-600	100	0	129	196

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West 3rd Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Beltran

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	43	57	0	68
BIKES	77	51	52	55
BUSES	184	77	0	74

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	160	8.15	128	9.15	0	7.00	414	7.45
PM PK 15 MIN	146	4.15	108	5.00	0	3.00	350	4.00
AM PK HOUR	587	7.30	489	8.30	0	7.00	1631	7.00
PM PK HOUR	551	4.00	415	5.00	0	3.00	1301	5.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	78	427	0	505
8-9	112	455	0	567
9-10	84	386	0	470
3-4	90	386	0	476
4-5	133	418	0	551
5-6	114	381	0	495
TOTAL	611	2453	0	3064

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	271	152	423
8-9	0	314	156	470
9-10	0	318	150	468
3-4	0	269	105	374
4-5	0	193	85	278
5-6	0	305	110	415
TOTAL	0	1670	758	2428

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	928	62	0	61	0
8-9	1037	104	0	81	0
9-10	938	168	2	113	1
3-4	850	213	9	138	8
4-5	829	173	2	129	2
5-6	910	197	4	126	1
TOTAL	5492	917	17	648	12

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	14	1561	56	1631
8-9	24	1398	66	1488
9-10	38	1248	71	1357
3-4	47	1102	88	1237
4-5	38	1174	78	1290
5-6	30	1193	78	1301
TOTAL	191	7676	437	8304

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1631	55	0	88	0
8-9	1488	111	1	127	0
9-10	1357	151	3	172	3
3-4	1237	234	8	184	6
4-5	1290	190	2	175	3
5-6	1301	213	1	232	2
TOTAL	8304	954	15	978	14

(Rev Oct 06)

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Hill Street

East/West 3rd Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Lopez

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	31	49	0	127
BIKES	61	21	59	40
BUSES	198	236	0	97

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	121	8.15	357	9.00	0	7.00	453	7.00
PM PK 15 MIN	123	4.15	357	5.00	0	3.00	443	3.00
AM PK HOUR	459	7.45	1335	8.45	0	7.00	1731	7.00
PM PK HOUR	469	3.45	1339	4.30	0	3.00	1710	3.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	41	330	0	371	*7-8*	0	897	291	1188	1559	69	0	32	0
8-9	56	394	0	450	*8-9*	0	1043	202	1245	1695	73	0	57	0
9-10	55	314	0	369	*9-10*	0	1131	182	1313	1682	97	0	70	0
3-4	44	328	0	372	*3-4*	0	895	287	1182	1554	69	0	32	1
4-5	56	401	0	457	*4-5*	0	1054	198	1252	1709	73	0	57	1
5-6	53	325	0	378	*5-6*	0	1129	182	1311	1689	97	0	70	3
TOTAL	305	2092	0	2397	TOTAL	0	6149	1342	7491	9888	478	0	318	5

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	0	0	0	0	*7-8*	87	1560	84	1731	1731	58	0	59	0
8-9	0	0	0	0	*8-9*	95	1378	160	1633	1633	73	0	110	0
9-10	0	0	0	0	*9-10*	154	1165	135	1454	1454	121	0	183	0
3-4	0	0	0	0	*3-4*	81	1544	85	1710	1710	58	0	59	0
4-5	0	0	0	0	*4-5*	95	1368	165	1628	1628	73	0	110	3
5-6	0	0	0	0	*5-6*	149	1131	130	1410	1410	121	0	183	0
TOTAL	0	0	0	0	TOTAL	661	8146	759	9566	9566	504	0	704	3

(Rev Oct 06)

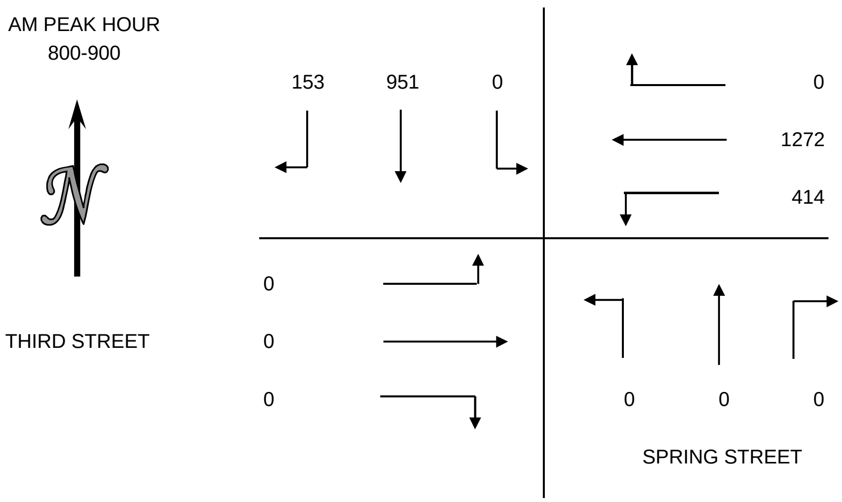
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S SPRING STREET
E/W THIRD STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	28	155	0	0	318	82	0	0	0	0	0	0	583
715-730	25	152	0	0	324	66	0	0	0	0	0	0	567
730-745	18	193	0	0	318	79	0	0	0	0	0	0	608
745-800	28	225	0	0	349	114	0	0	0	0	0	0	716
800-815	41	227	0	0	339	117	0	0	0	0	0	0	724
815-830	35	243	0	0	300	97	0	0	0	0	0	0	675
830-845	30	224	0	0	316	86	0	0	0	0	0	0	656
845-900	47	257	0	0	317	114	0	0	0	0	0	0	735
HOUR TOTALS													
700-800	99	725	0	0	1309	341	0	0	0	0	0	0	2474
715-815	112	797	0	0	1330	376	0	0	0	0	0	0	2615
730-830	122	888	0	0	1306	407	0	0	0	0	0	0	2723
745-845	134	919	0	0	1304	414	0	0	0	0	0	0	2771
800-900	153	951	0	0	1272	414	0	0	0	0	0	0	2790



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	16	16	9	19
715-730	17	16	21	21
730-745	6	24	28	19
745-800	21	29	16	38
800-815	15	24	17	28
815-830	14	23	18	21
830-845	16	34	18	22
845-900	14	28	21	28
HOUR TOTALS				
700-800	60	85	74	97
715-815	59	93	82	106
730-830	56	100	79	106
745-845	66	110	69	109
800-900	59	109	74	99

WILTEC

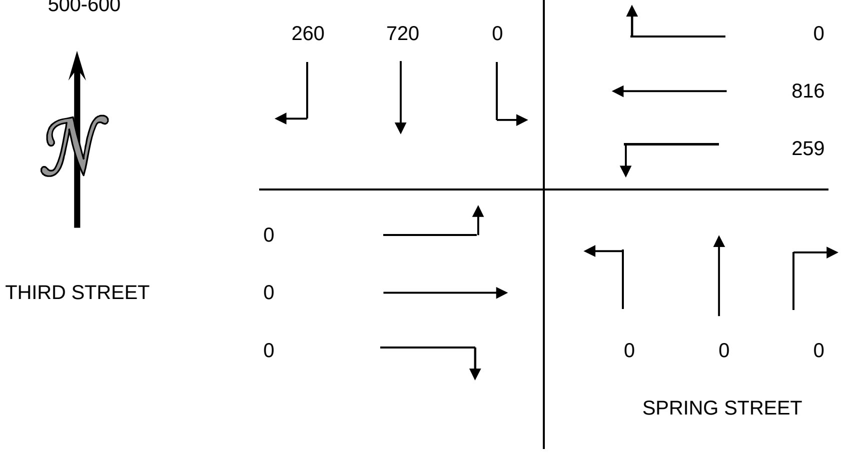
Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: THURSDAY APRIL 30, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W THIRD STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	63	149	0	0	228	50	0	0	0	0	0	0	490
415-430	47	142	0	0	226	54	0	0	0	0	0	0	469
430-445	71	148	0	0	227	46	0	0	0	0	0	0	492
445-500	50	171	0	0	200	46	0	0	0	0	0	0	467
500-515	90	226	0	0	220	58	0	0	0	0	0	0	594
515-530	61	169	0	0	168	62	0	0	0	0	0	0	460
530-545	54	167	0	0	206	74	0	0	0	0	0	0	501
545-600	55	158	0	0	222	65	0	0	0	0	0	0	500
HOUR TOTALS													
400-500	231	610	0	0	881	196	0	0	0	0	0	0	1918
415-515	258	687	0	0	873	204	0	0	0	0	0	0	2022
430-530	272	714	0	0	815	212	0	0	0	0	0	0	2013
445-545	255	733	0	0	794	240	0	0	0	0	0	0	2022
500-600	260	720	0	0	816	259	0	0	0	0	0	0	2055

PM PEAK HOUR
500-600



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	31	38	39	28
415-430	21	39	40	27
430-445	28	29	23	32
445-500	16	23	26	43
500-515	27	31	37	36
515-530	18	22	16	18
530-545	21	22	31	33
545-600	26	16	21	32
HOUR TOTALS				
400-500	96	129	128	130
415-515	92	122	126	138
430-530	89	105	102	129
445-545	82	98	110	130
500-600	92	91	105	119

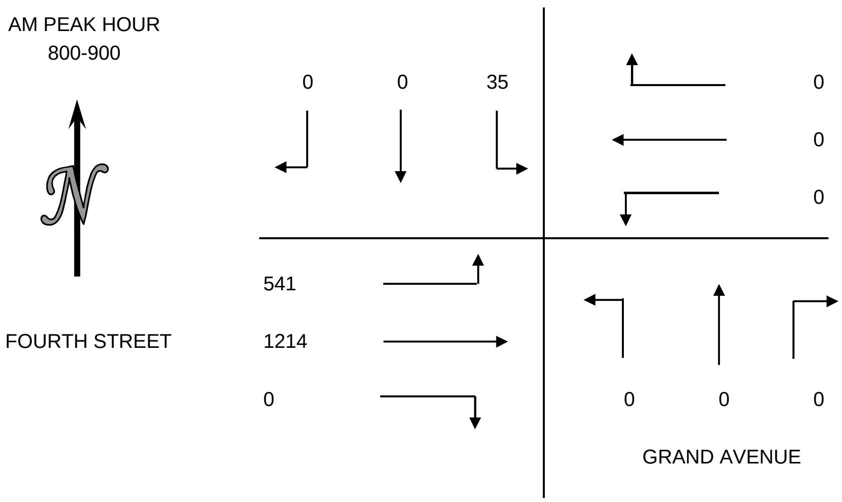
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S GRAND AVENUE
E/W FOURTH STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	0	0	3	0	0	0	0	0	0	0	211	70	284
715-730	0	0	9	0	0	0	0	0	0	0	229	85	323
730-745	0	0	8	0	0	0	0	0	0	0	250	85	343
745-800	0	0	7	0	0	0	0	0	0	0	234	84	325
800-815	0	0	10	0	0	0	0	0	0	0	324	129	463
815-830	0	0	9	0	0	0	0	0	0	0	335	147	491
830-845	0	0	5	0	0	0	0	0	0	0	279	121	405
845-900	0	0	11	0	0	0	0	0	0	0	276	144	431
HOUR TOTALS													
700-800	0	0	27	0	0	0	0	0	0	0	924	324	1275
715-815	0	0	34	0	0	0	0	0	0	0	1037	383	1454
730-830	0	0	34	0	0	0	0	0	0	0	1143	445	1622
745-845	0	0	31	0	0	0	0	0	0	0	1172	481	1684
800-900	0	0	35	0	0	0	0	0	0	0	1214	541	1790



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	0	0	0	0
715-730	1	0	0	0
730-745	0	0	0	0
745-800	0	0	0	0
800-815	0	0	0	0
815-830	0	0	0	1
830-845	1	0	0	0
845-900	1	0	0	2
HOUR TOTALS				
700-800	1	0	0	0
715-815	1	0	0	0
730-830	0	0	0	1
745-845	1	0	0	1
800-900	2	0	0	3

WILTEC

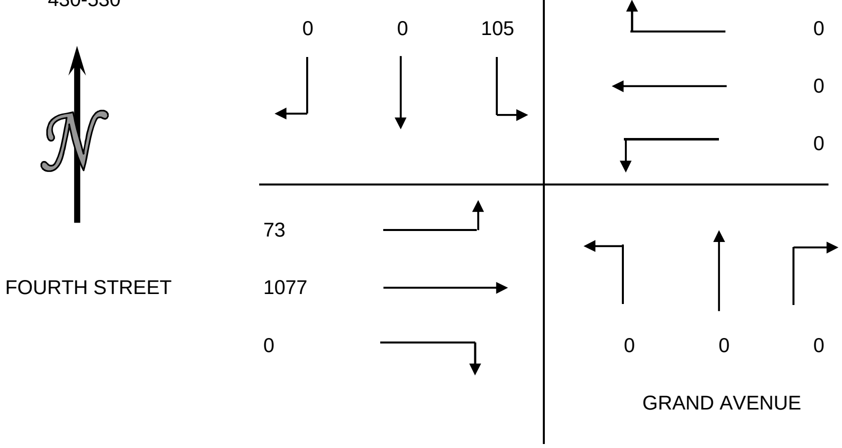
Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S GRAND AVENUE
E/W FOURTH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
400-415	0	0	21	0	0	0	0	0	0	0	234	16	271
415-430	0	0	21	0	0	0	0	0	0	0	226	16	263
430-445	0	0	34	0	0	0	0	0	0	0	244	14	292
445-500	0	0	25	0	0	0	0	0	0	0	253	23	301
500-515	0	0	20	0	0	0	0	0	0	0	275	14	309
515-530	0	0	26	0	0	0	0	0	0	0	305	22	353
530-545	0	0	28	0	0	0	0	0	0	0	235	21	284
545-600	0	0	17	0	0	0	0	0	0	0	229	16	262
HOUR TOTALS													
400-500	0	0	101	0	0	0	0	0	0	0	957	69	1127
415-515	0	0	100	0	0	0	0	0	0	0	998	67	1165
430-530	0	0	105	0	0	0	0	0	0	0	1077	73	1255
445-545	0	0	99	0	0	0	0	0	0	0	1068	80	1247
500-600	0	0	91	0	0	0	0	0	0	0	1044	73	1208

PM PEAK HOUR
430-530



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	1	0	0	0
415-430	1	0	0	2
430-445	2	1	0	2
445-500	2	0	0	0
500-515	1	0	0	0
515-530	1	0	0	1
530-545	3	1	0	1
545-600	1	1	0	0
HOUR TOTALS				
400-500	6	1	0	4
415-515	6	1	0	4
430-530	6	1	0	3
445-545	7	1	0	2
500-600	6	2	0	2

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Olive Street

East/West 4th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Harvick

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	84	28	98	0
BIKES	10	8	16	8
BUSES	391	5	38	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	175	9.30	66	8.45	314	8.45	0	7.00
PM PK 15 MIN	412	5.15	93	5.00	328	4.30	0	3.00
AM PK HOUR	631	9.00	246	8.30	1202	8.15	0	7.00
PM PK HOUR	1543	5.00	288	4.30	1262	4.30	0	3.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	456	59	515
8-9	0	495	98	593
9-10	0	519	112	631
3-4	0	599	160	759
4-5	0	886	270	1156
5-6	0	1240	303	1543
TOTAL	0	4195	1002	5197

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	34	143	0	177
8-9	44	198	0	242
9-10	50	179	0	229
3-4	50	137	0	187
4-5	72	183	0	255
5-6	85	199	0	284
TOTAL	335	1039	0	1374

TOTAL	**XING S/L**		**XING N/L**	
N-S	Ped	Sch	Ped	Sch
692	32	0	218	11
835	61	3	313	7
860	37	0	239	4
946	59	1	97	5
1411	61	0	138	1
1827	56	1	220	1
6571	306	5	1225	29

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	116	629	115	860
8-9	193	840	163	1196
9-10	115	762	179	1056
3-4	81	634	77	792
4-5	97	987	141	1225
5-6	92	939	134	1165
TOTAL	694	4791	809	6294

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

TOTAL	**XING W/L**		**XING E/L**	
E-W	Ped	Sch	Ped	Sch
860	40	1	35	1
1196	87	2	50	0
1056	38	1	53	1
792	62	3	36	2
1225	78	0	55	0
1165	93	2	45	0
6294	398	9	274	4

(Rev Oct 06)

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill Street

East/West 4th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Sanford

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	30	45	84	0
BIKES	80	81	22	12
BUSES	193	241	63	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	129	8.00	320	8.45	272	9.00	0	7.00
PM PK 15 MIN	200	5.15	253	5.15	374	5.30	0	3.00
AM PK HOUR	458	7.45	1226	8.45	1022	8.15	0	7.00
PM PK HOUR	745	5.00	964	4.30	1464	4.45	0	3.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	0	309	49	358	*7-8*	87	870	0	957	1315	52	0	60	1
8-9	0	388	70	458	*8-9*	140	1009	0	1149	1607	72	1	120	0
9-10	0	324	73	397	*9-10*	173	1053	0	1226	1623	53	0	125	0
3-4	0	408	71	479	*3-4*	104	459	0	563	1042	99	0	127	0
4-5	0	564	77	641	*4-5*	103	808	0	911	1552	124	0	122	0
5-6	0	656	89	745	*5-6*	87	869	0	956	1701	90	0	121	0
TOTAL	0	2649	429	3078	TOTAL	694	5068	0	5762	8840	490	1	675	1

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	93	540	82	715	*7-8*	0	0	0	0	715	70	1	76	0
8-9	134	727	133	994	*8-9*	0	0	0	0	994	113	0	151	1
9-10	94	737	148	979	*9-10*	0	0	0	0	979	85	0	189	3
3-4	72	700	73	845	*3-4*	0	0	0	0	845	124	0	200	4
4-5	37	1189	108	1334	*4-5*	0	0	0	0	1334	134	0	196	2
5-6	26	1292	111	1429	*5-6*	0	0	0	0	1429	121	0	199	0
TOTAL	456	5185	655	6296	TOTAL	0	0	0	0	6296	647	1	1011	10

(Rev Oct 06)

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West 4th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Harvick

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	65	60	100	0
BIKES	33	42	63	40
BUSES	218	92	57	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	166	8.00	102	9.30	235	8.45	0	7.00
PM PK 15 MIN	221	3.00	166	5.00	440	5.15	74	3.00
AM PK HOUR	582	7.45	359	9.00	911	8.45	0	7.00
PM PK HOUR	839	3.00	633	4.15	1698	4.45	232	3.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	460	62	522
8-9	0	492	83	575
9-10	0	432	87	519
3-4	398	133	308	839
4-5	365	157	262	784
5-6	336	176	242	754
TOTAL	1099	1850	1044	3993

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	1	252	0	253
8-9	4	303	0	307
9-10	1	358	0	359
3-4	274	31	269	574
4-5	287	24	298	609
5-6	280	26	254	560
TOTAL	847	994	821	2662

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	775	120	0	128	0
8-9	882	234	0	245	0
9-10	878	174	0	217	0
3-4	1413	4	5	68	16
4-5	1393	1	4	141	13
5-6	1314	1	1	99	5
TOTAL	6655	534	10	898	34

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	62	557	35	654
8-9	71	711	71	853
9-10	80	747	71	898
3-4	701	89	384	1174
4-5	1081	89	401	1571
5-6	1246	89	314	1649
TOTAL	3241	2282	1276	6799

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	232	232
4-5	0	0	220	220
5-6	0	0	221	221
TOTAL	0	0	673	673

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	654	73	0	116	0
8-9	853	133	0	188	0
9-10	898	170	0	257	0
3-4	1406	0	22	184	5
4-5	1791	0	26	175	4
5-6	1870	0	16	232	4
TOTAL	7472	376	64	1152	13

(Rev Oct 06)

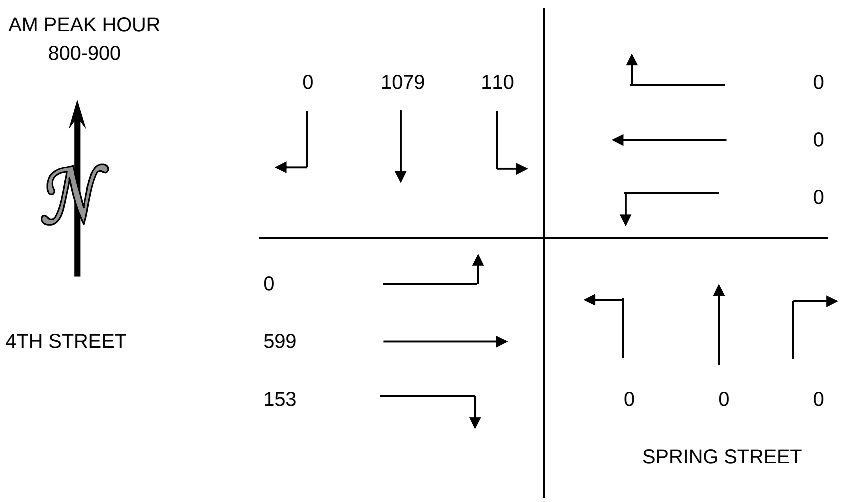
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY MAY 27, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S SPRING STREET
E/W 4TH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	0	173	21	0	0	0	0	0	0	23	98	0	315
715-730	0	188	18	0	0	0	0	0	0	22	105	0	333
730-745	0	230	20	0	0	0	0	0	0	27	122	0	399
745-800	0	280	25	0	0	0	0	0	0	31	137	0	473
800-815	0	256	27	0	0	0	0	0	0	25	155	0	463
815-830	0	261	30	0	0	0	0	0	0	32	134	0	457
830-845	0	245	26	0	0	0	0	0	0	46	161	0	478
845-900	0	317	27	0	0	0	0	0	0	50	149	0	543
HOUR TOTALS													
700-800	0	871	84	0	0	0	0	0	0	103	462	0	1520
715-815	0	954	90	0	0	0	0	0	0	105	519	0	1668
730-830	0	1027	102	0	0	0	0	0	0	115	548	0	1792
745-845	0	1042	108	0	0	0	0	0	0	134	587	0	1871
800-900	0	1079	110	0	0	0	0	0	0	153	599	0	1941



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	20	9	8	8
715-730	16	12	13	13
730-745	29	12	12	8
745-800	33	18	15	10
800-815	33	19	25	17
815-830	26	14	18	14
830-845	39	28	41	17
845-900	31	21	37	18
HOUR TOTALS				
700-800	98	51	48	39
715-815	111	61	65	48
730-830	121	63	70	49
745-845	131	79	99	58
800-900	129	82	121	66

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

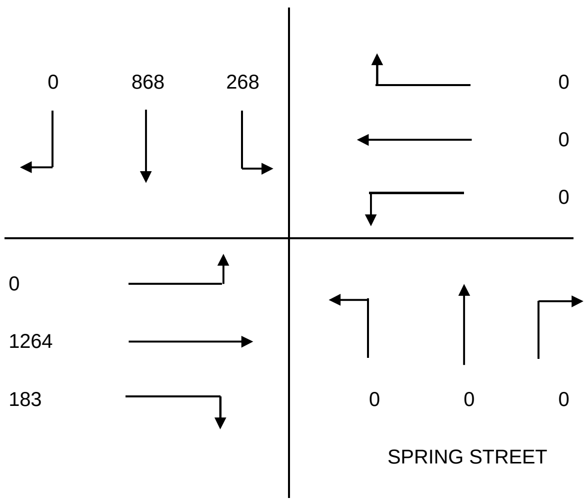
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: WEDNESDAY MAY 27, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S SPRING STREET
E/W 4TH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
400-415	0	165	55	0	0	0	0	0	0	35	251	0	506
415-430	0	175	44	0	0	0	0	0	0	37	255	0	511
430-445	0	219	69	0	0	0	0	0	0	48	316	0	652
445-500	0	194	57	0	0	0	0	0	0	43	275	0	569
500-515	0	239	85	0	0	0	0	0	0	52	333	0	709
515-530	0	216	57	0	0	0	0	0	0	40	340	0	653
530-545	0	205	64	0	0	0	0	0	0	38	320	0	627
545-600	0	152	42	0	0	0	0	0	0	30	238	0	462
HOUR TOTALS													
400-500	0	753	225	0	0	0	0	0	0	163	1097	0	2238
415-515	0	827	255	0	0	0	0	0	0	180	1179	0	2441
430-530	0	868	268	0	0	0	0	0	0	183	1264	0	2583
445-545	0	854	263	0	0	0	0	0	0	173	1268	0	2558
500-600	0	812	248	0	0	0	0	0	0	160	1231	0	2451

PM PEAK HOUR
430-530

4TH STREET



SPRING STREET

PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	43	36	39	12
415-430	21	32	50	10
430-445	15	43	41	14
445-500	50	24	30	17
500-515	45	24	45	14
515-530	32	19	43	4
530-545	40	33	43	12
545-600	17	15	26	4
HOUR TOTALS				
400-500	129	135	160	53
415-515	131	123	166	55
430-530	142	110	159	49
445-545	167	100	161	47
500-600	134	91	157	34

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Grand Avenue

East/West 5th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Beltran

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	83	0	188
BIKES	14	34	23	11
BUSES	0	441	0	489

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	7.00	242	9.00	0	7.00	484	7.45
PM PK 15 MIN	0	3.00	273	5.15	0	3.00	497	5.30
AM PK HOUR	0	7.00	918	8.15	0	7.00	1764	7.30
PM PK HOUR	0	3.00	1011	4.45	0	3.00	1897	4.45

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	540	161	701
8-9	0	723	178	901
9-10	0	687	198	885
3-4	0	452	174	626
4-5	0	678	220	898
5-6	0	777	226	1003
TOTAL	0	3857	1157	5014

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	701	180	0	284	0
8-9	901	199	0	404	1
9-10	885	169	0	347	2
3-4	626	298	1	318	1
4-5	898	350	0	348	0
5-6	1003	416	7	443	2
TOTAL	5014	1612	8	2144	6

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	256	1282	164	1702
8-9	359	1157	199	1715
9-10	367	966	180	1513
3-4	234	1090	118	1442
4-5	287	1198	152	1637
5-6	376	1274	247	1897
TOTAL	1879	6967	1060	9906

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1702	260	2	127	0
8-9	1715	283	0	164	5
9-10	1513	264	0	181	4
3-4	1442	252	2	174	5
4-5	1637	285	18	166	0
5-6	1897	285	13	161	3
TOTAL	9906	1629	35	973	17

(Rev Oct 06)

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Olive Street

East/West 5th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Ramirez

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	131	50	0	140
BIKES	22	11	33	37
BUSES	242	8	0	208

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	290	9.30	67	9.45	0	7.00	384	7.45
PM PK 15 MIN	456	5.45	113	4.45	0	3.00	285	5.30
AM PK HOUR	1025	8.45	243	9.00	0	7.00	1412	7.15
PM PK HOUR	1754	5.00	416	4.30	0	3.00	1011	5.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	307	488	0	795	*7-8*	0	0	152	152	947	202	0	334	2
8-9	352	591	0	943	*8-9*	0	0	178	178	1121	279	1	438	2
9-10	389	615	0	1004	*9-10*	0	0	243	243	1247	254	1	328	2
3-4	375	596	0	971	*3-4*	0	0	295	295	1266	291	12	329	9
4-5	427	873	0	1300	*4-5*	0	0	389	389	1689	414	3	452	7
5-6	557	1197	0	1754	*5-6*	0	0	352	352	2106	498	24	492	3
TOTAL	2407	4360	0	6767	TOTAL	0	0	1609	1609	8376	1938	41	2373	25

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	0	0	0	0	*7-8*	0	1320	78	1398	1398	80	0	88	2
8-9	0	0	0	0	*8-9*	0	1219	105	1324	1324	184	0	138	1
9-10	0	0	0	0	*9-10*	0	945	118	1063	1063	156	0	103	5
3-4	0	0	0	0	*3-4*	0	668	38	706	706	99	1	107	9
4-5	0	0	0	0	*4-5*	0	763	41	804	804	115	0	158	3
5-6	0	0	0	0	*5-6*	0	934	77	1011	1011	97	0	218	0
TOTAL	0	0	0	0	TOTAL	0	5849	457	6306	6306	731	1	812	20

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Hill Street

East/West 5th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Sterig

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	31	51	0	126
BIKES	67	70	31	78
BUSES	205	237	0	313

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	110	8.00	317	8.45	0	7.00	406	7.45
PM PK 15 MIN	188	5.15	246	5.00	0	3.00	264	5.45
AM PK HOUR	424	7.45	1163	8.45	0	7.00	1489	7.15
PM PK HOUR	698	5.00	960	4.30	0	3.00	998	5.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	35	297	0	332
8-9	56	362	0	418
9-10	59	308	0	367
3-4	65	406	0	471
4-5	60	536	0	596
5-6	71	627	0	698
TOTAL	346	2536	0	2882

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	771	178	949
8-9	0	915	224	1139
9-10	0	906	250	1156
3-4	0	427	116	543
4-5	0	764	136	900
5-6	0	792	150	942
TOTAL	0	4575	1054	5629

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1281	498	0	313	1
8-9	1557	587	1	389	1
9-10	1523	485	0	339	0
3-4	1014	584	0	306	0
4-5	1496	761	2	360	0
5-6	1640	770	0	388	1
TOTAL	8511	3685	3	2095	3

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	42	1358	73	1473
8-9	80	1226	85	1391
9-10	85	924	76	1085
3-4	56	608	75	739
4-5	67	588	120	775
5-6	83	779	136	998
TOTAL	413	5483	565	6461

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1473	262	0	259	1
8-9	1391	308	1	343	0
9-10	1085	297	0	350	1
3-4	739	305	0	284	0
4-5	775	313	2	337	0
5-6	998	287	3	348	3
TOTAL	6461	1772	6	1921	5

(Rev Oct 06)

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West 5th Street

Day: WEDNESDAY **Date:** October 8, 2014 **Weather:** Clear

Hours: 7-10AM 3-6PM **Staff:** Lopez

School Day: Yes **District:** CENTRAL I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	70	98	0	132
BIKES	47	35	49	49
BUSES	222	93	0	309

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	153	8.45	110	9.30	0	7.00	386	7.45
PM PK 15 MIN	155	4.00	103	3.15	0	3.00	254	5.45
AM PK HOUR	570	8.00	399	9.00	0	7.00	1396	7.30
PM PK HOUR	557	3.30	386	4.00	0	3.00	962	5.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	27	493	0	520
8-9	40	530	0	570
9-10	26	488	0	514
3-4	40	494	0	534
4-5	39	479	0	518
5-6	43	412	0	455
TOTAL	215	2896	0	3111

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	224	63	287
8-9	0	269	92	361
9-10	0	299	100	399
3-4	0	285	78	363
4-5	0	305	81	386
5-6	0	296	59	355
TOTAL	0	1678	473	2151

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	807	355	0	260	0
8-9	931	475	0	328	0
9-10	913	475	0	425	0
3-4	897	544	6	449	18
4-5	904	649	6	470	29
5-6	810	691	7	442	16
TOTAL	5262	3189	19	2374	63

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
3-4	0	0	0	0
4-5	0	0	0	0
5-6	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	19	1293	46	1358
8-9	21	1214	67	1302
9-10	33	923	73	1029
3-4	25	599	38	662
4-5	32	639	57	728
5-6	39	862	61	962
TOTAL	169	5530	342	6041

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1358	173	0	205	0
8-9	1302	224	0	291	0
9-10	1029	294	0	355	0
3-4	662	559	17	464	13
4-5	728	578	21	485	13
5-6	962	542	6	540	7
TOTAL	6041	2370	44	2340	33

(Rev Oct 06)

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

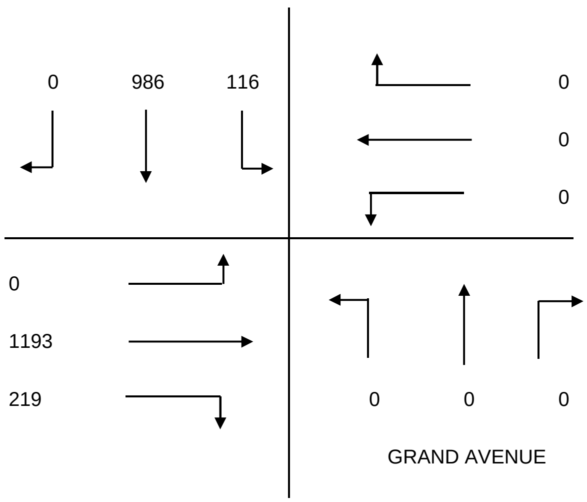
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S GRAND AVENUE
E/W SIXTH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	0	173	17	0	0	0	0	0	0	44	245	0	479
715-730	0	171	21	0	0	0	0	0	0	39	219	0	450
730-745	0	201	22	0	0	0	0	0	0	41	263	0	527
745-800	0	225	26	0	0	0	0	0	0	51	291	0	593
800-815	0	263	23	0	0	0	0	0	0	56	296	0	638
815-830	0	245	35	0	0	0	0	0	0	57	314	0	651
830-845	0	253	32	0	0	0	0	0	0	55	292	0	632
845-900	0	220	39	0	0	0	0	0	0	55	270	0	584
HOUR TOTALS													
700-800	0	770	86	0	0	0	0	0	0	175	1018	0	2049
715-815	0	860	92	0	0	0	0	0	0	187	1069	0	2208
730-830	0	934	106	0	0	0	0	0	0	205	1164	0	2409
745-845	0	986	116	0	0	0	0	0	0	219	1193	0	2514
800-900	0	981	129	0	0	0	0	0	0	223	1172	0	2505

AM PEAK HOUR
745-845

SIXTH STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	43	20	25	41
715-730	53	27	27	45
730-745	53	28	45	52
745-800	53	28	47	58
800-815	62	34	59	57
815-830	57	47	76	96
830-845	61	42	54	55
845-900	81	50	72	107
HOUR TOTALS				
700-800	202	103	144	196
715-815	221	117	178	212
730-830	225	137	227	263
745-845	233	151	236	266
800-900	261	173	261	315

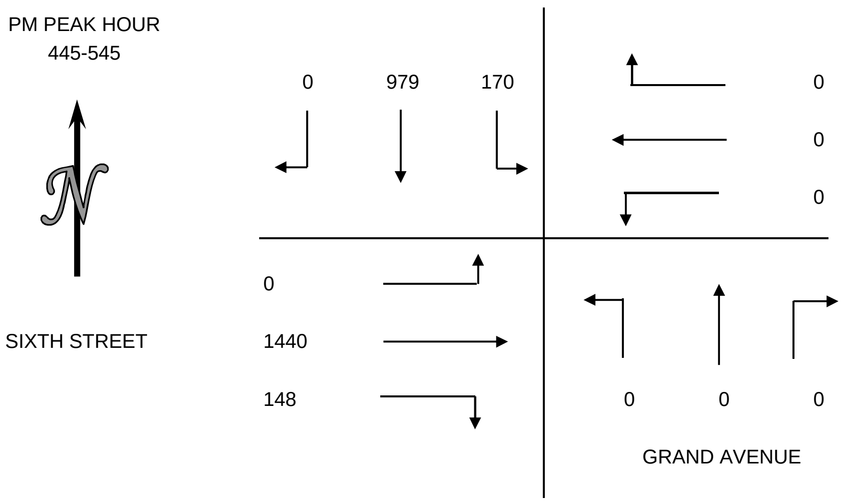
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S GRAND AVENUE
E/W SIXTH STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	0	180	35	0	0	0	0	0	0	39	318	0	572
415-430	0	174	25	0	0	0	0	0	0	30	304	0	533
430-445	0	229	34	0	0	0	0	0	0	24	313	0	600
445-500	0	229	60	0	0	0	0	0	0	49	347	0	685
500-515	0	255	38	0	0	0	0	0	0	27	378	0	698
515-530	0	255	40	0	0	0	0	0	0	44	387	0	726
530-545	0	240	32	0	0	0	0	0	0	28	328	0	628
545-600	0	205	28	0	0	0	0	0	0	31	346	0	610
HOUR TOTALS													
400-500	0	812	154	0	0	0	0	0	0	142	1282	0	2390
415-515	0	887	157	0	0	0	0	0	0	130	1342	0	2516
430-530	0	968	172	0	0	0	0	0	0	144	1425	0	2709
445-545	0	979	170	0	0	0	0	0	0	148	1440	0	2737
500-600	0	955	138	0	0	0	0	0	0	130	1439	0	2662



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	89	47	86	63
415-430	69	36	77	51
430-445	68	54	74	65
445-500	84	47	105	59
500-515	101	56	83	112
515-530	54	40	69	61
530-545	72	48	92	71
545-600	60	36	59	62
HOUR TOTALS				
400-500	310	184	342	238
415-515	322	193	339	287
430-530	307	197	331	297
445-545	311	191	349	303
500-600	287	180	303	306

WILTEC

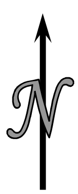
Phone: (626) 564-1944   Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

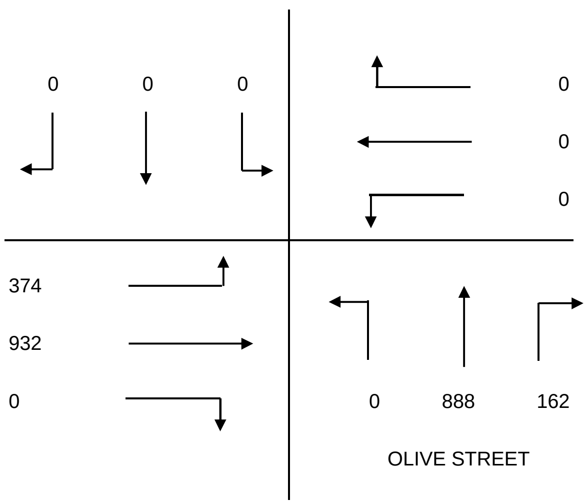
CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S OLIVE STREET
E/W SIXTH STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
700-715	0	0	0	0	0	0	24	104	0	0	182	58	368
715-730	0	0	0	0	0	0	22	148	0	0	179	45	394
730-745	0	0	0	0	0	0	23	160	0	0	208	68	459
745-800	0	0	0	0	0	0	29	197	0	0	261	87	574
800-815	0	0	0	0	0	0	31	224	0	0	249	83	587
815-830	0	0	0	0	0	0	41	237	0	0	244	104	626
830-845	0	0	0	0	0	0	39	208	0	0	219	100	566
845-900	0	0	0	0	0	0	51	219	0	0	220	87	577
HOUR TOTALS													
700-800	0	0	0	0	0	0	98	609	0	0	830	258	1795
715-815	0	0	0	0	0	0	105	729	0	0	897	283	2014
730-830	0	0	0	0	0	0	124	818	0	0	962	342	2246
745-845	0	0	0	0	0	0	140	866	0	0	973	374	2353
800-900	0	0	0	0	0	0	162	888	0	0	932	374	2356

AM PEAK HOUR
800-900



SIXTH STREET



OLIVE STREET

PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	11	19	30	28
715-730	21	44	36	24
730-745	36	55	52	27
745-800	39	66	69	23
800-815	50	63	54	40
815-830	38	64	90	35
830-845	63	75	75	46
845-900	75	72	116	38
HOUR TOTALS				
700-800	107	184	187	102
715-815	146	228	211	114
730-830	163	248	265	125
745-845	190	268	288	144
800-900	226	274	335	159

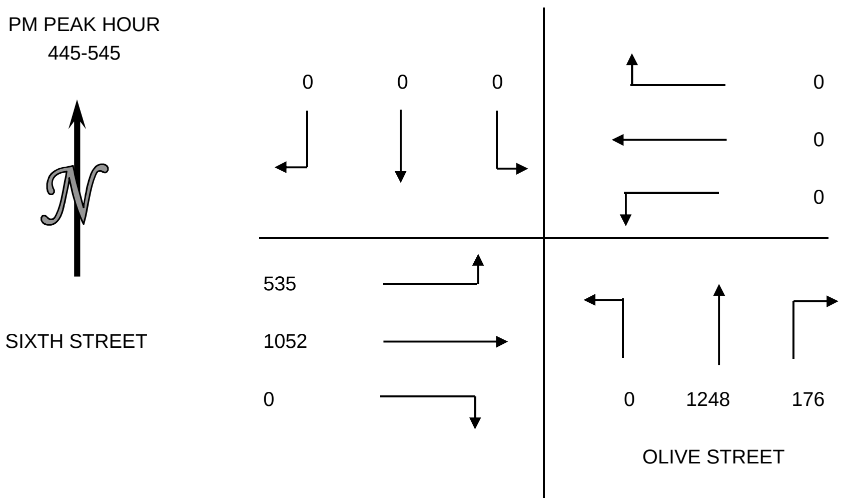
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT:	INTUEOR
PROJECT:	DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:	TUESDAY MAY 5, 2009
PERIOD:	4:00 PM TO 6:00 PM
INTERSECTION: N/S	OLIVE STREET
E/W	SIXTH STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	0	0	0	0	0	0	35	295	0	0	244	90	664
415-430	0	0	0	0	0	0	28	276	0	0	257	95	656
430-445	0	0	0	0	0	0	38	281	0	0	226	105	650
445-500	0	0	0	0	0	0	31	264	0	0	279	127	701
500-515	0	0	0	0	0	0	52	306	0	0	262	147	767
515-530	0	0	0	0	0	0	43	327	0	0	276	134	780
530-545	0	0	0	0	0	0	50	351	0	0	235	127	763
545-600	0	0	0	0	0	0	34	302	0	0	217	126	679
HOUR TOTALS													
400-500	0	0	0	0	0	0	132	1116	0	0	1006	417	2671
415-515	0	0	0	0	0	0	149	1127	0	0	1024	474	2774
430-530	0	0	0	0	0	0	164	1178	0	0	1043	513	2898
445-545	0	0	0	0	0	0	176	1248	0	0	1052	535	3011
500-600	0	0	0	0	0	0	179	1286	0	0	990	534	2989



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	66	64	133	74
415-430	92	48	34	116
430-445	69	61	115	30
445-500	76	52	97	55
500-515	105	68	112	53
515-530	87	64	100	75
530-545	65	52	97	53
545-600	68	44	75	33
HOUR TOTALS				
400-500	303	225	379	275
415-515	342	229	358	254
430-530	337	245	424	213
445-545	333	236	406	236
500-600	325	228	384	214

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Hill St and 6th St , City of Los Angeles

Date: 10/11/2011

Day: Tuesday

Project #: CA11_5388_004

Hill St

6th St

N

AM Peak Hour	845 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

CONTROL: Signalized

Southbound Approach

	Right	Thru	Left	Departing
Lanes	0	2	1	
AM	0	752	128	317
NOON	0	0	0	0
PM	0	685	79	658

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	0
Departing	903	0	1149	

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		0	0	0
Left	0	48	0	13
Thru	4	693	0	975
Right	0	173	0	132

Northbound Approach

	Departing	Left	Thru	Right
AM	925	0	269	82
NOON	0	0	0	0
PM	817	0	645	95
Lanes		0	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	880	317
North Leg	NOON	0	0
North Leg	PM	764	658
East Leg	AM	0	903
East Leg	NOON	0	0
East Leg	PM	0	1149
West Leg	AM	914	0
West Leg	NOON	0	0
West Leg	PM	1120	0
South Leg	AM	351	925
South Leg	NOON	0	0
South Leg	PM	740	817

Total Volume Per Leg

	AM	NOON	PM
North Leg	1197	0	1422
East Leg	903	0	1149
West Leg	914	0	1120
South Leg	1276	0	1557

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Broadway Ave and 6th St , City of Los Angeles

Date: 10/11/2011

Day: Tuesday

Project #: CA11_5388_010

N

Broadway Ave

6th St

Peak Hour Summary

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Southbound Approach

	Left	Through	Right	Departing (northbound)
Lanes	0	2	1	
AM	0	407	21	633
NOON	0	0	0	0
PM	0	495	32	886

Eastbound Approach

	Lanes	AM	NOON	PM
Departing (westbound)		0	0	0
Left	0	66	0	135
Through	4	764	0	922
Right	0	57	0	113

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
Departing (eastbound)	841	0	1042	

CONTROL

Signalized

Northbound Approach

	Departing (southbound)	Left	Through	Right
AM	464	0	567	56
NOON	0	0	0	0
PM	608	0	751	88
Lanes		0	3	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	428	633
NOON	0	0
PM	527	886

West Leg

	AM	NOON	PM
Out	0	0	0
In	887	0	1170

East Leg

	AM	NOON	PM
In	0	0	0
Out	841	0	1042

South Leg

	Out	In
AM	464	623
NOON	0	0
PM	608	839

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1061	0	1413
West Leg	887	0	1170
East Leg	841	0	1042
South Leg	1087	0	1447

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Spring St and 6th St , City of Los Angeles

Date: 10/11/2011

Day: Tuesday

Project #: CA11_5388_020

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Spring St

6th St

CONTROL: Signalized

Peak Hour Summary

Southbound Approach

	Right	Through	Left	Northbound departures
Lanes	0	5	0	
AM	0	1077	90	0
NOON	0	0	0	0
PM	0	873	199	0

Eastbound Approach

	Lanes	AM	NOON	PM
Westbound departures		0	0	0
Left	0	0	0	0
Through	4	756	0	956
Right	0	68	0	118

Westbound Approach

	AM	NOON	PM	Lanes
Right	0	0	0	0
Through	0	0	0	0
Left	0	0	0	0
Eastbound departures	846	0	1155	

Northbound Approach

	Southbound departures	Left	Through	Right
AM	1145	0	0	0
NOON	0	0	0	0
PM	991	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	1167	0
North Leg	NOON	0	0
North Leg	PM	1072	0
East Leg	AM	0	846
East Leg	NOON	0	0
East Leg	PM	0	1155
West Leg	AM	0	824
West Leg	NOON	0	0
West Leg	PM	0	1074
South Leg	AM	1145	0
South Leg	NOON	0	0
South Leg	PM	991	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1167	0	1072
East Leg	846	0	1155
West Leg	824	0	1074
South Leg	1145	0	991

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

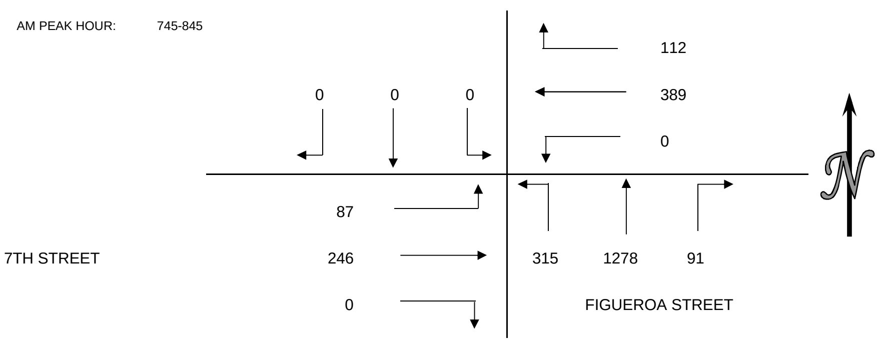
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	0	0	16	103	0	11	300	42	0	41	10	523
715-730	0	0	0	25	94	0	16	358	42	0	52	15	602
730-745	0	0	0	23	104	0	16	386	51	0	46	18	644
745-800	0	0	0	28	93	0	18	344	75	0	63	16	637
800-815	0	0	0	20	93	0	23	331	79	0	64	16	626
815-830	0	0	0	32	92	0	20	298	87	0	55	25	609
830-845	0	0	0	32	111	0	30	305	74	0	64	30	646
845-900	0	0	0	29	82	0	34	303	61	0	55	21	585
900-915	0	0	0	31	77	0	32	266	85	0	55	16	562
915-930	0	0	0	42	80	0	31	278	50	0	54	12	547
930-945	0	0	0	39	97	0	31	276	57	0	55	16	571
945-1000	0	0	0	43	94	0	38	279	51	0	59	17	581
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	0	0	0	92	394	0	61	1388	210	0	202	59	2406
715-815	0	0	0	96	384	0	73	1419	247	0	225	65	2509
730-830	0	0	0	103	382	0	77	1359	292	0	228	75	2516
745-845	0	0	0	112	389	0	91	1278	315	0	246	87	2518
800-900	0	0	0	113	378	0	107	1237	301	0	238	92	2466
815-915	0	0	0	124	362	0	116	1172	307	0	229	92	2402
830-930	0	0	0	134	350	0	127	1152	270	0	228	79	2340
845-945	0	0	0	141	336	0	128	1123	253	0	219	65	2265
900-1000	0	0	0	155	348	0	132	1099	243	0	223	61	2261

AM PEAK HOUR: 745-845



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	211	237	0	448
715-730	3	235	232	0	470
730-745	0	303	318	0	621
745-800	0	309	288	0	597
800-815	1	320	271	0	592
815-830	0	339	361	0	700
830-845	0	312	241	0	553
854-900	0	286	248	0	534
900-915	0	240	239	0	479
915-930	3	226	170	0	399
930-945	6	231	233	0	470
945-1000	2	187	176	0	365
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	3	1058	1075	0	2136
715-815	4	1167	1109	0	2280
730-830	1	1271	1238	0	2510
745-845	1	1280	1161	0	2442
800-900	1	1257	1121	0	2379
815-915	0	1177	1089	0	2266
830-930	3	1064	898	0	1965
845-945	9	983	890	0	1882
900-1000	11	884	818	0	1713

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	4	17	0	21
715-730	1	5	18	0	24
730-745	2	14	19	0	35
745-800	3	6	20	0	29
800-815	2	9	22	1	34
815-830	2	4	14	0	20
830-845	3	5	9	1	18
845-900	3	4	15	0	22
900-915	0	2	6	0	8
915-930	2	7	8	0	17
930-945	0	2	11	0	13
945-1000	2	7	7	0	16
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	6	29	74	0	109
715-815	8	34	79	1	122
730-830	9	33	75	1	118
745-845	10	24	65	2	101
800-900	10	22	60	2	94
815-915	8	15	44	1	68
830-930	8	18	38	1	65
845-945	5	15	40	0	60
900-1000	4	18	32	0	54

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

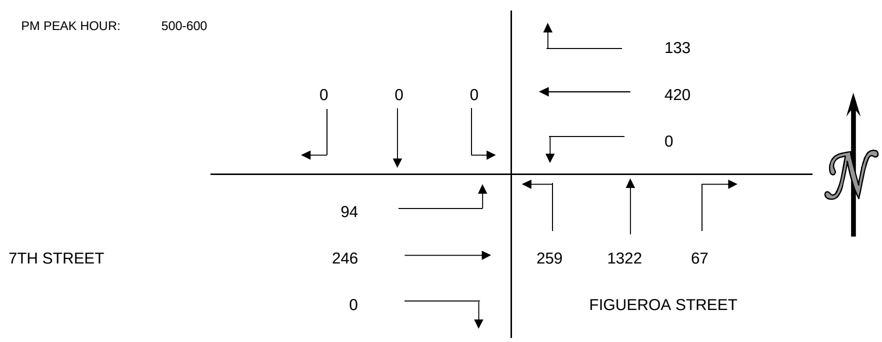
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	0	0	0	53	89	0	36	291	48	0	43	28	588
315-330	0	0	0	39	67	0	32	306	28	0	45	31	548
330-345	0	0	0	46	90	0	39	354	49	0	71	23	672
345-400	0	0	0	33	88	0	30	313	47	0	58	32	601
400-415	0	0	0	36	71	0	26	337	53	0	54	23	600
415-430	0	0	0	21	90	0	22	354	46	0	70	24	627
430-445	0	0	0	27	91	0	21	367	59	0	69	34	668
445-500	0	0	0	27	93	0	21	316	56	0	69	18	600
500-515	0	0	0	31	101	0	14	317	67	0	62	20	612
515-530	0	0	0	24	114	0	22	326	63	0	68	24	641
530-545	0	0	0	35	113	0	20	338	61	0	53	26	646
545-600	0	0	0	43	92	0	11	341	68	0	63	24	642
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	0	0	0	171	334	0	137	1264	172	0	217	114	2409
315-415	0	0	0	154	316	0	127	1310	177	0	228	109	2421
330-430	0	0	0	136	339	0	117	1358	195	0	253	102	2500
345-445	0	0	0	117	340	0	99	1371	205	0	251	113	2496
400-500	0	0	0	111	345	0	90	1374	214	0	262	99	2495
415-515	0	0	0	106	375	0	78	1354	228	0	270	96	2507
430-530	0	0	0	109	399	0	78	1326	245	0	268	96	2521
445-545	0	0	0	117	421	0	77	1297	247	0	252	88	2499
500-600	0	0	0	133	420	0	67	1322	259	0	246	94	2541

PM PEAK HOUR: 500-600



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	0	222	302	0	524
315-330	0	255	287	0	542
330-345	0	254	245	0	499
345-400	1	272	311	0	584
400-415	0	341	347	0	688
415-430	8	318	342	0	668
430-445	0	424	336	0	760
445-500	2	400	287	0	689
500-515	0	512	499	0	1011
515-530	0	412	335	0	747
530-545	0	352	378	0	730
545-600	1	371	342	0	714
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	1	1003	1145	0	2149
315-415	1	1122	1190	0	2313
330-430	9	1185	1245	0	2439
345-445	9	1355	1336	0	2700
400-500	10	1483	1312	0	2805
415-515	10	1654	1464	0	3128
430-530	2	1748	1457	0	3207
445-545	2	1676	1499	0	3177
500-600	1	1647	1554	0	3202

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	7	8	4	1	20
315-330	5	5	7	0	17
330-345	3	6	4	2	15
345-400	2	6	8	0	16
400-415	5	8	10	0	23
415-430	7	4	6	1	18
430-445	4	9	10	1	24
445-500	4	6	4	0	14
500-515	7	9	6	0	22
515-530	8	8	10	0	26
530-545	8	11	7	0	26
545-600	9	6	9	0	24
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	17	25	23	3	68
315-415	15	25	29	2	71
330-430	17	24	28	3	72
345-445	18	27	34	2	81
400-500	20	27	30	2	79
415-515	22	28	26	2	78
430-530	23	32	30	1	86
445-545	27	34	27	0	88
500-600	32	34	32	0	98

WILTEC

Tel: (626) 564-1944   Fax: (626) 564-0969   info@wiltecusa.com

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

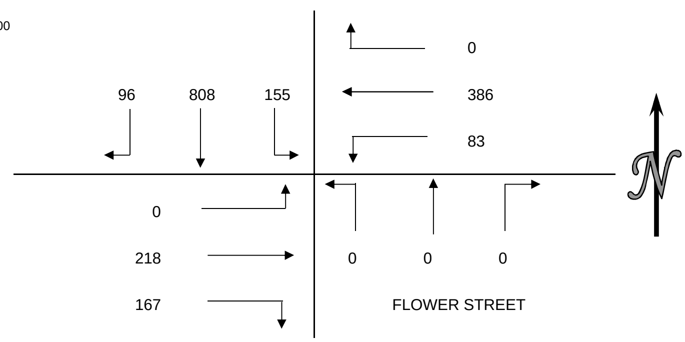
CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	FLOWER STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	13	130	10	0	105	11	0	0	0	15	32	0	316
715-730	18	173	5	0	94	11	0	0	0	29	44	0	374
730-745	15	210	10	0	107	13	0	0	0	29	68	0	452
745-800	14	222	7	0	100	20	0	0	0	37	73	0	473
800-815	10	191	11	0	102	19	0	0	0	26	59	0	418
815-830	20	196	14	0	101	15	0	0	0	46	46	0	438
830-845	26	207	10	0	101	30	0	0	0	42	62	0	478
845-900	22	198	12	0	104	27	0	0	0	41	59	0	463
900-915	19	218	10	0	91	22	0	0	0	37	48	0	445
915-930	23	199	11	0	103	29	0	0	0	48	56	0	469
930-945	24	199	10	0	92	15	0	0	0	40	64	0	444
945-1000	30	192	124	0	100	17	0	0	0	42	50	0	555
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	60	735	32	0	406	55	0	0	0	110	217	0	1615
715-815	57	796	33	0	403	63	0	0	0	121	244	0	1717
730-830	59	819	42	0	410	67	0	0	0	138	246	0	1781
745-845	70	816	42	0	404	84	0	0	0	151	240	0	1807
800-900	78	792	47	0	408	91	0	0	0	155	226	0	1797
815-915	87	819	46	0	397	94	0	0	0	166	215	0	1824
830-930	90	822	43	0	399	108	0	0	0	168	225	0	1855
845-945	88	814	43	0	390	93	0	0	0	166	227	0	1821
900-1000	96	808	155	0	386	83	0	0	0	167	218	0	1913

AM PEAK HOUR: 900-1000

7TH STREET



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	144	68	42	65	319
715-730	155	67	38	99	359
730-745	185	67	38	105	395
745-800	171	79	44	97	391
800-815	144	82	67	80	373
815-830	174	71	68	105	418
830-845	182	81	60	117	440
854-900	170	93	68	120	451
900-915	121	95	67	77	360
915-930	121	92	69	121	403
930-945	156	87	65	104	412
945-1000	107	69	62	85	323
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	655	281	162	366	1464
715-815	655	295	187	381	1518
730-830	674	299	217	387	1577
745-845	671	313	239	399	1622
800-900	670	327	263	422	1682
815-915	647	340	263	419	1669
830-930	594	361	264	435	1654
845-945	568	367	269	422	1626
900-1000	505	343	263	387	1498

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	3	1	10	1	15
715-730	4	1	9	1	15
730-745	7	2	14	7	30
745-800	6	0	16	6	28
800-815	8	0	10	2	20
815-830	3	3	10	3	19
830-845	7	3	11	2	23
845-900	2	0	12	3	17
900-915	5	3	7	1	16
915-930	6	1	4	2	13
930-945	4	3	7	6	20
945-1000	3	2	5	2	12
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	20	4	49	15	88
715-815	25	3	49	16	93
730-830	24	5	50	18	97
745-845	24	6	47	13	90
800-900	20	6	43	10	79
815-915	17	9	40	9	75
830-930	20	7	34	8	69
845-945	17	7	30	12	66
900-1000	18	9	23	11	61

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

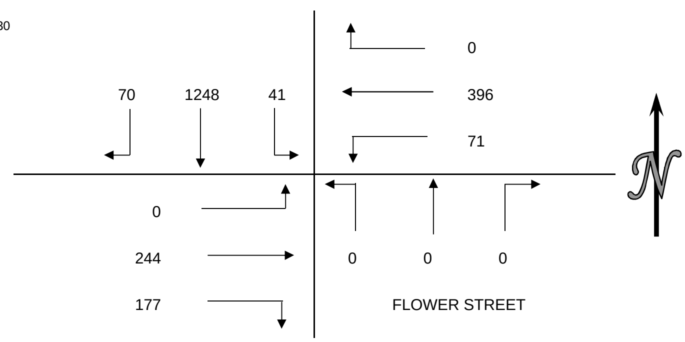
CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	FLOWER STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	31	189	17	0	92	15	0	0	0	32	67	0	443
315-330	22	193	16	0	88	16	0	0	0	31	52	0	418
330-345	25	209	7	0	103	13	0	0	0	39	50	0	446
345-400	14	218	10	0	80	10	0	0	0	22	55	0	409
400-415	17	230	7	0	87	18	0	0	0	28	65	0	452
415-430	11	317	13	0	104	9	0	0	0	32	61	0	547
430-445	13	340	12	0	89	10	0	0	0	36	74	0	574
445-500	11	295	6	0	93	22	0	0	0	47	49	0	523
500-515	23	316	9	0	106	20	0	0	0	41	56	0	571
515-530	23	297	14	0	108	19	0	0	0	53	65	0	579
530-545	21	296	9	0	119	16	0	0	0	34	43	0	538
545-600	25	254	5	0	112	10	0	0	0	44	49	0	499
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	92	809	50	0	363	54	0	0	0	124	224	0	1716
315-415	78	850	40	0	358	57	0	0	0	120	222	0	1725
330-430	67	974	37	0	374	50	0	0	0	121	231	0	1854
345-445	55	1105	42	0	360	47	0	0	0	118	255	0	1982
400-500	52	1182	38	0	373	59	0	0	0	143	249	0	2096
415-515	58	1268	40	0	392	61	0	0	0	156	240	0	2215
430-530	70	1248	41	0	396	71	0	0	0	177	244	0	2247
445-545	78	1204	38	0	426	77	0	0	0	175	213	0	2211
500-600	92	1163	37	0	445	65	0	0	0	172	213	0	2187

PM PEAK HOUR: 430-530

7TH STREET



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	157	81	103	139	480
315-330	155	71	101	130	457
330-345	162	87	88	130	467
345-400	153	64	104	123	444
400-415	149	76	90	135	450
415-430	160	102	84	123	469
430-445	203	105	94	126	528
445-500	148	99	83	148	478
500-515	213	92	97	143	545
515-530	210	103	108	111	532
530-545	153	69	102	152	476
545-600	220	76	95	130	521
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	627	303	396	522	1848
315-415	619	298	383	518	1818
330-430	624	329	366	511	1830
345-445	665	347	372	507	1891
400-500	660	382	351	532	1925
415-515	724	398	358	540	2020
430-530	774	399	382	528	2083
445-545	724	363	390	554	2031
500-600	796	340	402	536	2074

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	5	3	2	6	16
315-330	3	2	5	1	11
330-345	10	3	1	10	24
345-400	5	2	5	2	14
400-415	3	2	4	1	10
415-430	7	1	3	7	18
430-445	10	1	3	6	20
445-500	5	0	4	5	14
500-515	11	0	3	6	20
515-530	20	2	3	11	36
530-545	12	3	8	3	26
545-600	11	0	4	2	17
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	23	10	13	19	65
315-415	21	9	15	14	59
330-430	25	8	13	20	66
345-445	25	6	15	16	62
400-500	25	4	14	19	62
415-515	33	2	13	24	72
430-530	46	3	13	28	90
445-545	48	5	18	25	96
500-600	54	5	18	22	99

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

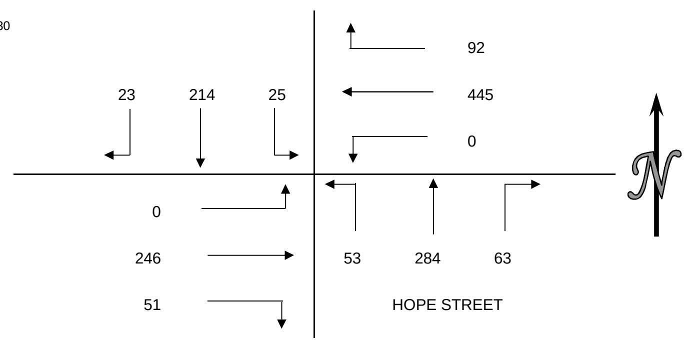
CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY DECEMBER 4, 2014
PERIOD:		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	HOPE STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	4	24	8	20	82	0	7	27	4	8	47	0	231
715-730	5	28	7	14	102	0	6	28	1	8	39	0	238
730-745	1	43	6	20	101	0	15	33	5	1	47	0	272
745-800	4	51	8	14	133	0	16	47	10	0	70	1	354
800-815	2	54	4	10	113	0	12	65	7	8	62	0	337
815-830	4	57	5	21	107	0	15	59	10	8	60	0	346
830-845	7	42	5	27	91	0	21	80	18	15	64	0	370
845-900	5	60	9	18	118	0	11	69	14	9	54	0	367
900-915	7	52	7	24	114	0	13	81	11	14	51	0	374
915-930	4	60	4	23	122	0	18	54	10	13	77	0	385
930-945	1	45	6	18	100	0	16	56	7	17	51	0	317
945-1000	7	40	9	20	97	1	16	62	8	11	68	0	339
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	14	146	29	68	418	0	44	135	20	17	203	1	1095
715-815	12	176	25	58	449	0	49	173	23	17	218	1	1201
730-830	11	205	23	65	454	0	58	204	32	17	239	1	1309
745-845	17	204	22	72	444	0	64	251	45	31	256	1	1407
800-900	18	213	23	76	429	0	59	273	49	40	240	0	1420
815-915	23	211	26	90	430	0	60	289	53	46	229	0	1457
830-930	23	214	25	92	445	0	63	284	53	51	246	0	1496
845-945	17	217	26	83	454	0	58	260	42	53	233	0	1443
900-1000	19	197	26	85	433	1	63	253	36	55	247	0	1415

AM PEAK HOUR: 830-930

7TH STREET



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	204	78	62	56	400
715-730	170	82	58	68	378
730-745	181	84	75	88	428
745-800	199	117	68	79	463
800-815	194	118	93	83	488
815-830	499	235	52	124	910
830-845	200	72	96	91	459
854-900	251	112	76	117	556
900-915	217	87	96	65	465
915-930	227	71	84	66	448
930-945	227	86	71	64	448
945-1000	167	87	77	60	391
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	754	361	263	291	1669
715-815	744	401	294	318	1757
730-830	1073	554	288	374	2289
745-845	1092	542	309	377	2320
800-900	1144	537	317	415	2413
815-915	1167	506	320	397	2390
830-930	895	342	352	339	1928
845-945	922	356	327	312	1917
900-1000	838	331	328	255	1752

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	3	1	14	1	19
715-730	4	2	6	1	13
730-745	4	0	7	1	12
745-800	4	2	14	4	24
800-815	7	1	17	2	27
815-830	12	5	6	2	25
830-845	9	2	9	0	20
845-900	4	4	9	1	18
900-915	13	1	5	0	19
915-930	11	6	6	2	25
930-945	5	1	4	0	10
945-1000	3	2	8	5	18
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	15	5	41	7	68
715-815	19	5	44	8	76
730-830	27	8	44	9	88
745-845	32	10	46	8	96
800-900	32	12	41	5	90
815-915	38	12	29	3	82
830-930	37	13	29	3	82
845-945	33	12	24	3	72
900-1000	32	10	23	7	72

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

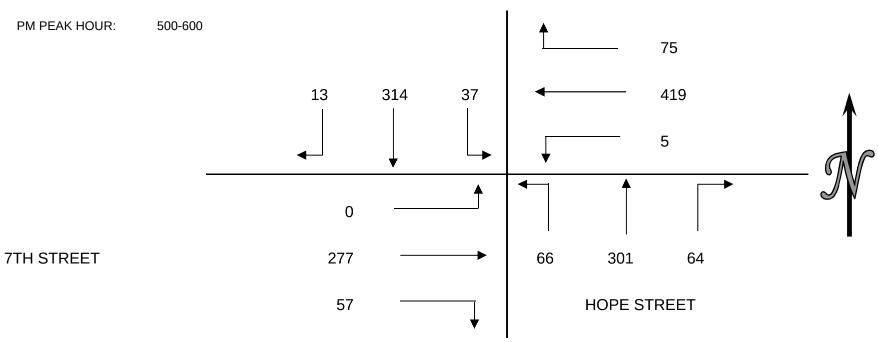
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY DECEMBER 4, 2014
PERIOD:		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	HOPE STREET
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	0	37	9	18	83	0	26	30	18	21	71	0	313
315-330	4	40	6	12	115	2	20	39	7	10	58	0	313
330-345	3	44	6	17	90	2	11	49	10	11	82	0	325
345-400	3	85	12	34	96	1	17	49	13	12	69	0	391
400-415	4	66	8	16	89	0	25	56	10	11	73	0	358
415-430	4	43	7	17	84	0	9	54	11	12	74	0	315
430-445	6	60	6	15	91	0	11	60	8	9	72	0	338
445-500	11	62	11	15	86	1	16	75	13	13	74	0	377
500-515	5	62	13	21	94	3	15	63	13	15	74	0	378
515-530	3	89	6	23	68	1	15	72	19	14	69	0	379
530-545	2	83	9	13	145	1	15	83	16	15	63	0	445
545-600	3	80	9	18	112	0	19	83	18	13	71	0	426
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	10	206	33	81	384	5	74	167	48	54	280	0	1342
315-415	14	235	32	79	390	5	73	193	40	44	282	0	1387
330-430	14	238	33	84	359	3	62	208	44	46	298	0	1389
345-445	17	254	33	82	360	1	62	219	42	44	288	0	1402
400-500	25	231	32	63	350	1	61	245	42	45	293	0	1388
415-515	26	227	37	68	355	4	51	252	45	49	294	0	1408
430-530	25	273	36	74	339	5	57	270	53	51	289	0	1472
445-545	21	296	39	72	393	6	61	293	61	57	280	0	1579
500-600	13	314	37	75	419	5	64	301	66	57	277	0	1628

PM PEAK HOUR: 500-600



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	236	111	154	111	612
315-330	242	95	137	108	582
330-345	254	76	128	114	572
345-400	391	128	175	115	809
400-415	257	137	175	143	712
415-430	189	82	158	108	537
430-445	230	112	161	137	640
445-500	226	102	160	115	603
500-515	279	141	192	121	733
515-530	249	92	180	143	664
530-545	271	123	163	113	670
545-600	269	105	191	114	679
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	1123	410	594	448	2575
315-415	1144	436	615	480	2675
330-430	1091	423	636	480	2630
345-445	1067	459	669	503	2698
400-500	902	433	654	503	2492
415-515	924	437	671	481	2513
430-530	984	447	693	516	2640
445-545	1025	458	695	492	2670
500-600	1068	461	726	491	2746

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	5	7	9	0	21
315-330	14	5	9	3	31
330-345	14	9	13	3	39
345-400	13	2	4	11	30
400-415	10	2	6	5	23
415-430	5	2	8	1	16
430-445	12	0	13	5	30
445-500	8	0	11	5	24
500-515	16	3	13	3	35
515-530	20	4	12	6	42
530-545	16	3	11	7	37
545-600	11	2	11	2	26
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	46	23	35	17	121
315-415	51	18	32	22	123
330-430	42	15	31	20	108
345-445	40	6	31	22	99
400-500	35	4	38	16	93
415-515	41	5	45	14	105
430-530	56	7	49	19	131
445-545	60	10	47	21	138
500-600	63	12	47	18	140

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

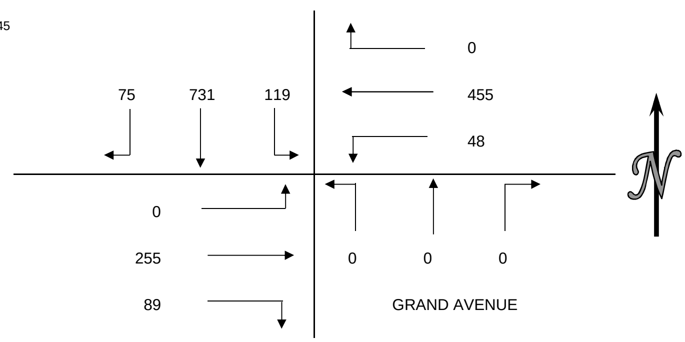
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY DECEMBER 4, 2014
PERIOD:		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	GRAND AVENUE
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	11	106	9	0	96	15	0	0	0	10	57	0	304
715-730	13	122	24	0	112	17	0	0	0	10	44	0	342
730-745	12	148	21	0	99	8	0	0	0	18	57	0	363
745-800	18	191	25	0	129	9	0	0	0	25	73	0	470
800-815	14	188	30	0	122	14	0	0	0	19	54	0	441
815-830	18	198	40	0	100	12	0	0	0	21	64	0	453
830-845	25	154	24	0	104	13	0	0	0	24	64	0	408
845-900	16	181	34	0	116	8	0	0	0	13	57	0	425
900-915	20	171	39	0	127	10	0	0	0	22	54	0	443
915-930	22	134	29	0	110	12	0	0	0	24	67	0	398
930-945	20	147	21	0	101	10	0	0	0	23	56	0	378
945-1000	14	133	32	0	109	11	0	0	0	18	71	0	388
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	54	567	79	0	436	49	0	0	0	63	231	0	1479
715-815	57	649	100	0	462	48	0	0	0	72	228	0	1616
730-830	62	725	116	0	450	43	0	0	0	83	248	0	1727
745-845	75	731	119	0	455	48	0	0	0	89	255	0	1772
800-900	73	721	128	0	442	47	0	0	0	77	239	0	1727
815-915	79	704	137	0	447	43	0	0	0	80	239	0	1729
830-930	83	640	126	0	457	43	0	0	0	83	242	0	1674
845-945	78	633	123	0	454	40	0	0	0	82	234	0	1644
900-1000	76	585	121	0	447	43	0	0	0	87	248	0	1607

AM PEAK HOUR: 745-845



7TH STREET

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	70	20	60	32	182
715-730	53	30	60	43	186
730-745	72	23	59	47	201
745-800	90	27	78	64	259
800-815	81	37	83	53	254
815-830	94	32	76	56	258
830-845	80	40	85	66	271
854-900	127	43	105	81	356
900-915	111	47	100	58	316
915-930	107	45	90	66	308
930-945	128	41	89	69	327
945-1000	104	42	98	60	304
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	285	100	257	186	828
715-815	296	117	280	207	900
730-830	337	119	296	220	972
745-845	345	136	322	239	1042
800-900	382	152	349	256	1139
815-915	412	162	366	261	1201
830-930	425	175	380	271	1251
845-945	473	176	384	274	1307
900-1000	450	175	377	253	1255

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	7	1	12	2	22
715-730	6	0	11	1	18
730-745	3	1	7	1	12
745-800	8	0	13	3	24
800-815	8	2	13	1	24
815-830	7	1	10	2	20
830-845	-32	0	13	1	-18
845-900	48	0	12	2	62
900-915	10	0	9	1	20
915-930	9	2	7	2	20
930-945	6	0	5	1	12
945-1000	6	1	5	0	12
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	24	2	43	7	76
715-815	25	3	44	6	78
730-830	26	4	43	7	80
745-845	-9	3	49	7	50
800-900	31	3	48	6	88
815-915	33	1	44	6	84
830-930	35	2	41	6	84
845-945	73	2	33	6	114
900-1000	31	3	26	4	64

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

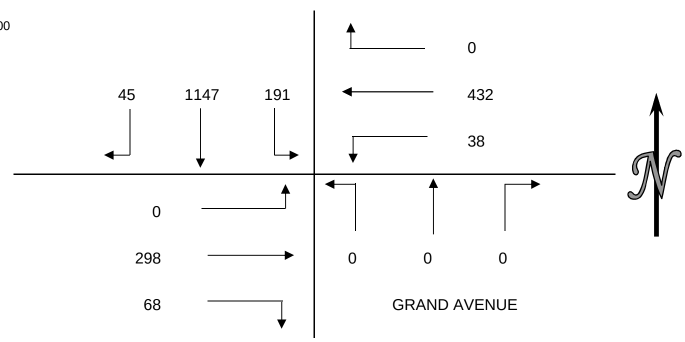
CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY DECEMBER 4, 2014
PERIOD:		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	GRAND AVENUE
	E/W	7TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	13	158	41	0	83	7	0	0	0	18	96	0	416
315-330	10	120	42	0	92	12	0	0	0	18	67	0	361
330-345	7	145	49	0	102	11	0	0	0	15	85	0	414
345-400	18	190	46	0	94	11	0	0	0	15	76	0	450
400-415	13	219	54	0	95	9	0	0	0	12	90	0	492
415-430	6	220	38	0	80	8	0	0	0	13	74	0	439
430-445	8	254	46	0	91	8	0	0	0	14	80	0	501
445-500	14	269	38	0	86	12	0	0	0	18	76	0	513
500-515	9	295	53	0	100	2	0	0	0	20	69	0	548
515-530	14	277	49	0	89	15	0	0	0	17	70	0	531
530-545	12	297	45	0	130	11	0	0	0	19	79	0	593
545-600	10	278	44	0	113	10	0	0	0	12	80	0	547
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	48	613	178	0	371	41	0	0	0	66	324	0	1641
315-415	48	674	191	0	383	43	0	0	0	60	318	0	1717
330-430	44	774	187	0	371	39	0	0	0	55	325	0	1795
345-445	45	883	184	0	360	36	0	0	0	54	320	0	1882
400-500	41	962	176	0	352	37	0	0	0	57	320	0	1945
415-515	37	1038	175	0	357	30	0	0	0	65	299	0	2001
430-530	45	1095	186	0	366	37	0	0	0	69	295	0	2093
445-545	49	1138	185	0	405	40	0	0	0	74	294	0	2185
500-600	45	1147	191	0	432	38	0	0	0	68	298	0	2219

PM PEAK HOUR: 500-600

7TH STREET



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	144	46	139	75	404
315-330	121	34	107	42	304
330-345	155	27	123	48	353
345-400	156	34	124	52	366
400-415	147	44	142	76	409
415-430	166	63	140	64	433
430-445	171	43	127	66	407
445-500	171	43	141	68	423
500-515	184	42	149	72	447
515-530	195	47	104	67	413
530-545	213	38	143	87	481
545-600	183	59	136	75	453
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	576	141	493	217	1427
315-415	579	139	496	218	1432
330-430	624	168	529	240	1561
345-445	640	184	533	258	1615
400-500	655	193	550	274	1672
415-515	692	191	557	270	1710
430-530	721	175	521	273	1690
445-545	763	170	537	294	1764
500-600	775	186	532	301	1794

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	6	1	4	5	16
315-330	14	5	15	1	35
330-345	15	2	15	3	35
345-400	5	0	8	1	14
400-415	10	1	7	1	19
415-430	8	1	7	1	17
430-445	13	0	15	5	33
445-500	10	1	10	3	24
500-515	17	2	9	5	33
515-530	26	0	13	2	41
530-545	24	2	8	2	36
545-600	15	1	12	1	29
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	40	8	42	10	100
315-415	44	8	45	6	103
330-430	38	4	37	6	85
345-445	36	2	37	8	83
400-500	41	3	39	10	93
415-515	48	4	41	14	107
430-530	66	3	47	15	131
445-545	77	5	40	12	134
500-600	82	5	42	10	139

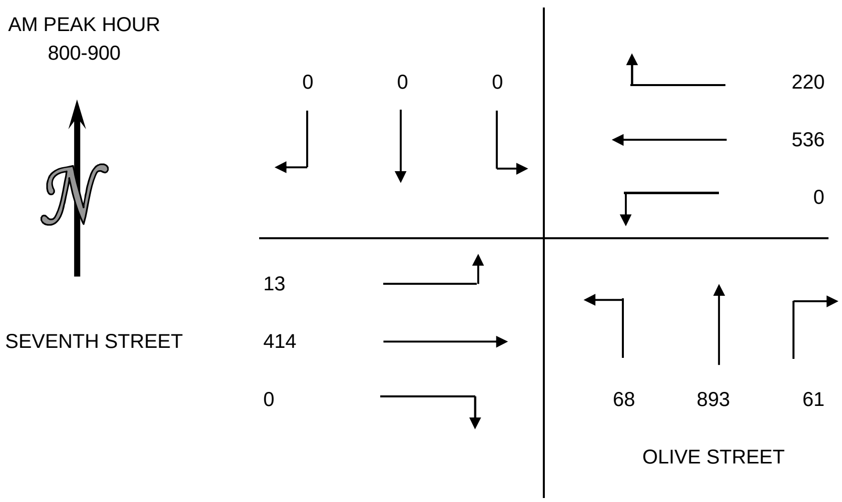
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S OLIVE STREET
E/W SEVENTH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	0	0	0	37	87	0	4	111	6	0	85	6	336
715-730	0	0	0	41	118	0	3	128	10	0	93	2	395
730-745	0	0	0	45	107	0	15	186	12	0	101	4	470
745-800	0	0	0	50	138	0	12	177	14	0	107	4	502
800-815	0	0	0	57	143	0	20	212	16	0	114	3	565
815-830	0	0	0	40	126	0	8	250	17	0	99	6	546
830-845	0	0	0	66	148	0	11	213	14	0	107	1	560
845-900	0	0	0	57	119	0	22	218	21	0	94	3	534
HOUR TOTALS													
700-800	0	0	0	173	450	0	34	602	42	0	386	16	1703
715-815	0	0	0	193	506	0	50	703	52	0	415	13	1932
730-830	0	0	0	192	514	0	55	825	59	0	421	17	2083
745-845	0	0	0	213	555	0	51	852	61	0	427	14	2173
800-900	0	0	0	220	536	0	61	893	68	0	414	13	2205



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	33	31	78	32
715-730	55	28	61	30
730-745	63	38	77	68
745-800	92	68	103	65
800-815	63	42	82	51
815-830	63	45	57	43
830-845	64	32	68	40
845-900	89	45	84	66
HOUR TOTALS				
700-800	243	165	319	195
715-815	273	176	323	214
730-830	281	193	319	227
745-845	282	187	310	199
800-900	279	164	291	200

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

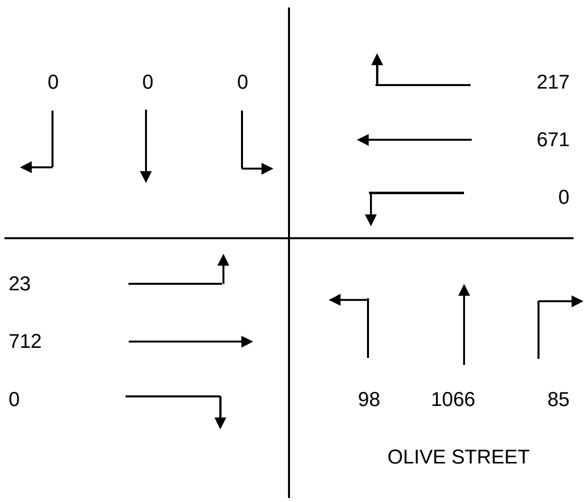
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S OLIVE STREET
E/W SEVETH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
400-415	0	0	0	15	127	0	18	249	9	0	124	4	546
415-430	0	0	0	35	120	0	18	208	9	0	138	6	534
430-445	0	0	0	31	127	0	32	265	12	0	137	6	610
445-500	0	0	0	35	135	0	34	260	10	0	174	5	653
500-515	0	0	0	55	142	0	18	255	23	0	194	4	691
515-530	0	0	0	61	162	0	25	287	22	0	202	3	762
530-545	0	0	0	56	185	0	23	233	25	0	174	5	701
545-600	0	0	0	45	182	0	19	291	28	0	142	11	718
HOUR TOTALS													
400-500	0	0	0	116	509	0	102	982	40	0	573	21	2343
415-515	0	0	0	156	524	0	102	988	54	0	643	21	2488
430-530	0	0	0	182	566	0	109	1067	67	0	707	18	2716
445-545	0	0	0	207	624	0	100	1035	80	0	744	17	2807
500-600	0	0	0	217	671	0	85	1066	98	0	712	23	2872

PM PEAK HOUR
500-600

SEVETH STREET



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	104	74	130	38
415-430	98	55	115	41
430-445	128	98	132	46
445-500	114	51	101	48
500-515	185	72	146	79
515-530	154	91	151	59
530-545	156	75	138	65
545-600	113	64	120	62
HOUR TOTALS				
400-500	444	278	478	173
415-515	525	276	494	214
430-530	581	312	530	232
445-545	609	289	536	251
500-600	608	302	555	265

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill St

East/West 7th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	32	38	50	72
BIKES	64	68	238	160
BUSES	215	205	252	240

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	114	8.15	268	7.45	115	9.45	148	8.45
PM PK 15 MIN	180	17.15	277	17.15	148	17.15	154	16.00
AM PK HOUR	408	8.15	980	7.30	360	9.00	555	8.30
PM PK HOUR	703	17.00	1004	17.00	527	16.30	558	16.45

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	244	31	275
8-9	1	346	55	402
9-10	2	271	58	331
15-16	2	377	76	455
16-17	6	515	58	579
17-18	5	649	49	703
TOTAL	16	2402	327	2745

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	808	120	928
8-9	0	806	122	928
9-10	5	688	124	817
15-16	1	469	123	593
16-17	1	670	114	785
17-18	1	823	180	1004
TOTAL	8	4264	783	5055

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1203	472	0	262	0
8-9	1330	418	0	323	0
9-10	1148	317	0	181	0
15-16	1048	643	0	442	0
16-17	1364	574	0	550	0
17-18	1707	613	0	618	0
TOTAL	7800	3037	0	2376	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	6	205	35	246
8-9	20	269	49	338
9-10	10	283	67	360
15-16	26	398	58	482
16-17	20	437	57	514
17-18	37	410	59	506
TOTAL	119	2002	325	2446

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	12	464	26	502
8-9	21	479	44	544
9-10	16	442	62	520
15-16	28	380	101	509
16-17	23	408	100	531
17-18	20	424	105	549
TOTAL	120	2597	438	3155

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	748	163	0	282	0
8-9	882	205	0	294	0
9-10	880	258	0	346	0
15-16	991	324	0	612	0
16-17	1045	373	0	525	0
17-18	1055	387	0	539	0
TOTAL	5601	1710	0	2598	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Hill St and 7th St , Los Angeles

Date:	9/9/2014
Day:	Tuesday
Project #:	14-5578-001
City:	Los Angeles

N

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

CONTROL: Signalized

Hill St / 7th St

Southbound Approach

	Right	Thru	Left	Out
Lanes	0	2	0	
AM	122	806	0	410
NOON	0	0	0	0
PM	180	823	1	791

Eastbound Approach

	Lanes	AM	NOON	PM
Out		602	0	609
Left	1	20	0	37
Thru	2	269	0	410
Right	0	49	0	59

Westbound Approach

	AM	NOON	PM	Lanes
Right	44	0	105	0
Thru	479	0	424	2
Left	21	0	20	1
Out	324	0	460	

Northbound Approach

	Out	Left	Thru	Right
AM	876	1	346	55
NOON	0	0	0	0
PM	902	5	649	49
Lanes		0	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	928	410
North Leg	NOON	0	0
North Leg	PM	1004	791
East Leg	AM	544	324
East Leg	NOON	0	0
East Leg	PM	549	460
West Leg	AM	338	602
West Leg	NOON	0	0
West Leg	PM	506	609
South Leg	AM	402	876
South Leg	NOON	0	0
South Leg	PM	703	902

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1338	0	1795
East Leg	868	0	1009
West Leg	940	0	1115
South Leg	1278	0	1605

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West 7th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	42	65	40	63
BIKES	75	93	211	205
BUSES	231	85	246	243

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	189	7.45	115	8.45	98	9.45	141	7.45
PM PK 15 MIN	175	17.30	144	17.15	141	15.30	133	16.00
AM PK HOUR	643	7.45	420	8.45	336	9.00	507	7.15
PM PK HOUR	671	17.00	537	16.45	500	15.30	494	15.15

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	6	505	43	554
8-9	7	536	49	592
9-10	9	370	50	429
15-16	4	333	49	386
16-17	7	493	48	548
17-18	9	607	55	671
TOTAL	42	2844	294	3180

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	257	39	296
8-9	0	303	78	381
9-10	1	320	93	414
15-16	0	340	112	452
16-17	3	389	106	498
17-18	0	414	121	535
TOTAL	4	2023	549	2576

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	850	391	3	272	0
8-9	973	399	1	352	0
9-10	843	325	1	377	0
15-16	838	551	5	431	0
16-17	1046	555	6	422	0
17-18	1206	598	8	483	0
TOTAL	5756	2819	24	2337	####

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	8	207	16	231
8-9	16	255	27	298
9-10	13	301	22	336
15-16	26	394	58	478
16-17	18	422	40	480
17-18	24	391	36	451
TOTAL	105	1970	199	2274

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	18	454	26	498
8-9	10	441	22	473
9-10	20	402	45	467
15-16	28	379	66	473
16-17	22	394	63	479
17-18	11	411	56	478
TOTAL	109	2481	278	2868

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	729	297	0	297	0
8-9	771	333	0	271	0
9-10	803	289	0	308	0
15-16	951	470	0	390	4
16-17	959	506	0	386	7
17-18	929	534	1	510	6
TOTAL	5142	2429	1	2162	17

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Broadway and 7th St , Los Angeles

Date: 9/9/2014
Day: Tuesday

Project #: 14-5578-002
City: Los Angeles

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

N

Broadway

7th St

Total Peak Hour Summary

Southbound Approach

Lanes	1	2	0	
AM	55	280	0	629 AM
NOON	0	0	0	0 NOON
PM	111	426	0	652 PM

Eastbound Approach

	AM	NOON	PM
	519	0	545

Lanes	AM	NOON	PM
1	13	0	21
2	262	0	416
0	18	0	34

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
25	0	48	0
461	0	427	2
18	0	15	1

AM	NOON	PM
311	0	470

Northbound Approach

AM	316	3	591	49	AM
NOON	0	0	0	0	NOON
PM	475	7	583	54	PM
		0	3	0	Lanes

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	335	629	
NOON	0	0	
PM	537	652	

West Leg

AM	NOON	PM
519	0	545
293	0	471

East Leg

AM	NOON	PM
504	0	490
311	0	470

South Leg

AM	316	643
NOON	0	0
PM	475	644

Total Volume Per Leg

North Leg

AM	964
NOON	0
PM	1189

West Leg

AM	NOON	PM
812	0	1016

East Leg

AM	NOON	PM
815	0	960

South Leg

AM	959
NOON	0
PM	1119

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Spring St

East/West 7th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	76	41	49
BIKES	177	139	207	38
BUSES	0	374	248	244

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	0.00	294	8.30	92	9.45	134	7.15
PM PK 15 MIN	0	0.00	249	17.00	134	16.00	117	15.30
AM PK HOUR	0	0.00	1103	8.15	337	9.00	471	7.15
PM PK HOUR	0	0.00	945	17.00	491	15.30	440	15.30

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	44	772	106	922
8-9	44	912	120	1076
9-10	63	792	145	1000
15-16	67	508	110	685
16-17	53	606	112	771
17-18	62	759	124	945
TOTAL	333	4349	717	5399

Hours	**TOTAL** N-S	**XING S/L** Ped	Sch	**XING N/L** Ped	Sch
7-8	922	297	0	198	1
8-9	1076	297	2	291	1
9-10	1000	239	0	337	0
15-16	685	387	6	336	1
16-17	771	382	2	281	1
17-18	945	458	6	384	1
TOTAL	5399	2060	16	1827	5

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	214	38	252
8-9	0	259	69	328
9-10	0	277	60	337
15-16	0	385	68	453
16-17	0	422	64	486
17-18	0	397	69	466
TOTAL	0	1954	368	2322

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	65	400	0	465
8-9	62	383	0	445
9-10	62	356	0	418
15-16	64	361	0	425
16-17	62	368	0	430
17-18	56	365	0	421
TOTAL	371	2233	0	2604

Hours	**TOTAL** E-W	**XING W/L** Ped	Sch	**XING E/L** Ped	Sch
7-8	717	126	0	102	0
8-9	773	150	2	163	4
9-10	755	183	1	178	1
15-16	878	311	1	160	0
16-17	916	277	0	201	1
17-18	887	312	3	234	2
TOTAL	4926	1359	7	1038	8

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Spring St and 7th St , Los Angeles

Date:	9/9/2014
Day:	Tuesday
Project #:	14-5578-003
City:	Los Angeles

AM Peak Hour	815 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Spring St

7th St

Total Peak Hour Summary

Southbound Approach

	Left	Thru	Right		Out
Lanes	1	2	0		
AM	136	913	54	AM	0
NOON	0	0	0	NOON	0
PM	124	759	62	PM	0

Eastbound Approach

	AM	NOON	PM
Out	502	0	489

Lanes	AM	NOON	PM
0	0	0	0
2	259	0	397
0	64	0	69

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
U-turn	0	0	0	0
Thru	366	0	365	2
Left	67	0	56	1

	AM	NOON	PM
Out	313	0	459

Northbound Approach

	Out	Left	Thru	Right	
AM	1044	0	0	0	AM
NOON	0	0	0	0	NOON
PM	884	0	0	0	PM
		0	0	0	Lanes

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	1103	0
NOON	0	0
PM	945	0

East Leg

	AM	NOON	PM
In	433	0	421
Out	313	0	459

West Leg

	AM	NOON	PM
Out	502	0	489
In	323	0	466

South Leg

	Out	In
AM	1044	0
NOON	0	0
PM	884	0

Total Volume Per Leg

North Leg

AM	1103
NOON	0
PM	945

East Leg

AM	NOON	PM
746	0	880

West Leg

AM	NOON	PM
825	0	955

South Leg

AM	1044
NOON	0
PM	884

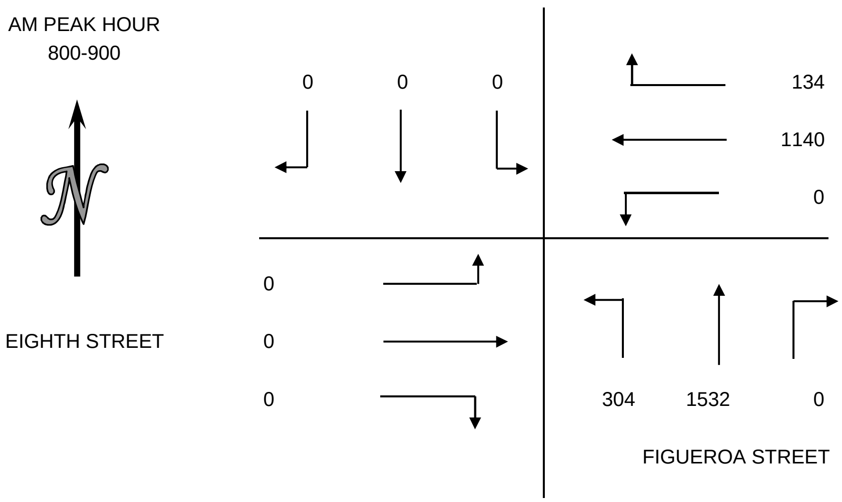
WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 7:00 AM TO 9:00 AM
INTERSECTION: N/S FIGUEROA STREET
E/W EIGHTH STREET

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	
700-715	0	0	0	29	180	0	0	336	44	0	0	0	589
715-730	0	0	0	18	236	0	0	363	41	0	0	0	658
730-745	0	0	0	25	282	0	0	368	68	0	0	0	743
745-800	0	0	0	25	220	0	0	410	48	0	0	0	703
800-815	0	0	0	36	299	0	0	428	69	0	0	0	832
815-830	0	0	0	34	288	0	0	371	84	0	0	0	777
830-845	0	0	0	32	274	0	0	400	74	0	0	0	780
845-900	0	0	0	32	279	0	0	333	77	0	0	0	721
HOUR TOTALS													
700-800	0	0	0	97	918	0	0	1477	201	0	0	0	2693
715-815	0	0	0	104	1037	0	0	1569	226	0	0	0	2936
730-830	0	0	0	120	1089	0	0	1577	269	0	0	0	3055
745-845	0	0	0	127	1081	0	0	1609	275	0	0	0	3092
800-900	0	0	0	134	1140	0	0	1532	304	0	0	0	3110



PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
700-715	30	22	23	58
715-730	35	28	31	69
730-745	26	33	36	103
745-800	34	25	39	92
800-815	47	39	48	128
815-830	50	39	57	110
830-845	43	43	75	87
845-900	41	38	80	88
HOUR TOTALS				
700-800	125	108	129	322
715-815	142	125	154	392
730-830	157	136	180	433
745-845	174	146	219	417
800-900	181	159	260	413

WILTEC
Phone: (626) 564-1944 Fax: (626) 564-0969

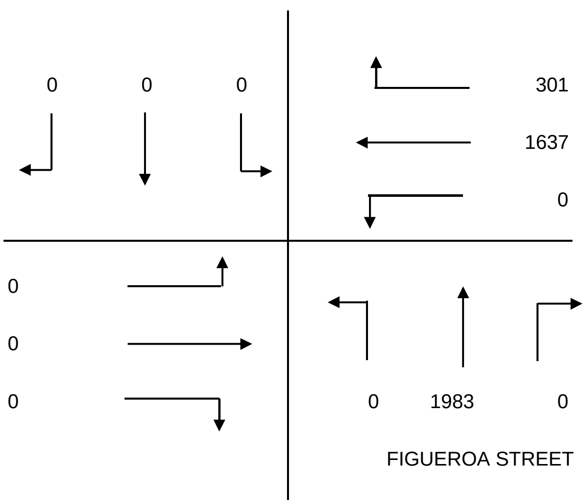
INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: INTUEOR
PROJECT: DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE: TUESDAY MAY 5, 2009
PERIOD: 4:00 PM TO 6:00 PM
INTERSECTION: N/S FIGUEROA STREET
E/W EIGHTH STREET

15 MIN COUNTS PERIOD	1 SBRT	2 SBTH	3 SBLT	4 WBRT	5 WBTH	6 WBLT	7 NBRT	8 NBTH	9 NBLT	10 EBRT	11 EBTH	12 EBLT	TOTALS
400-415	0	0	0	64	324	0	0	467	0	0	0	0	855
415-430	0	0	0	66	327	0	0	454	0	0	0	0	847
430-445	0	0	0	56	350	0	0	482	0	0	0	0	888
445-500	0	0	0	56	395	0	0	450	0	0	0	0	901
500-515	0	0	0	74	390	0	0	485	0	0	0	0	949
515-530	0	0	0	74	384	0	0	494	0	0	0	0	952
530-545	0	0	0	82	422	0	0	485	0	0	0	0	989
545-600	0	0	0	71	441	0	0	519	0	0	0	0	1031
HOUR TOTALS													
400-500	0	0	0	242	1396	0	0	1853	0	0	0	0	3491
415-515	0	0	0	252	1462	0	0	1871	0	0	0	0	3585
430-530	0	0	0	260	1519	0	0	1911	0	0	0	0	3690
445-545	0	0	0	286	1591	0	0	1914	0	0	0	0	3791
500-600	0	0	0	301	1637	0	0	1983	0	0	0	0	3921

PM PEAK HOUR
500-600

EIGHTH STREET



FIGUEROA STREET

PEDESTRIAN COUNTS				
PERIOD 15 MIN COUNTS	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
400-415	47	57	71	94
415-430	30	64	53	116
430-445	43	63	55	113
445-500	55	67	59	125
500-515	60	85	80	143
515-530	27	53	61	110
530-545	43	44	80	132
545-600	62	57	85	131
HOUR TOTALS				
400-500	175	251	238	448
415-515	188	279	247	497
430-530	185	268	255	491
445-545	185	249	280	510
500-600	192	239	306	516

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill St

East/West 8th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	26	44	0	102
BIKES	53	67	54	86
BUSES	182	210	0	119

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	121	8.45	234	7.45	0	0.00	284	8.30
PM PK 15 MIN	200	17.30	306	17.15	0	0.00	355	17.45
AM PK HOUR	451	8.00	858	7.15	0	0.00	1038	8.00
PM PK HOUR	720	17.00	959	17.00	0	0.00	1227	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	41	265	0	306
8-9	56	395	0	451
9-10	44	266	0	310
15-16	59	392	0	451
16-17	57	490	0	547
17-18	64	656	0	720
TOTAL	321	2464	0	2785

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	685	154	839
8-9	0	662	151	813
9-10	0	499	149	648
15-16	0	428	130	558
16-17	0	627	126	753
17-18	0	799	160	959
TOTAL	0	3700	870	4570

Hours	**TOTAL** N-S	**XING S/L** Ped	Sch	**XING N/L** Ped	Sch
7-8	1145	170	2	105	2
8-9	1264	140	1	122	1
9-10	958	87	0	107	3
15-16	1009	123	3	98	4
16-17	1300	132	1	107	1
17-18	1679	191	2	198	2
TOTAL	7355	843	9	737	13

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	55	689	44	788
8-9	86	888	64	1038
9-10	74	700	75	849
15-16	83	531	70	684
16-17	72	615	74	761
17-18	82	1043	102	1227
TOTAL	452	4466	429	5347

Hours	**TOTAL** E-W	**XING W/L** Ped	Sch	**XING E/L** Ped	Sch
7-8	788	135	1	303	4
8-9	1038	164	1	270	3
9-10	849	143	2	188	0
15-16	684	134	1	177	1
16-17	761	134	5	126	0
17-18	1227	246	1	252	4
TOTAL	5347	956	11	1316	12

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Hill St and 8th St , Los Angeles

Date: 9/9/2014
Day: Tuesday

Project #: 14-5578-005
City: Los Angeles

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Hill St

8th St

Total Peak Hour Summary

Southbound Approach

	Right	Through	Left	Out
Lanes	1	2	0	
AM	151	662	0	459
NOON	0	0	0	0
PM	160	799	0	758

Eastbound Approach

	Lanes	AM	NOON	PM
Out		1095	0	1267
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	64	0	102	0
Through	888	0	1043	3
Left	86	0	82	1
Out	0	0	0	

CONTROL

Signalized

Northbound Approach

	Out	Left	Through	Right
AM	748	56	395	0
NOON	0	0	0	0
PM	881	64	656	0
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg		AM	NOON	PM
North Leg	In	813	0	959
North Leg	Out	459	0	758
East Leg	In	1038	0	1227
East Leg	Out	0	0	0
West Leg	In	0	0	0
West Leg	Out	1095	0	1267
South Leg	Out	748	0	881
South Leg	In	451	0	720

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1272	0	1717
East Leg	1038	0	1227
West Leg	1095	0	1267
South Leg	1199	0	1601

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West 8th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	45	46	0	95
BIKES	115	87	57	94
BUSES	235	83	0	114

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	181	7.45	105	8.45	0	0.00	254	8.30
PM PK 15 MIN	183	17.45	130	17.15	0	0.00	328	17.45
AM PK HOUR	649	7.45	394	8.45	0	0.00	933	8.00
PM PK HOUR	700	17.00	473	16.30	0	0.00	1127	17.00

NORTHBOUND Approach					**SOUTHBOUND Approach**					**TOTAL**	**XING S/L**		**XING N/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	47	514	0	561	*7-8*	0	238	72	310	871	42	0	43	0
8-9	66	555	0	621	*8-9*	0	281	76	357	978	56	0	67	0
9-10	76	425	0	501	*9-10*	0	320	66	386	887	56	0	56	0
15-16	53	331	0	384	*15-16*	0	336	75	411	795	46	0	59	3
16-17	51	491	0	542	*16-17*	0	370	76	446	988	59	0	72	6
17-18	81	619	0	700	*17-18*	0	385	68	453	1153	63	0	125	1
TOTAL	374	2935	0	3309	TOTAL	0	1930	433	2363	5672	322	0	422	10

EASTBOUND Approach					**WESTBOUND Approach**					**TOTAL**	**XING W/L**		**XING E/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	0	0	0	0	*7-8*	11	670	28	709	709	87	0	156	0
8-9	0	0	0	0	*8-9*	27	865	41	933	933	113	0	170	0
9-10	0	0	0	0	*9-10*	31	694	34	759	759	91	0	94	0
15-16	0	0	0	0	*15-16*	49	539	48	636	636	99	0	180	0
16-17	0	0	0	0	*16-17*	44	651	61	756	756	104	0	190	0
17-18	0	0	0	0	*17-18*	69	994	64	1127	1127	203	0	271	0
TOTAL	0	0	0	0	TOTAL	231	4413	276	4920	4920	697	0	1061	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Broadway and 8th St , Los Angeles

Date: 9/9/2014
Day: Tuesday

Project #: 14-5578-006
City: Los Angeles

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Broadway

8th St

Total Peak Hour Summary

Southbound Approach

Lanes	1	1	0		
AM	76	281	0	596	AM
NOON	0	0	0	0	NOON
PM	68	385	0	683	PM

Eastbound Approach

	AM	NOON	PM
	1007	0	1143
0	0	0	0
0	0	0	0
0	0	0	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
41	0	64	0
865	0	994	3
27	0	69	0
0	0	0	
AM	NOON	PM	

Northbound Approach

AM	308	66	555	0	AM
NOON	0	0	0	0	NOON
PM	454	81	619	0	PM
		0	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

357	596	AM
0	0	NOON
453	683	PM

West Leg

AM	NOON	PM
1007	0	1143
0	0	0

East Leg

933	0	1127
0	0	0
AM	NOON	PM

South Leg

AM	308	621
NOON	0	0
PM	454	700

Total Volume Per Leg

North Leg

953	AM
0	NOON
1136	PM

West Leg

AM	NOON	PM
1007	0	1143

East Leg

933	0	1127
AM	NOON	PM

South Leg

AM	929
NOON	0
PM	1154

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Spring St

East/West 8th St

Day: Tuesday Date: September 9, 2014 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	67	0	78
BIKES	10	133	64	86
BUSES	0	377	0	106

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	0.00	270	8.30	0	0.00	192	9.15
PM PK 15 MIN	0	0.00	226	17.00	0	0.00	302	17.45
AM PK HOUR	0	0.00	1020	8.15	0	0.00	721	8.30
PM PK HOUR	0	0.00	868	17.00	0	0.00	1040	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total	TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
7-8	0	656	211	867	867	156	0	87	0
8-9	0	724	295	1019	1019	170	0	113	0
9-10	0	641	208	849	849	94	0	91	0
15-16	0	486	143	629	629	180	3	99	0
16-17	0	566	155	721	721	190	6	104	0
17-18	0	679	189	868	868	271	1	203	0
TOTAL	0	3752	1201	4953	4953	1061	10	697	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total	TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
7-8	51	504	0	555	555	42	0	43	0
8-9	79	633	0	712	712	56	0	67	0
9-10	82	560	0	642	642	56	0	56	0
15-16	95	493	0	588	588	46	0	59	0
16-17	104	580	0	684	684	59	0	72	0
17-18	114	926	0	1040	1040	63	0	125	0
TOTAL	525	3696	0	4221	4221	322	0	422	0

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Spring St and 8th St , Los Angeles

Date:	9/9/2014
Day:	Tuesday
Project #:	14-5578-007
City:	Los Angeles

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

N

Spring St

8th St

Southbound Approach

Lanes	1	2	0	
AM	295	724	0	0
NOON	0	0	0	0
PM	189	679	0	0

Eastbound Approach

	AM	NOON	PM
	928	0	1115

Lanes	AM	NOON	PM
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
633	0	926	4
79	0	114	0

AM	NOON	PM
0	0	0

CONTROL

Signalized

Northbound Approach

AM	803	0	0	0
NOON	0	0	0	0
PM	793	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg		
1019	0	AM
0	0	NOON
868	0	PM

West Leg	AM	NOON	PM
	928	0	1115
	0	0	0

East Leg	AM	NOON	PM
	712	0	1040
	0	0	0

South Leg		
AM	803	0
NOON	0	0
PM	793	0

Total Volume Per Leg

North Leg	
1019	AM
0	NOON
868	PM

West Leg	AM	NOON	PM
	928	0	1115

East Leg	AM	NOON	PM
	712	0	1040

South Leg	
AM	803
NOON	0
PM	793

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

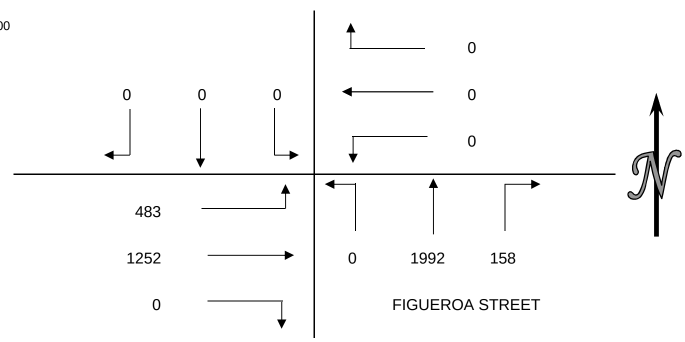
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	9TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	0	0	0	0	0	14	394	0	0	180	115	703
715-730	0	0	0	0	0	0	35	492	0	0	205	92	824
730-745	0	0	0	0	0	0	35	559	0	0	247	122	963
745-800	0	0	0	0	0	0	22	515	0	0	290	97	924
800-815	0	0	0	0	0	0	48	540	0	0	304	116	1008
815-830	0	0	0	0	0	0	39	503	0	0	317	101	960
830-845	0	0	0	0	0	0	44	462	0	0	317	143	966
845-900	0	0	0	0	0	0	27	487	0	0	314	123	951
900-915	0	0	0	0	0	0	28	470	0	0	275	129	902
915-930	0	0	0	0	0	0	33	392	0	0	267	154	846
930-945	0	0	0	0	0	0	50	337	0	0	245	144	776
945-1000	0	0	0	0	0	0	35	256	0	0	229	152	672
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	0	0	0	0	0	0	106	1960	0	0	922	426	3414
715-815	0	0	0	0	0	0	140	2106	0	0	1046	427	3719
730-830	0	0	0	0	0	0	144	2117	0	0	1158	436	3855
745-845	0	0	0	0	0	0	153	2020	0	0	1228	457	3858
800-900	0	0	0	0	0	0	158	1992	0	0	1252	483	3885
815-915	0	0	0	0	0	0	138	1922	0	0	1223	496	3779
830-930	0	0	0	0	0	0	132	1811	0	0	1173	549	3665
845-945	0	0	0	0	0	0	138	1686	0	0	1101	550	3475
900-1000	0	0	0	0	0	0	146	1455	0	0	1016	579	3196

AM PEAK HOUR: 800-900



9TH STREET

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	15	19	13	51	98
715-730	16	21	9	48	94
730-745	27	44	17	55	143
745-800	33	36	19	77	165
800-815	30	39	12	66	147
815-830	35	41	14	74	164
830-845	42	47	29	79	197
854-900	52	54	21	79	206
900-915	51	54	23	86	214
915-930	31	47	16	67	161
930-945	15	51	21	120	207
945-1000	41	45	14	70	170
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	91	120	58	231	500
715-815	106	140	57	246	549
730-830	125	160	62	272	619
745-845	140	163	74	296	673
800-900	159	181	76	298	714
815-915	180	196	87	318	781
830-930	176	202	89	311	778
845-945	149	206	81	352	788
900-1000	138	197	74	343	752

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	9	3	12
715-730	0	4	20	4	28
730-745	1	5	13	7	26
745-800	1	3	9	7	20
800-815	1	6	9	5	21
815-830	0	1	6	2	9
830-845	1	2	7	7	17
845-900	1	1	9	5	16
900-915	2	7	2	2	13
915-930	1	5	3	2	11
930-945	2	7	2	5	16
945-1000	0	7	5	2	14
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	2	12	51	21	86
715-815	3	18	51	23	95
730-830	3	15	37	21	76
745-845	3	12	31	21	67
800-900	3	10	31	19	63
815-915	4	11	24	16	55
830-930	5	15	21	16	57
845-945	6	20	16	14	56
900-1000	5	26	12	11	54

WILTEC

Tel: (626) 564-1944 Fax: (626) 564-0969 info@wiltecusa.com

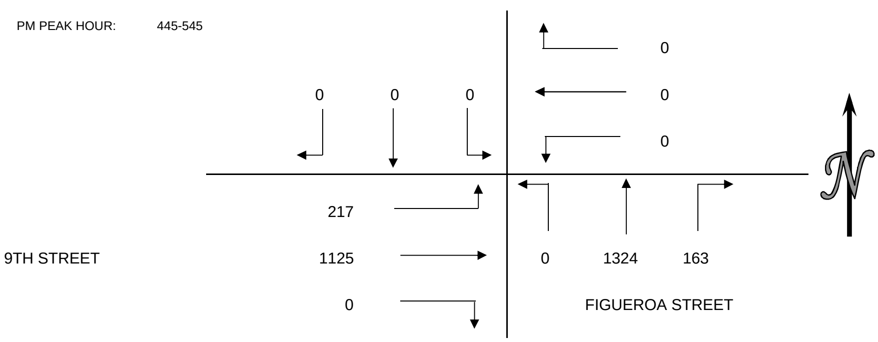
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		GIBSON TRANSPORTATION CONSULTING, INC.
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		TUESDAY AUGUST 19, 2014
PERIOD:		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	9TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	0	0	0	0	0	0	44	307	0	0	196	46	593
315-330	0	0	0	0	0	0	27	294	0	0	206	68	595
330-345	0	0	0	0	0	0	29	313	0	0	194	51	587
345-400	0	0	0	0	0	0	37	345	0	0	204	58	644
400-415	0	0	0	0	0	0	44	311	0	0	206	67	628
415-430	0	0	0	0	0	0	30	293	0	0	216	74	613
430-445	0	0	0	0	0	0	33	302	0	0	258	71	664
445-500	0	0	0	0	0	0	44	355	0	0	251	49	699
500-515	0	0	0	0	0	0	43	328	0	0	284	57	712
515-530	0	0	0	0	0	0	27	318	0	0	318	57	720
530-545	0	0	0	0	0	0	49	323	0	0	272	54	698
545-600	0	0	0	0	0	0	35	294	0	0	259	63	651
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	0	0	0	0	0	0	137	1259	0	0	800	223	2419
315-415	0	0	0	0	0	0	137	1263	0	0	810	244	2454
330-430	0	0	0	0	0	0	140	1262	0	0	820	250	2472
345-445	0	0	0	0	0	0	144	1251	0	0	884	270	2549
400-500	0	0	0	0	0	0	151	1261	0	0	931	261	2604
415-515	0	0	0	0	0	0	150	1278	0	0	1009	251	2688
430-530	0	0	0	0	0	0	147	1303	0	0	1111	234	2795
445-545	0	0	0	0	0	0	163	1324	0	0	1125	217	2829
500-600	0	0	0	0	0	0	154	1263	0	0	1133	231	2781

PM PEAK HOUR: 445-545



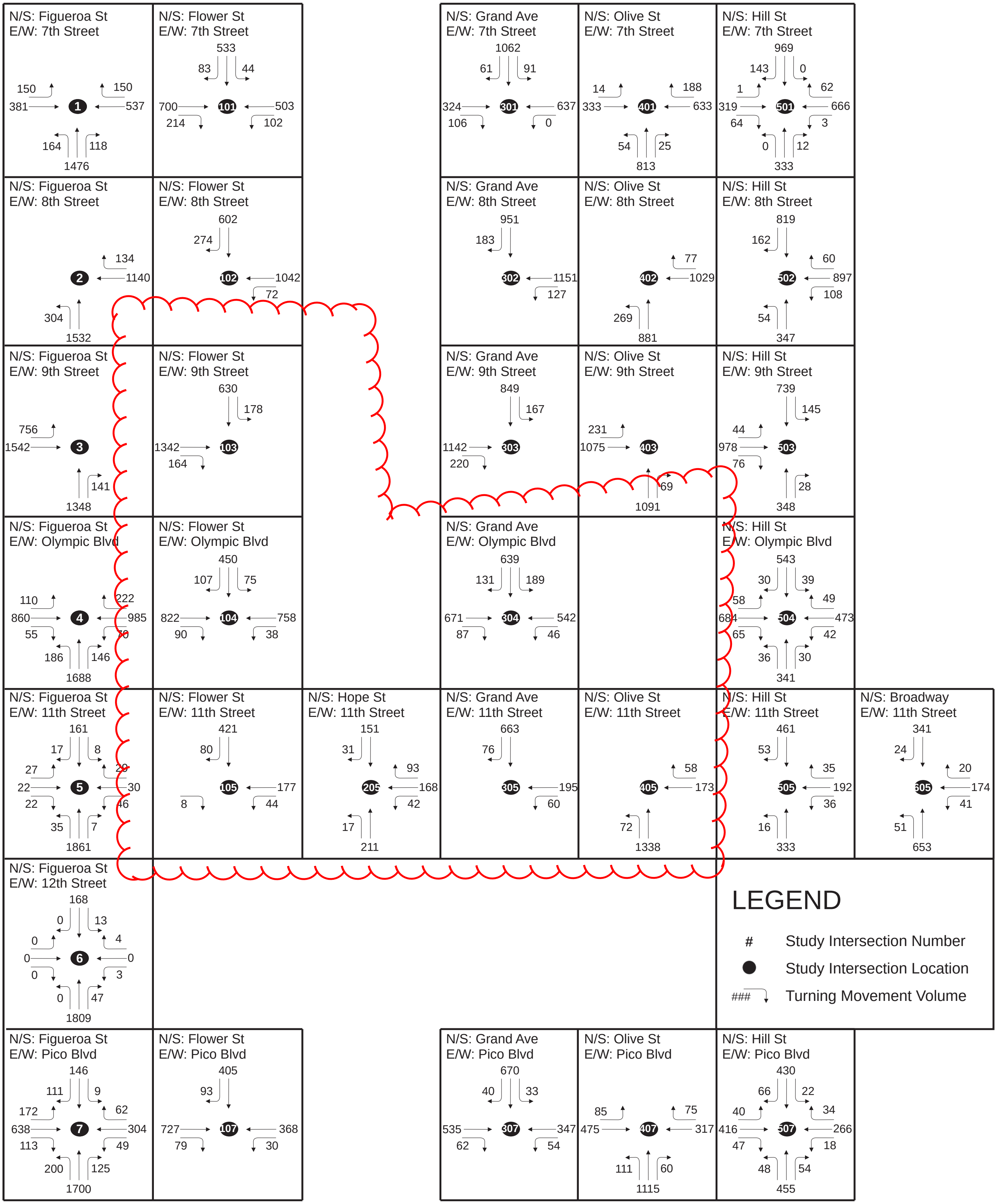
PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	23	36	25	116	200
315-330	45	35	21	63	164
330-345	20	40	20	81	161
345-400	26	50	30	106	212
400-415	27	61	15	101	204
415-430	32	49	16	68	165
430-445	31	52	27	112	222
445-500	25	67	25	102	219
500-515	30	56	41	132	259
515-530	29	48	26	99	202
530-545	23	61	27	124	235
545-600	13	49	28	82	172
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	114	161	96	366	737
315-415	118	186	86	351	741
330-430	105	200	81	356	742
345-445	116	212	88	387	803
400-500	115	229	83	383	810
415-515	118	224	109	414	865
430-530	115	223	119	445	902
445-545	107	232	119	457	915
500-600	95	214	122	437	868

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	1	6	1	4	12
315-330	1	5	2	4	12
330-345	0	3	1	1	5
345-400	0	1	6	2	9
400-415	0	7	3	4	14
415-430	0	4	4	6	14
430-445	1	4	2	5	12
445-500	0	2	2	4	8
500-515	0	6	7	1	14
515-530	3	8	7	1	19
530-545	2	3	7	3	15
545-600	0	5	7	4	16
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	2	15	10	11	38
315-415	1	16	12	11	40
330-430	0	15	14	13	42
345-445	1	16	15	17	49
400-500	1	17	11	19	48
415-515	1	16	15	16	48
430-530	4	20	18	11	53
445-545	5	19	23	9	56
500-600	5	22	28	9	64

Exhibit 4A: Volumes (7th St to Pico Blvd): Existing Condition (2010) - AM Peak



City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

62

STREET:
North/South FLOWER STREET

East/West 9TH STREET

Day: TUESDAY Date: MARCH 15, 2011 Weather: CLEAR

Hours: 300-600PM 600-730PM

School Day YES District: 0 I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	39	41	40	40
BUSES	0	213	105	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
PM1 PK 15 MIN	0	15.00	379	17.45	297	17.45	0	15.00
PM2 PK 15 MIN	0	18.00	332	18.00	317	18.15	0	18.00
PM1 PK HOUR	0	16.30	1308	16.30	1065	16.30	0	16.30
PM2 PK HOUR	0	18.00	1035	18.00	1181	18.00	0	18.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
300-400	0	0	0	0
400-500	0	0	0	0
500-600	0	0	0	0
600-700	0	0	0	0
700-730	0	0	0	0
0	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
300-400	118	640	0	758
400-500	153	1022	0	1175
500-600	155	1248	0	1403
600-700	201	834	0	1035
700-730	62	241	0	303
0	0	0	0	0
TOTAL	689	3985	0	4674

	TOTAL	**XING S/L**		**XING N/L**	
	N-S	Ped	Sch	Ped	Sch
300-400	758	48	0	147	0
400-500	1175	57	0	174	0
500-600	1403	59	0	143	0
600-700	1035	64	0	123	0
700-730	303	54	0	37	0
0	0	0	0	0	0
TOTAL	4674	282	0	624	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
300-400	0	800	167	967
400-500	0	891	160	1051
500-600	0	931	160	1091
600-700	0	1014	167	1181
700-730	0	436	77	513
0	0	0	0	0
TOTAL	0	4072	731	4803

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
300-400	0	0	0	0
400-500	0	0	0	0
500-600	0	0	0	0
600-700	0	0	0	0
700-730	0	0	0	0
0	0	0	0	0
TOTAL	0	0	0	0

	TOTAL	**XING W/L**		**XING E/L**	
	E-W	Ped	Sch	Ped	Sch
300-400	967	56	0	147	0
400-500	1051	51	0	110	0
500-600	1091	60	0	133	0
600-700	1181	60	0	136	0
700-730	513	34	0	98	0
0	0	0	0	0	0
TOTAL	4803	261	0	624	0

(Rev Oct 06)

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

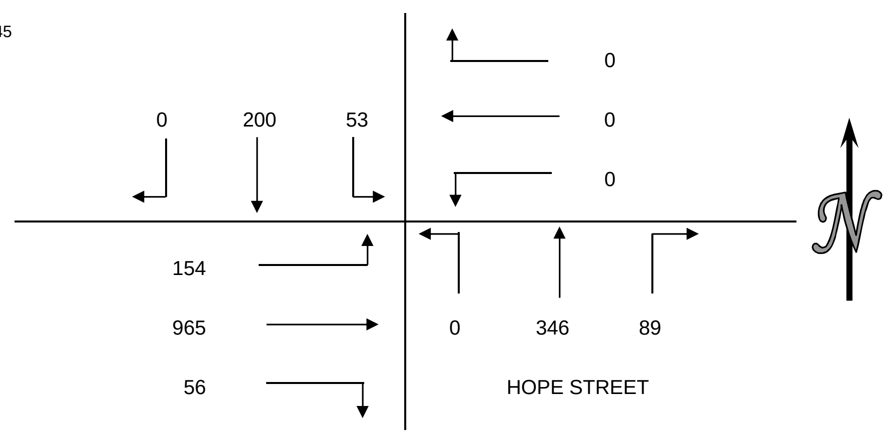
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES
DATE:		THURSDAY JUNE 7, 2012
PERIOD"		7:00 AM TO 9:00 AM
INTERSECTION:	N/S	HOPE STREET
	E/W	9TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	25	11	0	0	0	12	51	0	9	157	31	296
715-730	0	21	12	0	0	0	14	42	0	17	207	37	350
730-745	0	37	14	0	0	0	15	86	0	21	263	37	473
745-800	0	44	13	0	0	0	16	78	0	13	240	38	442
800-815	0	51	17	0	0	0	20	83	0	12	223	37	443
815-830	0	54	10	0	0	0	30	92	0	19	259	38	502
830-845	0	51	13	0	0	0	23	93	0	12	243	41	476
845-900	0	50	15	0	0	0	15	89	0	12	209	45	435
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	0	127	50	0	0	0	57	257	0	60	867	143	1561
715-815	0	153	56	0	0	0	65	289	0	63	933	149	1708
730-830	0	186	54	0	0	0	81	339	0	65	985	150	1860
745-845	0	200	53	0	0	0	89	346	0	56	965	154	1863
800-900	0	206	55	0	0	0	88	357	0	55	934	161	1856

AM PEAK HOUR: 745-845



9TH STREET

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	13	12	21	24	70
715-730	25	21	9	28	83
730-745	31	44	28	24	127
745-800	39	39	19	46	143
800-815	44	52	31	57	184
815-830	50	64	23	58	195
830-845	54	51	31	47	183
845-900	41	34	35	50	160
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	108	116	77	122	423
715-815	139	156	87	155	537
730-830	164	199	101	185	649
745-845	187	206	104	208	705
800-900	189	201	120	212	722

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	2	0	6	1	9
715-730	1	3	13	1	18
730-745	6	2	20	0	28
745-800	4	0	8	0	12
800-815	4	2	4	1	11
815-830	1	1	13	0	15
830-845	4	2	5	2	13
845-900	2	2	6	2	12
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	13	5	47	2	67
715-815	15	7	45	2	69
730-830	15	5	45	1	66
745-845	13	5	30	3	51
800-900	11	7	28	5	51

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

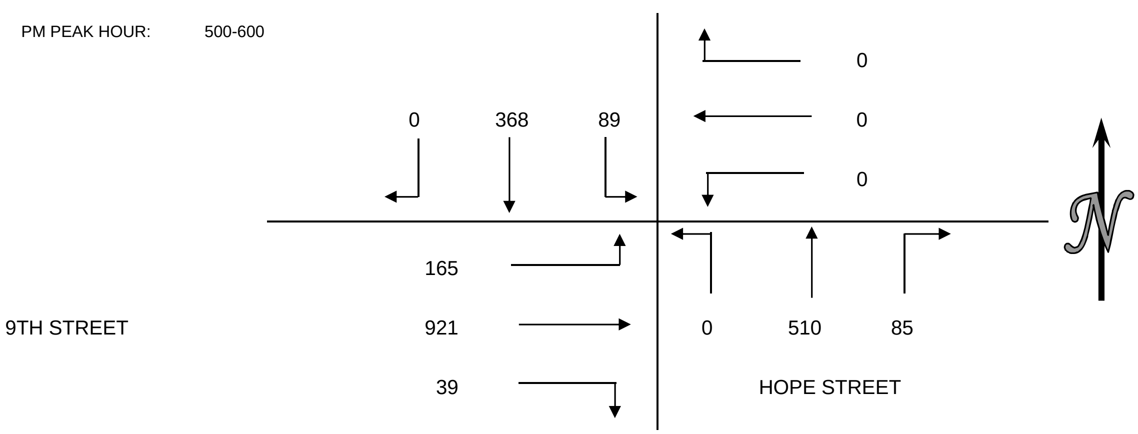
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES
DATE:		THURSDAY JUNE 7, 2012
PERIOD"		4:00 PM TO 6:00 PM
INTERSECTION:	N/S	HOPE STREET
	E/W	9TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	0	57	18	0	0	0	17	76	0	8	161	29	366
415-430	0	51	20	0	0	0	16	87	0	8	202	40	424
430-445	0	59	11	0	0	0	21	79	0	11	219	35	435
445-500	0	68	16	0	0	0	15	91	0	6	237	35	468
500-515	0	85	20	0	0	0	25	107	0	8	239	44	528
515-530	0	103	18	0	0	0	25	156	0	15	263	41	621
530-545	0	91	22	0	0	0	16	120	0	7	224	40	520
545-600	0	89	29	0	0	0	19	127	0	9	195	40	508
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-500	0	235	65	0	0	0	69	333	0	33	819	139	1693
415-515	0	263	67	0	0	0	77	364	0	33	897	154	1855
430-530	0	315	65	0	0	0	86	433	0	40	958	155	2052
445-545	0	347	76	0	0	0	81	474	0	36	963	160	2137
500-600	0	368	89	0	0	0	85	510	0	39	921	165	2177

PM PEAK HOUR: 500-600



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	56	49	47	78	230
415-430	39	42	32	43	156
430-445	48	39	49	59	195
445-500	50	43	49	68	210
500-515	63	55	42	75	235
515-530	62	59	51	65	237
530-545	89	49	41	103	282
545-600	79	83	47	82	291
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	193	173	177	248	791
415-515	200	179	172	245	796
430-530	223	196	191	267	877
445-545	264	206	183	311	964
500-600	293	246	181	325	1045

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	5	5	3	2	15
415-430	1	2	5	5	13
430-445	2	2	1	2	7
445-500	3	1	6	3	13
500-515	4	3	6	3	16
515-530	2	3	11	2	18
530-545	7	1	7	2	17
545-600	3	4	3	1	11
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	11	10	15	12	48
415-515	10	8	18	13	49
430-530	11	9	24	10	54
445-545	16	8	30	10	64
500-600	16	11	27	8	62

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	LOS ANGELES	PROJECT #:	CA10-1203-02
12/1/10	NORTH & SOUTH:	GRAND	LOCATION #:	3
WEDNESDAY	EAST & WEST:	9TH	CONTROL:	SIGNAL

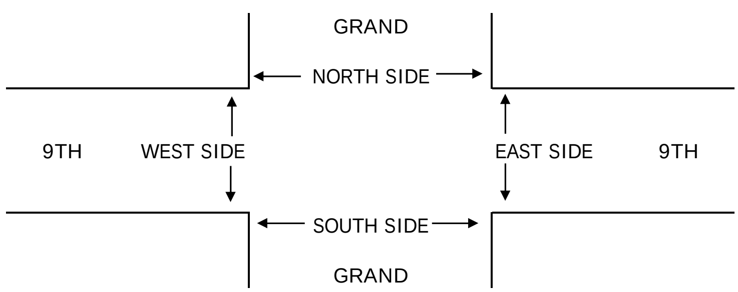
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ ◄ W E ► S ▼

	NORTHBOUND GRAND			SOUTHBOUND GRAND			EASTBOUND 9TH			WESTBOUND 9TH			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	X	X	1	4	X	X	3	1	X	X	X	
AM													
7:00 AM				24	101			170	35				330
7:15 AM				20	117			187	34				358
7:30 AM				38	142			235	55				470
7:45 AM				41	160			324	61				586
8:00 AM				48	209			261	60				578
8:15 AM				44	270			303	52				669
8:30 AM				34	210			254	47				545
8:45 AM				46	167			258	62				533
VOLUMES	0	0	0	295	1,376	0	0	1,992	406	0	0	0	4,069
APPROACH %	0%	0%	0%	18%	82%	0%	0%	83%	17%	0%	0%	0%	
APP/DEPART	0	/	0	1,671	/	1,782	2,398	/	2,287	0	/	0	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	0	0	167	849	0	0	1,142	220	0	0	0	2,378
APPROACH %	0%	0%	0%	16%	84%	0%	0%	84%	16%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.809			0.884			0.000		0.889
APP/DEPART	0	/	0	1,016	/	1,069	1,362	/	1,309	0	/	0	0
PM													
4:00 PM				51	242			151	44				488
4:15 PM				57	274			185	34				550
4:30 PM				38	297			266	41				642
4:45 PM				41	381			236	48				706
5:00 PM				54	376			296	44				770
5:15 PM				58	479			256	50				843
5:30 PM				49	367			301	71				788
5:45 PM				59	348			235	62				704
VOLUMES	0	0	0	407	2,764	0	0	1,926	394	0	0	0	5,491
APPROACH %	0%	0%	0%	13%	87%	0%	0%	83%	17%	0%	0%	0%	
APP/DEPART	0	/	0	3,171	/	3,158	2,320	/	2,333	0	/	0	0
BEGIN PEAK HR		4:45 PM											
VOLUMES	0	0	0	202	1,603	0	0	1,089	213	0	0	0	3,107
APPROACH %	0%	0%	0%	11%	89%	0%	0%	84%	16%	0%	0%	0%	
PEAK HR FACTOR		0.000			0.840			0.875			0.000		0.921
APP/DEPART	0	/	0	1,805	/	1,816	1,302	/	1,291	0	/	0	0

U-TURNS	NB	SB	EB	WB	TTL
	X	X	X	X	
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
AM VOLUMES	0	0	0	0	0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
PM VOLUMES	0	0	0	0	0



	PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM															
7:00 AM	15	12	0	4	31					0	1	0	0	0	1
7:15 AM	10	19	9	1	39					0	2	1	1	2	6
7:30 AM	10	29	9	2	50					0	0	1	3	1	5
7:45 AM	22	12	10	9	53					0	0	3	0	2	5
8:00 AM	7	23	10	10	50					0	1	4	1	3	9
8:15 AM	11	23	11	16	61					0	2	5	2	3	12
8:30 AM	10	16	10	12	48					0	1	2	3	3	9
8:45 AM	10	12	9	15	46					0	1	2	0	3	6
TOTAL	95	146	68	69	378	0	0	0	0	0	8	18	10	17	53
PM															
4:00 PM	19	20	9	18	66					0	2	1	1	3	7
4:15 PM	13	21	8	18	60					0	0	0	0	2	2
4:30 PM	38	32	12	13	95					0	2	1	2	1	6
4:45 PM	18	19	18	14	69					0	1	2	1	1	5
5:00 PM	18	26	9	25	78					0	0	1	1	0	2
5:15 PM	19	26	8	20	73					0	0	2	0	0	2
5:30 PM	23	28	14	22	87					0	3	1	3	2	9
5:45 PM	24	38	16	18	96					0	3	3	1	0	7
TOTAL	172	210	94	148	624	0	0	0	0	0	11	11	9	9	40

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	LOS ANGELES	PROJECT #:	CA10-1203-02
12/1/10	NORTH & SOUTH:	OLIVE	LOCATION #:	7
WEDNESDAY	EAST & WEST:	9TH	CONTROL:	SIGNAL

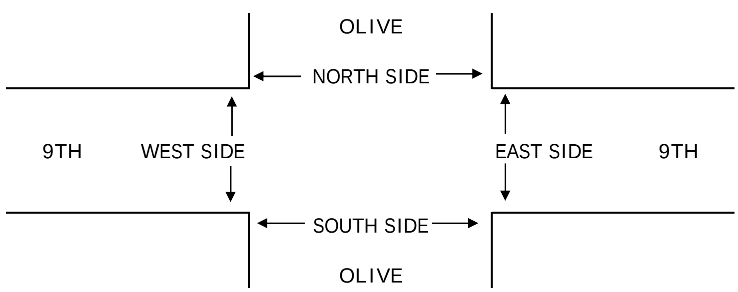
NOTES:

AM PM MD OTHER OTHER

N ▲ S ▼ ◄ W E ►

	NORTHBOUND OLIVE			SOUTHBOUND OLIVE			EASTBOUND 9TH			WESTBOUND 9TH			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	X	4	0	X	X	X	1	4	X	X	X	X	
AM 7:00 AM		127	7				41	147					322
7:15 AM		168	16				49	161					394
7:30 AM		204	20				48	235					507
7:45 AM		268	11				60	309					648
8:00 AM		266	14				56	257					593
8:15 AM		288	19				72	264					643
8:30 AM		269	25				43	245					582
8:45 AM		258	30				63	241					592
VOLUMES	0	1,848	142	0	0	0	432	1,859	0	0	0	0	4,281
APPROACH %	0%	93%	7%	0%	0%	0%	19%	81%	0%	0%	0%	0%	
APP/DEPART	1,990	/	2,280	0	/	0	2,291	/	2,001	0	/	0	0
BEGIN PEAK HR		7:45 AM											
VOLUMES	0	1,091	69	0	0	0	231	1,075	0	0	0	0	2,466
APPROACH %	0%	94%	6%	0%	0%	0%	18%	82%	0%	0%	0%	0%	
PEAK HR FACTOR		0.945			0.000			0.885			0.000		0.951
APP/DEPART	1,160	/	1,322	0	/	0	1,306	/	1,144	0	/	0	0
PM 4:00 PM		194	29				41	180					444
4:15 PM		152	25				45	204					426
4:30 PM		226	48				53	232					559
4:45 PM		220	30				59	224					533
5:00 PM		263	41				44	305					653
5:15 PM		241	31				55	267					594
5:30 PM		275	35				60	294					664
5:45 PM		240	38				57	240					575
VOLUMES	0	1,811	277	0	0	0	414	1,946	0	0	0	0	4,448
APPROACH %	0%	87%	13%	0%	0%	0%	18%	82%	0%	0%	0%	0%	
APP/DEPART	2,088	/	2,225	0	/	0	2,360	/	2,223	0	/	0	0
BEGIN PEAK HR		5:00 PM											
VOLUMES	0	1,019	145	0	0	0	216	1,106	0	0	0	0	2,486
APPROACH %	0%	88%	12%	0%	0%	0%	16%	84%	0%	0%	0%	0%	
PEAK HR FACTOR		0.939			0.000			0.934			0.000		0.936
APP/DEPART	1,164	/	1,235	0	/	0	1,322	/	1,251	0	/	0	0

U-TURNS					
	NB	SB	EB	WB	TTL
	X	X	X	X	
7:00 AM					0
7:15 AM					0
7:30 AM					0
7:45 AM					0
8:00 AM					0
8:15 AM					0
8:30 AM					0
8:45 AM					0
VOLUMES	0	0	0	0	0
4:00 PM					0
4:15 PM					0
4:30 PM					0
4:45 PM					0
5:00 PM					0
5:15 PM					0
5:30 PM					0
5:45 PM					0
VOLUMES	0	0	0	0	0



	PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM 7:00 AM	17	20	18	11	66					0	2	4	2	3	11
7:15 AM	11	27	13	10	61					0	5	4	1	2	12
7:30 AM	20	39	17	12	88					0	0	1	2	0	3
7:45 AM	19	19	8	17	63					0	1	5	1	2	9
8:00 AM	18	22	11	16	67					0	1	3	0	0	4
8:15 AM	16	13	10	12	51					0	1	5	0	1	7
8:30 AM	15	21	11	15	62					0	2	2	1	2	7
8:45 AM	27	12	10	12	61					0	1	3	0	0	4
TOTAL	143	173	98	105	519	0	0	0	0	0	13	27	7	10	57
PM 4:00 PM	19	20	7	8	54					0	3	3	0	0	6
4:15 PM	23	20	3	5	51					0	1	3	1	0	5
4:30 PM	26	22	9	12	69					0	2	5	0	0	7
4:45 PM	24	27	5	5	61					0	4	7	4	2	17
5:00 PM	36	25	9	30	100					0	0	2	0	1	3
5:15 PM	22	27	21	15	85					0	3	1	2	0	6
5:30 PM	23	23	12	9	67					0	3	3	1	0	7
5:45 PM	21	26	17	6	70					0	5	3	3	0	11
TOTAL	194	190	83	90	557	0	0	0	0	0	21	27	11	3	62

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill St

East/West 9th St

Day: Wednesday Date: March 18, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	44	40	132	0
BIKES	54	53	153	65
BUSES	143	164	121	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	136	8.00	161	7.45	335	8.00	0	0.00
PM PK 15 MIN	193	17.30	244	17.00	338	16.45	0	0.00
AM PK HOUR	509	8.00	628	7.30	1174	7.45	0	0.00
PM PK HOUR	670	17.00	946	17.00	1266	16.30	0	0.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	354	32	386
8-9	0	439	70	509
9-10	0	350	97	447
15-16	0	418	77	495
16-17	0	505	83	588
17-18	0	605	65	670
TOTAL	0	2671	424	3095

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	131	490	0	621
8-9	156	431	0	587
9-10	144	392	0	536
15-16	100	578	0	678
16-17	99	778	0	877
17-18	101	845	0	946
TOTAL	731	3514	0	4245

Hours	**TOTAL** N-S	**XING S/L** Ped	Sch	**XING N/L** Ped	Sch
7-8	1007	180	0	88	0
8-9	1096	201	1	120	0
9-10	983	150	2	137	0
15-16	1173	182	0	145	1
16-17	1465	197	3	145	0
17-18	1616	256	1	200	0
TOTAL	7340	1166	7	835	1

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	36	700	42	778
8-9	51	963	51	1065
9-10	42	827	51	920
15-16	59	915	63	1037
16-17	41	1096	55	1192
17-18	34	1108	46	1188
TOTAL	263	5609	308	6180

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

Hours	**TOTAL** E-W	**XING W/L** Ped	Sch	**XING E/L** Ped	Sch
7-8	778	80	0	149	1
8-9	1065	95	1	137	0
9-10	920	85	0	121	0
15-16	1037	91	1	83	0
16-17	1192	86	0	115	0
17-18	1188	127	0	186	0
TOTAL	6180	564	2	791	1

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:

North/South Broadway

East/West 9th St

Day: Wednesday Date: March 18, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	94	58	136	0
BIKES	53	69	162	58
BUSES	239	88	107	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	184	7.45	98	9.30	333	7.45	0	0.00
PM PK 15 MIN	194	17.45	128	17.30	354	17.00	0	0.00
AM PK HOUR	656	7.45	353	9.00	1247	7.45	0	0.00
PM PK HOUR	685	17.00	486	17.00	1355	16.45	0	0.00

NORTHBOUND Approach					**SOUTHBOUND Approach**					**TOTAL**	**XING S/L**		**XING N/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	0	555	57	612	*7-8*	3	259	0	262	874	196	3	121	1
8-9	0	544	82	626	*8-9*	4	298	0	302	928	287	3	195	0
9-10	0	506	115	621	*9-10*	7	346	0	353	974	274	0	226	0
15-16	0	429	87	516	*15-16*	6	375	0	381	897	251	2	230	1
16-17	0	506	89	595	*16-17*	3	461	0	464	1059	249	0	193	0
17-18	0	605	80	685	*17-18*	4	482	0	486	1171	272	0	296	2
TOTAL	0	3145	510	3655	TOTAL	27	2221	0	2248	5903	1529	8	1261	4

EASTBOUND Approach					**WESTBOUND Approach**					**TOTAL**	**XING W/L**		**XING E/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	29	808	24	861	*7-8*	0	0	0	0	861	186	0	144	3
8-9	56	1044	61	1161	*8-9*	0	0	0	0	1161	164	0	135	1
9-10	80	908	61	1049	*9-10*	0	0	0	0	1049	161	1	150	3
15-16	86	938	75	1099	*15-16*	0	0	0	0	1099	178	1	254	1
16-17	127	1064	85	1276	*16-17*	0	0	0	0	1276	214	1	268	0
17-18	169	1057	98	1324	*17-18*	0	0	0	0	1324	208	0	287	2
TOTAL	547	5819	404	6770	TOTAL	0	0	0	0	6770	1111	3	1238	10

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Spring St

East/West 9th St

Day: Tuesday   Date: September 9, 2014   Weather: SUNNY

Hours: 7-10 & 3-6   Chekrs: NDS

School Day: YES   District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	83	46	123	0
BIKES	84	152	165	66
BUSES	350	368	97	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	217	8.30	201	7.45	270	7.45	0	0.00
PM PK 15 MIN	314	17.15	224	17.00	313	17.30	0	0.00
AM PK HOUR	810	8.15	731	7.45	977	7.30	0	0.00
PM PK HOUR	1147	17.00	808	17.00	1102	17.00	0	0.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	0	582	53	635	*7-8*	84	580	0	664	1299	99	0	85	1
8-9	0	721	88	809	*8-9*	109	609	0	718	1527	143	1	99	0
9-10	0	646	98	744	*9-10*	108	538	0	646	1390	134	0	152	1
15-16	0	645	109	754	*15-16*	77	489	0	566	1320	240	0	166	1
16-17	0	851	99	950	*16-17*	56	582	0	638	1588	221	1	146	0
17-18	0	1060	87	1147	*17-18*	70	738	0	808	1955	258	1	190	0
TOTAL	0	4505	534	5039	TOTAL	504	3536	0	4040	9079	1095	3	838	3

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	63	654	35	752	*7-8*	0	0	0	0	752	47	0	95	0
8-9	102	791	61	954	*8-9*	0	0	0	0	954	48	0	90	0
9-10	115	524	46	685	*9-10*	0	0	0	0	685	71	0	94	0
15-16	152	545	60	757	*15-16*	0	0	0	0	757	93	0	119	1
16-17	244	620	53	917	*16-17*	0	0	0	0	917	105	0	109	0
17-18	291	754	57	1102	*17-18*	0	0	0	0	1102	130	0	142	1
TOTAL	967	3888	312	5167	TOTAL	0	0	0	0	5167	494	0	649	2

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Spring St and 9th St , Los Angeles

Date: 9/9/2014
Day: Tuesday

Project #: 14-5578-010
City: Los Angeles

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Spring St / **9th St**

N

Southbound Approach

	Lanes 0	Lanes 3	Lanes 1	Out
AM	0	622	109	798
NOON	0	0	0	0
PM	0	738	70	1351

Eastbound Approach

	Out	Lanes 1	Lanes 3	Lanes 0
AM	0	91	823	54
NOON	0	0	0	0
PM	0	291	754	57

Westbound Approach

	Lanes 0	Lanes 0	Lanes 0	Out
AM	0	0	0	1012
NOON	0	0	0	0
PM	0	0	0	911

Northbound Approach

	Out	Lanes 0	Lanes 3	Lanes 0
AM	676	0	707	80
NOON	0	0	0	0
PM	795	0	1060	87

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg			
AM	731	798	
NOON	0	0	
PM	808	1351	

West Leg	AM	NOON	PM
	0	0	0
	968	0	1102

East Leg	AM	NOON	PM
	0	0	0
	1012	0	911

South Leg		
AM	676	787
NOON	0	0
PM	795	1147

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1529	0	2159
West Leg	968	0	1102
East Leg	1012	0	911
South Leg	1463	0	1942

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

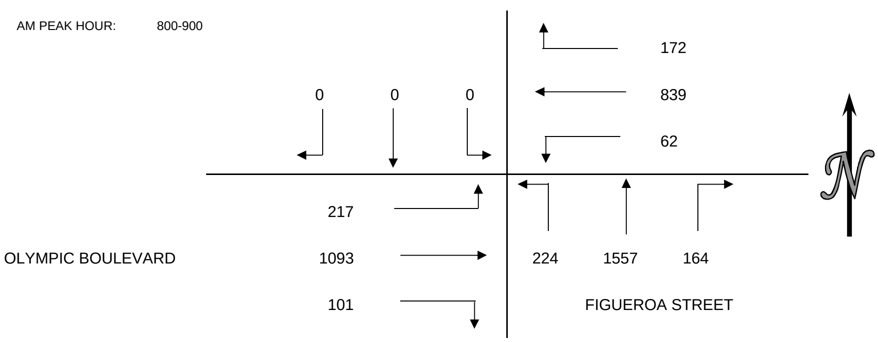
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	OLYMPIC BOULEVARD
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	0	0	0	36	195	11	16	264	44	20	107	31	724
715-730	0	0	0	41	216	13	26	338	43	19	157	33	886
730-745	0	0	0	42	194	17	20	446	66	22	198	52	1057
745-800	0	0	0	33	189	15	30	425	52	20	280	40	1084
800-815	0	0	0	45	207	13	40	379	47	28	273	57	1089
815-830	0	0	0	37	190	19	42	353	66	23	276	51	1057
830-845	0	0	0	50	232	18	31	411	62	24	273	63	1164
845-900	0	0	0	40	210	12	51	414	49	26	271	46	1119
900-915	0	0	0	58	184	20	28	313	51	28	212	59	953
915-930	0	0	0	39	173	18	43	260	51	24	225	62	895
930-945	0	0	0	50	177	18	24	208	42	24	203	50	796
945-1000	0	0	0	61	169	16	33	207	30	29	196	32	773
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	0	0	0	152	794	56	92	1473	205	81	742	156	3751
715-815	0	0	0	161	806	58	116	1588	208	89	908	182	4116
730-830	0	0	0	157	780	64	132	1603	231	93	1027	200	4287
745-845	0	0	0	165	818	65	143	1568	227	95	1102	211	4394
800-900	0	0	0	172	839	62	164	1557	224	101	1093	217	4429
815-915	0	0	0	185	816	69	152	1491	228	101	1032	219	4293
830-930	0	0	0	187	799	68	153	1398	213	102	981	230	4131
845-945	0	0	0	187	744	68	146	1195	193	102	911	217	3763
900-1000	0	0	0	208	703	72	128	988	174	105	836	203	3417

AM PEAK HOUR: 800-900



PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	19	5	8	8	40
715-730	18	7	10	14	49
730-745	19	5	14	34	72
745-800	25	10	11	21	67
800-815	24	13	19	24	80
815-830	25	6	10	16	57
830-845	18	12	13	29	72
854-900	25	9	11	19	64
900-915	33	7	20	25	85
915-930	22	8	15	27	72
930-945	25	6	22	24	77
945-1000	30	12	31	32	105
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	81	27	43	77	228
715-815	86	35	54	93	268
730-830	93	34	54	95	276
745-845	92	41	53	90	276
800-900	92	40	53	88	273
815-915	101	34	54	89	278
830-930	98	36	59	100	293
845-945	105	30	68	95	298
900-1000	110	33	88	108	339

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	9	2	5	8	24
715-730	0	3	9	1	13
730-745	6	3	5	4	18
745-800	3	5	4	4	16
800-815	3	2	2	0	7
815-830	0	1	4	2	7
830-845	2	2	4	2	10
845-900	4	1	2	2	9
900-915	3	0	4	0	7
915-930	1	2	4	4	11
930-945	2	3	3	3	11
945-1000	2	2	5	0	9
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	18	13	23	17	71
715-815	12	13	20	9	54
730-830	12	11	15	10	48
745-845	8	10	14	8	40
800-900	9	6	12	6	33
815-915	9	4	14	6	33
830-930	10	5	14	8	37
845-945	10	6	13	9	38
900-1000	8	7	16	7	38

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

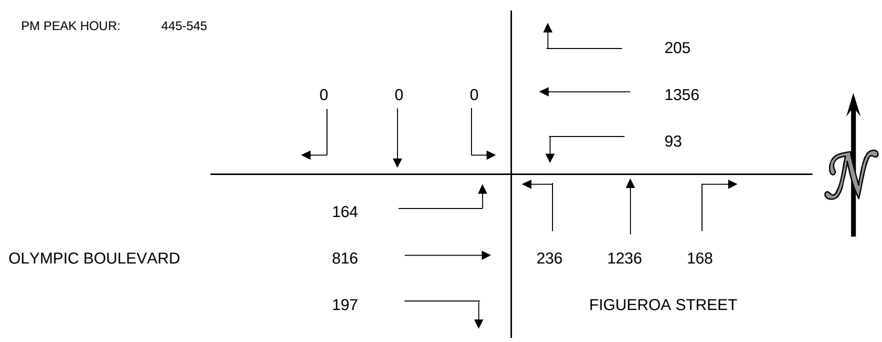
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	FIGUEROA STREET
	E/W	OLYMPIC BOULEVARD
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	0	0	0	60	226	26	35	249	60	44	164	43	907
315-330	0	0	0	44	247	23	31	251	45	35	154	45	875
330-345	0	0	0	57	217	27	31	280	51	60	162	44	929
345-400	0	0	0	56	233	23	29	336	45	48	174	45	989
400-415	0	0	0	49	264	19	43	317	65	48	201	38	1044
415-430	0	0	0	48	282	29	25	298	63	37	190	46	1018
430-445	0	0	0	55	280	20	38	303	59	48	199	49	1051
445-500	0	0	0	52	316	22	40	317	51	50	227	32	1107
500-515	0	0	0	43	336	26	44	322	65	43	189	43	1111
515-530	0	0	0	58	348	23	43	300	55	54	196	43	1120
530-545	0	0	0	52	356	22	41	297	65	50	204	46	1133
545-600	0	0	0	55	378	21	32	300	55	50	156	46	1093
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	0	0	0	217	923	99	126	1116	201	187	654	177	3700
315-415	0	0	0	206	961	92	134	1184	206	191	691	172	3837
330-430	0	0	0	210	996	98	128	1231	224	193	727	173	3980
345-445	0	0	0	208	1059	91	135	1254	232	181	764	178	4102
400-500	0	0	0	204	1142	90	146	1235	238	183	817	165	4220
415-515	0	0	0	198	1214	97	147	1240	238	178	805	170	4287
430-530	0	0	0	208	1280	91	165	1242	230	195	811	167	4389
445-545	0	0	0	205	1356	93	168	1236	236	197	816	164	4471
500-600	0	0	0	208	1418	92	160	1219	240	197	745	178	4457

PM PEAK HOUR: 445-545



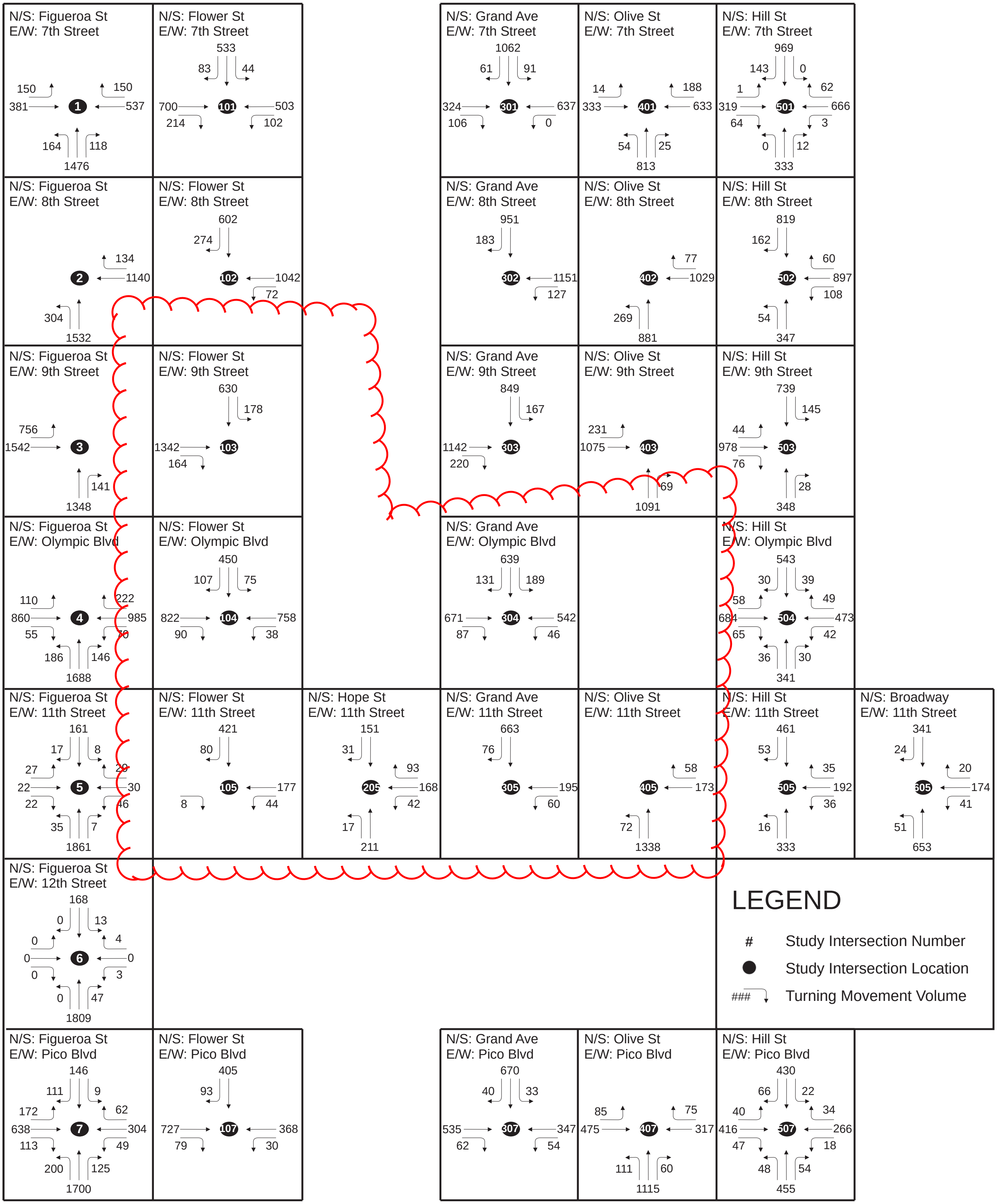
PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	34	35	38	59	166
315-330	34	34	23	63	154
330-345	36	25	41	61	163
345-400	38	18	33	43	132
400-415	32	63	50	33	178
415-430	31	22	42	49	144
430-445	71	28	29	67	195
445-500	48	26	46	73	193
500-515	53	23	38	55	169
515-530	68	29	29	76	202
530-545	68	24	99	59	250
545-600	50	35	44	43	172
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	142	112	135	226	615
315-415	140	140	147	200	627
330-430	137	128	166	186	617
345-445	172	131	154	192	649
400-500	182	139	167	222	710
415-515	203	99	155	244	701
430-530	240	106	142	271	759
445-545	237	102	212	263	814
500-600	239	111	210	233	793

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	1	3	2	1	7
315-330	4	6	8	3	21
330-345	1	7	2	4	14
345-400	2	6	2	5	15
400-415	6	5	5	4	20
415-430	4	4	2	0	10
430-445	0	1	4	4	9
445-500	4	6	4	4	18
500-515	5	3	5	3	16
515-530	3	6	4	2	15
530-545	7	0	7	7	21
545-600	5	2	4	3	14
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	8	22	14	13	57
315-415	13	24	17	16	70
330-430	13	22	11	13	59
345-445	12	16	13	13	54
400-500	14	16	15	12	57
415-515	13	14	15	11	53
430-530	12	16	17	13	58
445-545	19	15	20	16	70
500-600	20	11	20	15	66

Exhibit 4A: Volumes (7th St to Pico Blvd): Existing Condition (2010) - AM Peak



City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

4

STREET:
North/South FLOWER STREET

East/West OLYMPIC BOULEVARD

Day: TUESDAY Date: MARCH 15, 2011 Weather: CLEAR

Hours: 300-600PM 600-730PM

School Day YES District: 0 I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	49	82	26	26
BUSES	0	223	49	54

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
PM1 PK 15 MIN	0	15.00	421	17.30	253	17.30	297	17.45
PM2 PK 15 MIN	0	18.00	310	18.15	213	18.00	305	18.30
PM1 PK HOUR	0	16.30	1408	16.30	781	16.30	968	16.30
PM2 PK HOUR	0	18.00	1041	18.00	753	18.00	1138	18.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
300-400	0	0	0	0	*300-400*	63	604	204	871	871	67	0	72	0
400-500	0	0	0	0	*400-500*	55	899	290	1244	1244	55	0	79	0
500-600	0	0	0	0	*500-600*	59	1064	360	1483	1483	50	0	92	0
600-700	0	0	0	0	*600-700*	53	727	261	1041	1041	84	0	97	0
700-730	0	0	0	0	*700-730*	23	176	130	329	329	30	0	25	0
0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	TOTAL	253	3470	1245	4968	4968	286	0	365	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
300-400	0	620	57	677	*300-400*	45	768	0	813	1490	48	0	62	0
400-500	0	722	61	783	*400-500*	38	880	0	918	1701	57	0	32	0
500-600	0	776	54	830	*500-600*	46	1079	0	1125	1955	38	0	61	0
600-700	0	698	55	753	*600-700*	32	1106	0	1138	1891	68	0	48	0
700-730	0	263	29	292	*700-730*	14	404	0	418	710	12	0	46	0
0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0
TOTAL	0	3079	256	3335	TOTAL	175	4237	0	4412	7747	223	0	249	0

(Rev Oct 06)

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

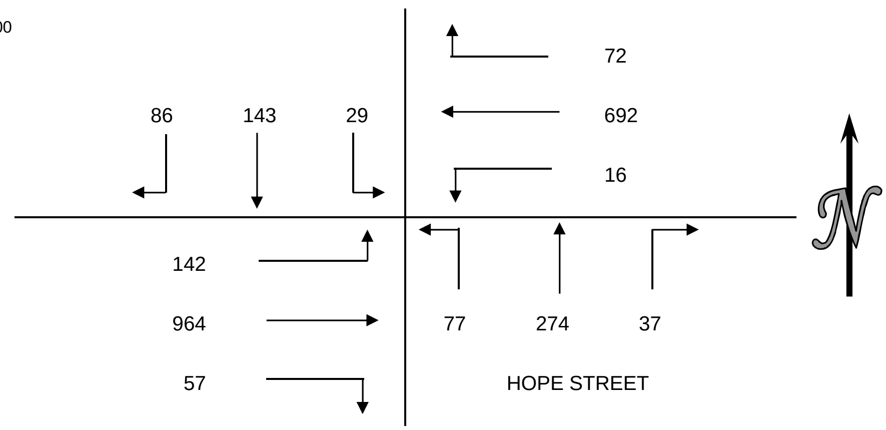
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES
DATE:		THURSDAY JUNE 7, 2012
PERIOD"		7:00 AM TO 9:00 AM
INTERSECTION:	N/S	HOPE STREET
	E/W	OLYMPIC BOULEVARD
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	18	23	6	14	121	7	8	36	6	9	120	10	378
715-730	15	23	2	13	162	3	7	33	12	6	130	15	421
730-745	21	31	6	9	167	7	4	50	18	10	188	19	530
745-800	24	32	7	9	197	3	9	68	11	11	228	23	622
800-815	18	39	4	20	159	3	9	72	21	8	201	27	581
815-830	21	32	12	16	186	4	12	67	19	17	250	33	669
830-845	20	36	6	20	179	4	6	69	23	13	239	38	653
845-900	27	36	7	16	168	5	10	66	14	19	274	44	686
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	78	109	21	45	647	20	28	187	47	36	666	67	1951
715-815	78	125	19	51	685	16	29	223	62	35	747	84	2154
730-830	84	134	29	54	709	17	34	257	69	46	867	102	2402
745-845	83	139	29	65	721	14	36	276	74	49	918	121	2525
800-900	86	143	29	72	692	16	37	274	77	57	964	142	2589

AM PEAK HOUR: 800-900



OLYMPIC BOULEVARD

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	16	10	19	11	56
715-730	28	11	15	18	72
730-745	16	11	11	14	52
745-800	24	12	18	17	71
800-815	36	15	13	17	81
815-830	67	18	17	23	125
830-845	56	24	27	24	131
845-900	37	21	32	37	127
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	84	44	63	60	251
715-815	104	49	57	66	276
730-830	143	56	59	71	329
745-845	183	69	75	81	408
800-900	196	78	89	101	464

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	2	1	8	1	12
715-730	1	1	7	0	9
730-745	3	1	5	0	9
745-800	1	0	8	1	10
800-815	2	1	4	0	7
815-830	1	1	7	2	11
830-845	2	1	3	3	9
845-900	2	3	3	0	8
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	7	3	28	2	40
715-815	7	3	24	1	35
730-830	7	3	24	3	37
745-845	6	3	22	6	37
800-900	7	6	17	5	35

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

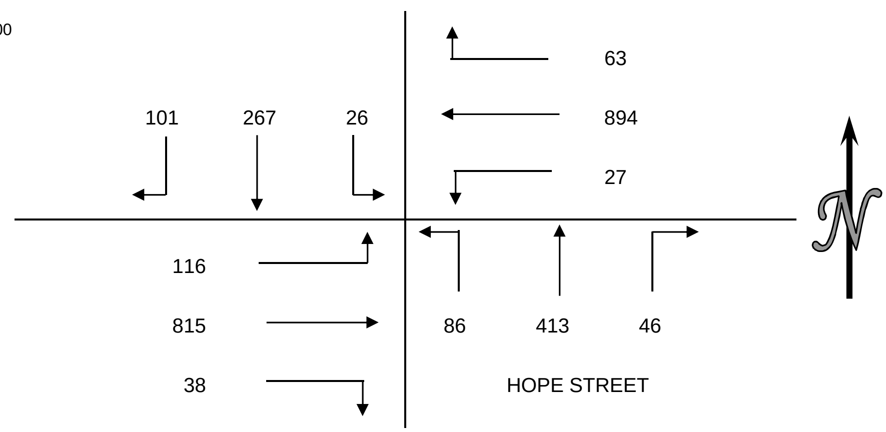
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES
DATE:		THURSDAY JUNE 7, 2012
PERIOD"		4:00 PM TO 6:00 PM
INTERSECTION:	N/S	HOPE STREET
	E/W	OLYMPIC BOULEVARD
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-415	20	47	8	8	220	4	11	75	20	8	178	30	629
415-430	26	51	5	16	215	1	15	82	20	7	219	28	685
430-445	15	51	4	20	221	10	11	67	19	9	190	36	653
445-500	22	46	6	13	235	3	11	74	16	10	220	30	686
500-515	25	59	5	13	234	11	12	102	16	8	206	27	718
515-530	26	75	10	8	245	2	9	92	12	9	196	25	709
530-545	31	72	7	23	210	10	14	110	21	11	221	41	771
545-600	19	61	4	19	205	4	11	109	37	10	192	23	694
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
400-500	83	195	23	57	891	18	48	298	75	34	807	124	2653
415-515	88	207	20	62	905	25	49	325	71	34	835	121	2742
430-530	88	231	25	54	935	26	43	335	63	36	812	118	2766
445-545	104	252	28	57	924	26	46	378	65	38	843	123	2884
500-600	101	267	26	63	894	27	46	413	86	38	815	116	2892

PM PEAK HOUR: 500-600



OLYMPIC BOULEVARD

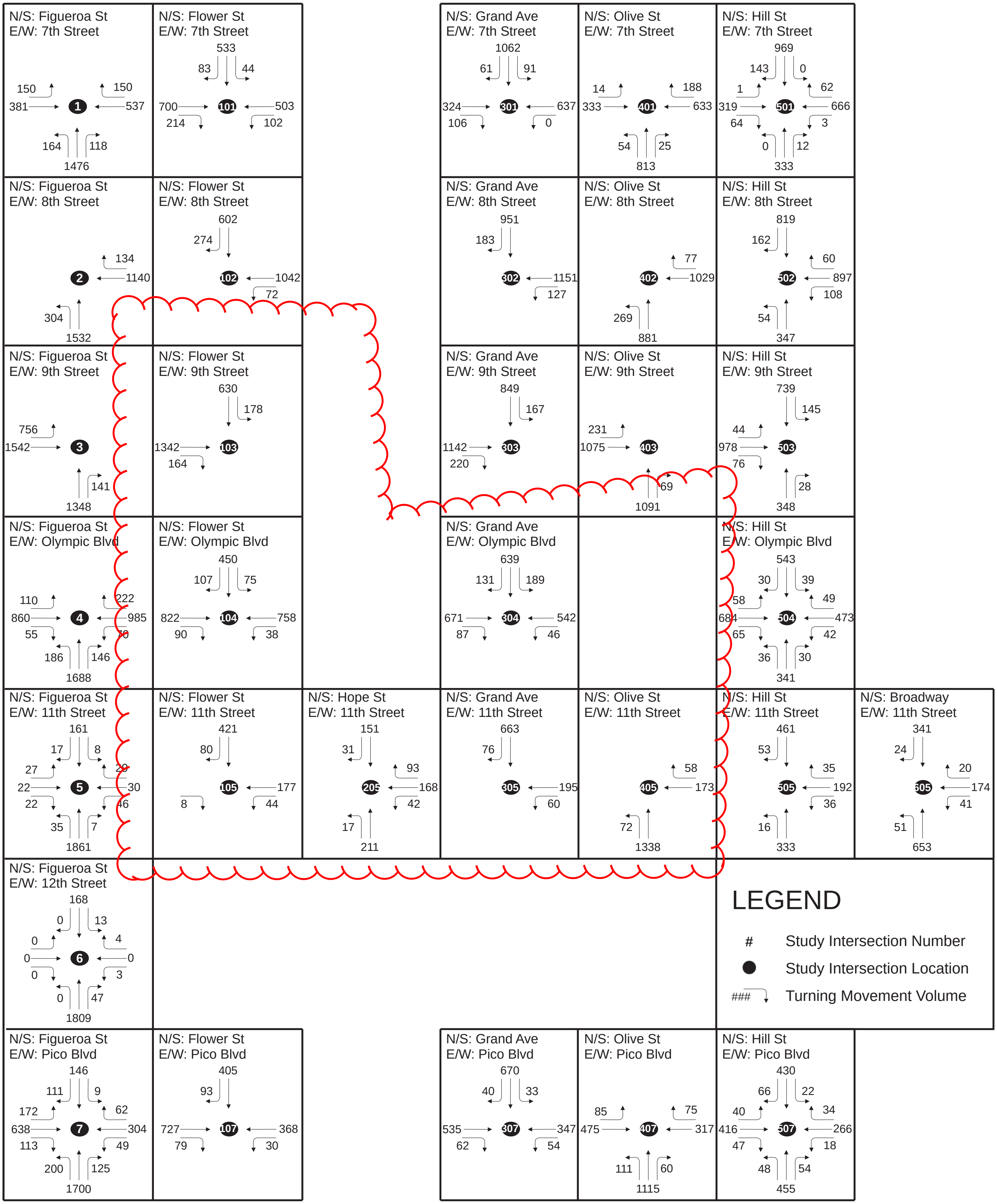
PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	77	24	42	32	175
415-430	53	27	41	26	147
430-445	56	22	47	36	161
445-500	77	24	48	30	179
500-515	80	36	41	27	184
515-530	60	15	35	25	135
530-545	68	20	63	41	192
545-600	86	22	38	23	169
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	263	97	178	124	662
415-515	266	109	177	119	671
430-530	273	97	171	118	659
445-545	285	95	187	123	690
500-600	294	93	177	116	680

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-415	1	3	5	2	11
415-430	6	4	1	4	15
430-445	1	2	0	2	5
445-500	7	8	3	0	18
500-515	4	0	4	0	8
515-530	3	4	3	0	10
530-545	10	1	0	1	12
545-600	10	2	3	0	15
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
400-500	15	17	9	8	49
415-515	18	14	8	6	46
430-530	15	14	10	2	41
445-545	24	13	10	1	48
500-600	27	7	10	1	45

Exhibit 4A: Volumes (7th St to Pico Blvd): Existing Condition (2010) - AM Peak



City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

5

STREET:
North/South Grand Ave

East/West Olympic Blvd

Day: Tuesday Date: March 15, 2011 Weather: SUNNY

Hours: 3-730PM 8-11PM Chekrs: 0

School Day: YES District: 0 I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	22	48	55	80
BUSES	0	266	69	59

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
NOON PK 15 MIN	0	16.30	440	17.15	232	17.00	288	17.00
PM PK 15 MIN	0	21.00	91	21.45	69	21.45	94	21.00
NOON PK HOUR	0	16.30	1522	16.30	819	16.30	1029	16.30
PM PK HOUR	0	21.00	333	21.00	223	21.00	266	21.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
18-19	0	0	0	0
19-20	0	0	0	0
20-21	0	0	0	0
21-22	0	0	0	0
22-23	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	N-S	S/L Ped	S/L Sch	N/L Ped	N/L Sch
15-16	82	572	138	792	792	111	0	130	0
16-17	89	919	184	1192	1192	111	0	125	0
17-18	93	1295	234	1622	1622	146	0	143	0
18-19	57	892	204	1153	1153	135	0	102	0
19-20	19	258	77	354	354	63	0	56	0
20-21	28	264	100	392	392	57	0	41	0
21-22	29	193	111	333	333	58	0	33	0
22-23	15	178	64	257	257	118	0	47	0
TOTAL	412	4571	1112	6095	6095	799	0	677	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
15-16	0	621	71	692
16-17	0	663	87	750
17-18	0	745	92	837
18-19	0	624	101	725
19-20	0	211	48	259
20-21	0	241	50	291
21-22	0	179	44	223
22-23	0	169	32	201
TOTAL	0	3453	525	3978

WESTBOUND Approach / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	E-W	W/L Ped	W/L Sch	E/L Ped	E/L Sch
15-16	81	711	0	792	1484	130	0	87	0
16-17	81	780	0	861	1611	149	0	61	0
17-18	88	1027	0	1115	1952	179	0	75	0
18-19	85	919	0	1004	1729	105	0	48	0
19-20	41	336	0	377	636	38	0	33	0
20-21	55	289	0	344	635	73	0	49	0
21-22	37	229	0	266	489	46	0	23	0
22-23	25	156	0	181	382	51	0	28	0
TOTAL	493	4447	0	4940	8918	771	0	404	0

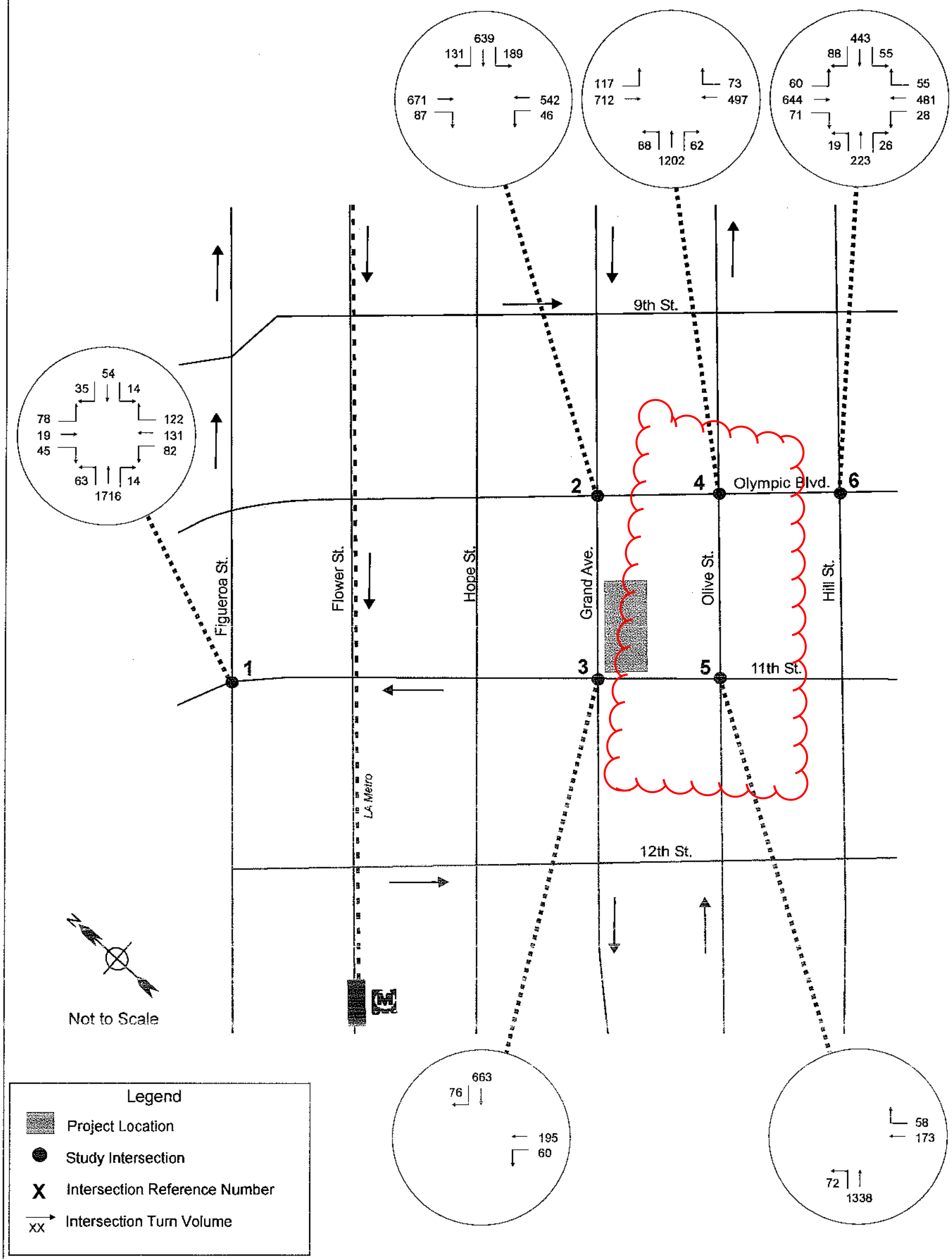


Figure 4
Existing Traffic Volumes - AM Peak Hour

Grand Avenue & 11th Street Project

The Mobility Group
Transportation Strategies & Solutions

4802-CEN-08

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

6

STREET:
North/South Olive St

East/West Olympic Blvd

Day: Tuesday Date: March 15, 2011 Weather: SUNNY

Hours: 3-730PM 8-11PM Chekrs: 0

School Day: YES District: 0 I/S CODE: 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	22	14	52	78
BUSES	238	0	90	61

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
NOON PK 15 MIN	258	17.15	0	16.30	237	17.00	264	17.15
PM PK 15 MIN	41	21.00	0	21.00	63	21.45	79	21.00
NOON PK HOUR	965	16.30	0	16.30	834	16.30	971	16.30
PM PK HOUR	148	21.00	0	21.00	203	21.00	232	21.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
15-16	79	539	45	663	*15-16*	0	0	0	0	663	51	0	59	0
16-17	92	724	35	851	*16-17*	0	0	0	0	851	67	0	83	0
17-18	129	853	39	1021	*17-18*	0	0	0	0	1021	46	0	65	0
18-19	112	802	23	937	*18-19*	0	0	0	0	937	72	0	75	0
19-20	36	204	5	245	*19-20*	0	0	0	0	245	27	0	32	0
20-21	47	157	9	213	*20-21*	0	0	0	0	213	17	0	20	0
21-22	31	109	8	148	*21-22*	0	0	0	0	148	16	0	16	0
22-23	31	108	4	143	*22-23*	0	0	0	0	143	24	0	21	0
TOTAL	557	3496	168	4221	TOTAL	0	0	0	0	4221	320	0	371	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
15-16	111	587	0	698	*15-16*	0	699	91	790	1488	30	0	27	0
16-17	105	619	0	724	*16-17*	0	761	78	839	1563	23	0	48	0
17-18	135	705	0	840	*17-18*	0	991	63	1054	1894	22	0	41	0
18-19	105	557	0	662	*18-19*	0	892	75	967	1629	30	0	29	0
19-20	41	182	0	223	*19-20*	0	331	19	350	573	11	0	10	0
20-21	61	200	0	261	*20-21*	0	278	22	300	561	30	0	12	0
21-22	56	147	0	203	*21-22*	0	219	13	232	435	13	0	13	0
22-23	54	144	0	198	*22-23*	0	170	16	186	384	22	0	8	0
TOTAL	668	3141	0	3809	TOTAL	0	4341	377	4718	8527	181	0	188	0

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill St

East/West Olympic Blvd

Day: Wednesday Date: March 18, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	42	44	101	84
BIKES	48	49	62	65
BUSES	160	134	94	131

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	122	8.45	135	7.00	243	8.45	197	8.00
PM PK 15 MIN	161	17.30	242	17.30	206	15.00	176	15.00
AM PK HOUR	461	8.15	533	7.00	937	8.30	745	7.45
PM PK HOUR	626	17.00	942	17.00	778	16.15	659	15.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	18	351	29	398
8-9	44	379	32	455
9-10	25	337	45	407
15-16	52	317	60	429
16-17	37	448	64	549
17-18	41	534	51	626
TOTAL	217	2366	281	2864

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	37	390	106	533
8-9	49	363	78	490
9-10	56	274	97	427
15-16	40	484	112	636
16-17	39	700	116	855
17-18	37	764	141	942
TOTAL	258	2975	650	3883

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	931	91	0	45	0
8-9	945	66	0	24	0
9-10	834	86	0	25	0
15-16	1065	112	0	52	0
16-17	1404	94	0	41	0
17-18	1568	135	1	65	0
TOTAL	6747	584	1	252	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	50	520	70	640
8-9	72	744	51	867
9-10	70	725	59	854
15-16	56	612	71	739
16-17	46	641	79	766
17-18	62	636	51	749
TOTAL	356	3878	381	4615

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	57	617	41	715
8-9	53	603	71	727
9-10	48	564	84	696
15-16	49	541	69	659
16-17	47	542	65	654
17-18	37	529	63	629
TOTAL	291	3396	393	4080

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1355	56	0	83	0
8-9	1594	52	0	78	0
9-10	1550	49	1	60	0
15-16	1398	61	0	70	0
16-17	1420	68	0	79	0
17-18	1378	85	0	87	0
TOTAL	8695	371	1	457	0

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Broadway

East/West Olympic Blvd

Day: Wednesday Date: March 18, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	84	71	104	90
BIKES	61	61	61	62
BUSES	241	86	111	130

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	185	8.30	111	9.30	236	9.00	207	8.00
PM PK 15 MIN	179	17.45	154	17.30	205	16.30	189	15.45
AM PK HOUR	709	8.15	401	9.00	905	8.30	749	7.15
PM PK HOUR	659	17.00	566	17.00	782	16.30	726	15.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	33	564	31	628	*7-8*	2	215	69	286	914	57	0	59	0
8-9	48	582	70	700	*8-9*	2	252	98	352	1052	68	0	75	0
9-10	47	499	83	629	*9-10*	5	279	117	401	1030	81	0	70	0
15-16	23	363	65	451	*15-16*	6	351	105	462	913	105	3	60	0
16-17	36	470	75	581	*16-17*	5	425	87	517	1098	62	0	98	0
17-18	38	551	70	659	*17-18*	2	446	118	566	1225	121	2	127	0
TOTAL	225	3029	394	3648	TOTAL	22	1968	594	2584	6232	494	5	489	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	44	462	45	551	*7-8*	95	613	21	729	1280	89	0	69	0
8-9	42	751	43	836	*8-9*	51	600	34	685	1521	83	0	60	0
9-10	74	694	62	830	*9-10*	60	564	54	678	1508	81	0	70	0
15-16	71	592	68	731	*15-16*	90	554	82	726	1457	103	0	58	0
16-17	61	634	73	768	*16-17*	76	523	73	672	1440	108	1	62	0
17-18	68	618	75	761	*17-18*	76	485	67	628	1389	113	0	87	0
TOTAL	360	3751	366	4477	TOTAL	448	3339	331	4118	8595	577	1	406	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	LOS ANGELES	PROJECT #:	CA09-0807-1
8/4/09	NORTH & SOUTH:	MAIN	LOCATION #:	17
TUESDAY	EAST & WEST:	OLYMPIC	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

▲ N
◄ W   E ►
S ▼

		NORTHBOUND MAIN			SOUTHBOUND MAIN			EASTBOUND OLYMPIC			WESTBOUND OLYMPIC			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	1	1	3	0	1	2	0	
AM	6:45 AM													0
	7:00 AM	6	75	4	5	61	25	13	54	6	9	73	1	332
	7:15 AM	20	115	9	3	72	28	20	75	8	3	80	7	440
	7:30 AM	14	127	12	12	95	34	16	112	13	5	86	5	531
	7:45 AM	19	157	12	13	115	29	21	122	11	3	89	3	594
	8:00 AM	14	169	18	15	119	36	32	145	14	7	97	9	675
	8:15 AM	17	153	20	14	121	31	28	141	27	6	86	9	653
	8:30 AM	16	179	16	19	119	30	24	139	17	4	90	7	660
	8:45 AM	11	182	19	23	97	21	19	123	17	9	81	11	613
	9:00 AM													0
	VOLUMES	117	1,157	110	104	799	234	173	911	113	46	682	52	4,498
	APPROACH %	8%	84%	8%	9%	70%	21%	14%	76%	9%	6%	87%	7%	
	APP/DEPART	1,384	/	1,382	1,137	/	958	1,197	/	1,125	780	/	1,033	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	58	683	73	71	456	118	103	548	75	26	354	36	2,601
	APPROACH %	7%	84%	9%	11%	71%	18%	14%	75%	10%	6%	85%	9%	
	PEAK HR FACTOR		0.960			0.949			0.926			0.920		0.963
	APP/DEPART	814	/	822	645	/	557	726	/	692	416	/	530	0
MIDDAY	10:45 AM													0
	11:00 AM													0
	11:15 AM													0
	11:30 AM													0
	11:45 AM													0
	12:00 PM													0
	12:15 PM													0
	12:30 PM													0
	12:45 PM													0
	1:00 PM													0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		1:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	3:45 PM													0
	4:00 PM	7	178	26	11	132	31	29	114	12	14	119	19	692
	4:15 PM	10	187	23	10	132	40	31	124	17	15	135	22	746
	4:30 PM	12	193	27	16	145	54	30	119	21	16	150	25	808
	4:45 PM	10	179	31	8	146	41	44	114	14	22	129	29	767
	5:00 PM	10	163	19	9	171	62	43	108	27	19	125	26	782
	5:15 PM	20	156	18	11	153	54	31	127	21	17	147	24	779
	5:30 PM	11	168	17	9	142	41	39	139	17	17	149	29	778
	5:45 PM	21	179	18	8	137	33	41	127	18	14	150	26	772
	6:00 PM													0
	VOLUMES	101	1,403	179	82	1,158	356	288	972	147	134	1,104	200	6,124
	APPROACH %	6%	83%	11%	5%	73%	22%	20%	69%	10%	9%	77%	14%	
	APP/DEPART	1,683	/	1,891	1,596	/	1,439	1,407	/	1,233	1,438	/	1,561	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	52	691	95	44	615	211	148	468	83	74	551	104	3,136
	APPROACH %	6%	82%	11%	5%	71%	24%	21%	67%	12%	10%	76%	14%	
	PEAK HR FACTOR		0.903			0.899			0.976			0.954		0.970
	APP/DEPART	838	/	943	870	/	772	699	/	607	729	/	814	0

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South FIGUEROA ST

East/West 11TH ST / CHICK HEARN COURT

Day: TUESDAY Date: March 23, 2010 Weather: SUNNY

Hours: 7-10AM 3-6PM Chekrs: LEE

School Day: YES District: CENTRAL I/S CODE 8924

	N/B	S/B	E/B	W/B
DUAL-WHEELED	203	50	48	54
BIKES	0	0	0	0
BUSES	196	0	0	170

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	486	8.00	60	9.30	30	7.45	50	7.30
PM PK 15 MIN	398	5.30	82	5.15	48	3.00	235	5.45
AM PK HOUR	1903	8.00	204	8.45	89	7.30	170	7.00
PM PK HOUR	1526	5.00	306	5.00	147	5.00	785	5.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	28	1323	3	1354
8-9	35	1861	7	1903
9-10	48	1414	5	1467
3-4	6	1374	1	1381
4-5	0	1337	0	1337
5-6	4	1522	0	1526
TOTAL	121	8831	16	8968

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	2	123	11	136
8-9	8	161	17	186
9-10	8	172	20	200
3-4	3	214	35	252
4-5	8	239	21	268
5-6	7	269	30	306
TOTAL	36	1178	134	1348

Hours	TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
7-8	1490	0	0	0	0
8-9	2089	0	0	0	0
9-10	1667	0	0	0	0
3-4	1633	0	0	0	0
4-5	1605	0	0	0	0
5-6	1832	0	0	0	0
TOTAL	10316	0	0	0	0

EASTBOUND Approach
CHICK HEARN COURT

Hours	Lt	Th	Rt	Total
7-8	18	24	46	88
8-9	27	22	22	71
9-10	28	26	32	86
3-4	50	44	50	144
4-5	58	35	38	131
5-6	68	32	47	147
TOTAL	249	183	235	667

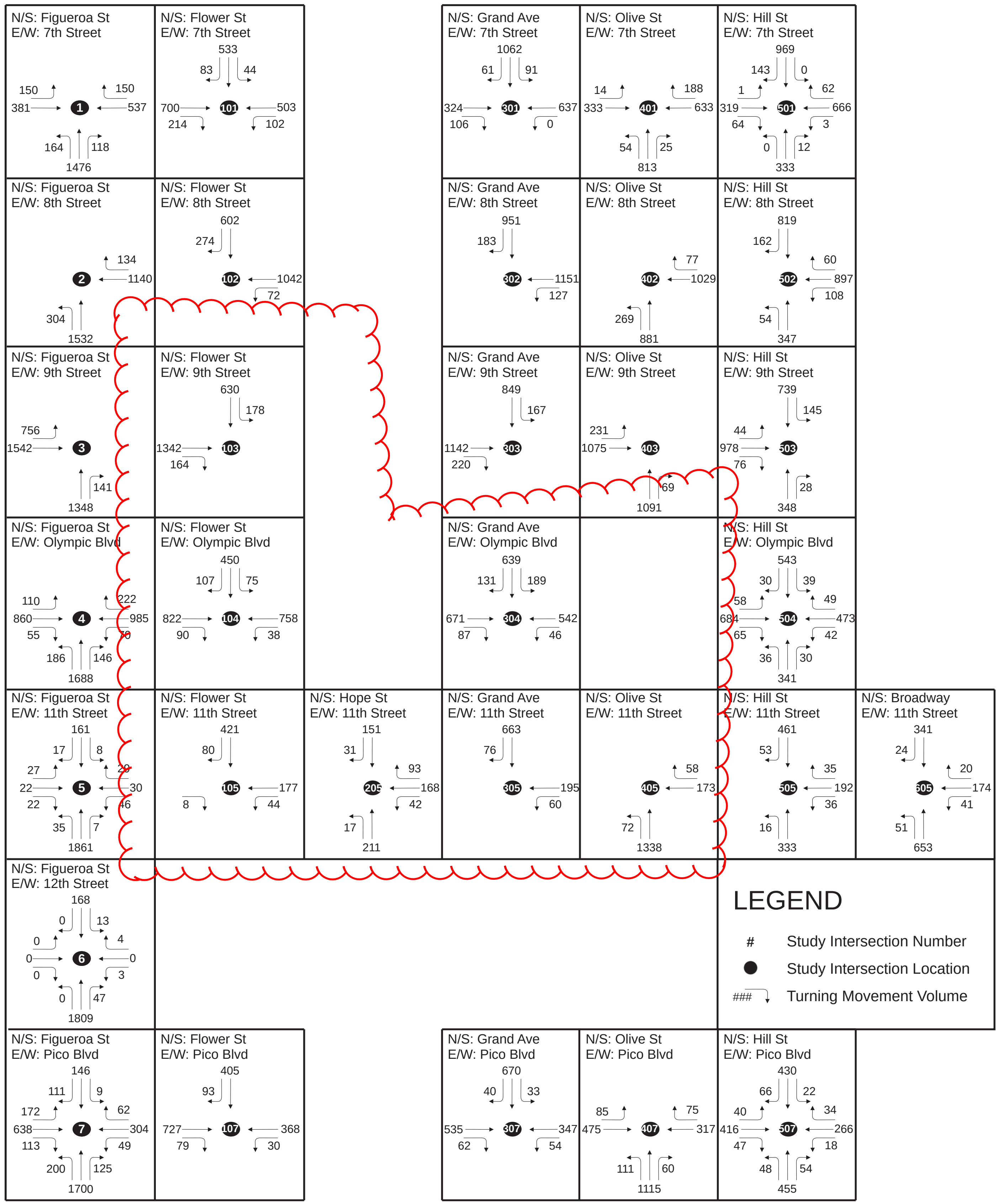
WESTBOUND Approach
11TH ST

Hours	Lt	Th	Rt	Total
7-8	64	55	51	170
8-9	46	30	29	105
9-10	35	36	41	112
3-4	82	130	171	383
4-5	117	192	148	457
5-6	173	357	255	785
TOTAL	517	800	695	2012

Hours	TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
7-8	258	0	0	0	0
8-9	176	0	0	0	0
9-10	198	0	0	0	0
3-4	527	0	0	0	0
4-5	588	0	0	0	0
5-6	932	0	0	0	0
TOTAL	2679	0	0	0	0

(Rev Oct 06)

Exhibit 4A: Volumes (7th St to Pico Blvd): Existing Condition (2010) - AM Peak



City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

12

STREET:
North/South FLOWER STREET

East/West 11TH STREET

Day: TUESDAY Date: MARCH 15, 2011 Weather: CLEAR

Hours: 300-600PM 600-730PM

School Day YES District: 0 I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	23	18	26	26
BUSES	0	172	6	6

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
PM1 PK 15 MIN	0	15.00	331	17.15	14	17.15	135	17.30
PM2 PK 15 MIN	0	18.00	267	18.00	13	18.00	145	18.00
PM1 PK HOUR	0	16.30	1228	16.30	34	16.30	375	16.30
PM2 PK HOUR	0	18.00	819	18.00	47	18.00	440	18.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
300-400	0	0	0	0	*300-400*	0	581	120	701	701	61	0	74	0
400-500	0	0	0	0	*400-500*	0	857	186	1043	1043	60	0	44	0
500-600	0	0	0	0	*500-600*	0	1034	199	1233	1233	66	0	47	0
600-700	0	0	0	0	*600-700*	0	692	127	819	819	53	0	52	0
700-730	0	0	0	0	*700-730*	0	219	43	262	262	44	0	34	0
0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	TOTAL	0	3383	675	4058	4058	284	0	251	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
300-400	0	0	30	30	*300-400*	33	173	0	206	236	18	0	47	0
400-500	0	0	29	29	*400-500*	45	233	0	278	307	29	0	35	0
500-600	0	0	44	44	*500-600*	69	413	0	482	526	39	0	60	0
600-700	0	0	47	47	*600-700*	49	391	0	440	487	27	0	50	0
700-730	0	0	12	12	*700-730*	27	86	0	113	125	12	0	26	0
0	0	0	0	0	*0*	0	0	0	0	0	0	0	0	0
TOTAL	0	0	162	162	TOTAL	223	1296	0	1519	1681	125	0	218	0

(Rev Oct 06)

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	LOS ANGELES	PROJECT #:	CA10-0910-01
9/8/10	NORTH & SOUTH:	HOPE	LOCATION #:	4
WEDNESDAY	EAST & WEST:	11TH	CONTROL:	SIGNAL

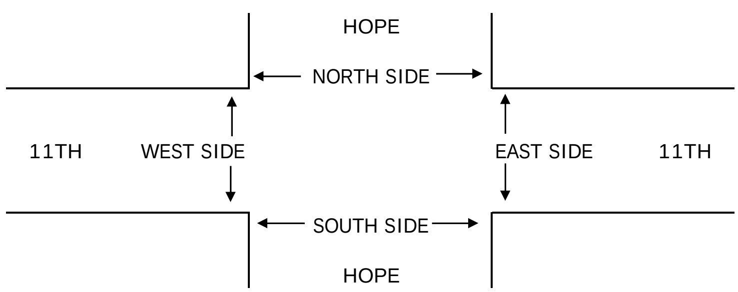
ALL CLASSES

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N / ◄ W / E ► / S ▼

		NORTHBOUND HOPE			SOUTHBOUND HOPE			EASTBOUND 11TH			WESTBOUND 11TH				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	0	2	X	X	2	0	X	X	X	0	2	0						
AM	7:00 AM	2	28	0	0	25	5	0	0	0	6	20	9	95	0	0	0	0	0
	7:15 AM	3	31	0	0	20	9	0	0	0	9	20	11	103	0	0	0	0	0
	7:30 AM	7	44	0	0	40	11	0	0	0	16	34	16	168	0	0	0	0	0
	7:45 AM	2	61	0	0	42	11	0	0	0	7	26	21	170	0	0	0	0	0
	8:00 AM	5	49	0	0	36	10	0	0	0	10	41	19	170	0	0	0	0	0
	8:15 AM	5	53	0	0	47	8	0	0	0	14	38	28	193	0	0	0	0	0
	8:30 AM	4	52	0	0	34	7	0	0	0	10	46	22	175	0	0	0	0	0
	8:45 AM	3	57	0	0	34	6	0	0	0	8	43	24	175	0	0	0	0	0
	VOLUMES	31	375	0	0	278	67	0	0	0	80	268	150	1,249	0	0	0	0	0
	APPROACH %	8%	92%	0%	0%	81%	19%	0%	0%	0%	16%	54%	30%						
	APP/DEPART	406	/	525	345	/	358	0	/	0	498	/	366	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	17	211	0	0	151	31	0	0	0	42	168	93	713					
	APPROACH %	7%	93%	0%	0%	83%	17%	0%	0%	0%	14%	55%	31%						
	PEAK HR FACTOR		0.950			0.827			0.000			0.947		0.924					
	APP/DEPART	228	/	304	182	/	193	0	/	0	303	/	216	0					
PM	4:00 PM	4	49	0	0	40	11	0	0	0	1	46	12	163	0	0	0	0	0
	4:15 PM	2	37	0	0	43	12	0	0	0	8	49	20	171	0	0	0	0	0
	4:30 PM	4	42	0	0	60	10	0	0	0	8	59	17	200	0	0	0	0	0
	4:45 PM	0	35	0	0	41	15	0	0	0	9	44	22	166	0	0	0	0	0
	5:00 PM	5	32	0	0	65	9	0	0	0	6	86	24	227	0	0	0	0	0
	5:15 PM	3	48	0	0	66	16	0	0	0	11	91	21	256	0	0	0	0	0
	5:30 PM	6	63	0	0	64	10	0	0	0	10	98	41	292	0	0	0	0	0
	5:45 PM	9	55	0	0	74	20	0	0	0	10	114	30	312	0	0	0	0	0
	VOLUMES	33	361	0	0	453	103	0	0	0	63	587	187	1,787	0	0	0	0	0
	APPROACH %	8%	92%	0%	0%	81%	19%	0%	0%	0%	8%	70%	22%						
	APP/DEPART	394	/	548	556	/	516	0	/	0	837	/	723	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	23	198	0	0	269	55	0	0	0	37	389	116	1,087					
	APPROACH %	10%	90%	0%	0%	83%	17%	0%	0%	0%	7%	72%	21%						
	PEAK HR FACTOR		0.801			0.862			0.000			0.880		0.871					
	APP/DEPART	221	/	314	324	/	306	0	/	0	542	/	467	0					



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
	7:30 AM	0	0	1	2	3	0	0	0	0	0	0	0	1	2	3
	7:45 AM	0	3	2	1	6	0	0	0	0	0	0	3	2	1	6
	8:00 AM	3	0	0	1	4	0	0	0	0	0	3	0	0	1	4
	8:15 AM	1	0	0	1	2	0	0	0	0	0	1	0	0	1	2
	8:30 AM	2	2	0	2	6	0	0	0	0	0	2	2	0	2	6
	8:45 AM	1	1	0	0	2	0	0	0	0	0	1	1	0	0	2
	TOTAL	7	8	3	7	25	0	0	0	0	0	7	8	3	7	25
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	1	1	2	0	0	0	0	0	0	0	1	1	2
	4:30 PM	0	2	0	2	4	0	0	0	0	0	0	2	0	2	4
	4:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2
	5:00 PM	1	0	0	2	3	0	0	0	0	0	1	0	0	2	3
	5:15 PM	0	1	1	3	5	0	0	0	0	0	0	1	1	3	5
	5:30 PM	1	0	1	4	6	0	0	0	0	0	1	0	1	4	6
	5:45 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	2	2
	TOTAL	2	5	3	14	24	0	0	0	0	0	2	5	3	14	24

WILTEC

Phone: (626) 564-1944 Fax: (626) 564-0969

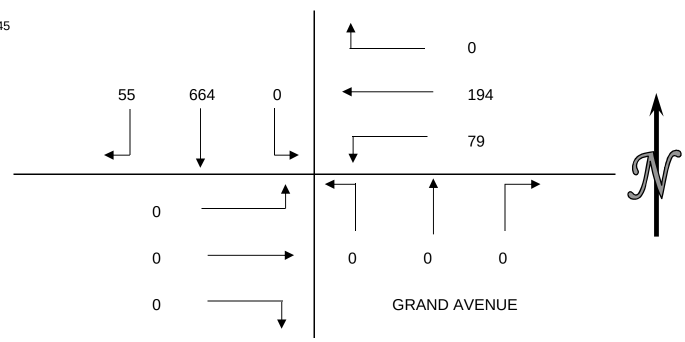
INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		7:00 AM TO 10:00 AM
INTERSECTION:	N/S	GRAND AVENUE
	E/W	11TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-715	3	95	0	0	23	13	0	0	0	0	0	0	134
715-730	7	123	0	0	24	10	0	0	0	0	0	0	164
730-745	6	156	0	0	30	15	0	0	0	0	0	0	207
745-800	10	184	0	0	43	29	0	0	0	0	0	0	266
800-815	15	179	0	0	47	20	0	0	0	0	0	0	261
815-830	10	152	0	0	56	14	0	0	0	0	0	0	232
830-845	20	149	0	0	48	16	0	0	0	0	0	0	233
845-900	16	174	0	0	41	22	0	0	0	0	0	0	253
900-915	12	160	0	0	51	10	0	0	0	0	0	0	233
915-930	16	141	0	0	44	18	0	0	0	0	0	0	219
930-945	14	123	0	0	36	10	0	0	0	0	0	0	183
945-1000	18	134	0	0	45	12	0	0	0	0	0	0	209
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
700-800	26	558	0	0	120	67	0	0	0	0	0	0	771
715-815	38	642	0	0	144	74	0	0	0	0	0	0	898
730-830	41	671	0	0	176	78	0	0	0	0	0	0	966
745-845	55	664	0	0	194	79	0	0	0	0	0	0	992
800-900	61	654	0	0	192	72	0	0	0	0	0	0	979
815-915	58	635	0	0	196	62	0	0	0	0	0	0	951
830-930	64	624	0	0	184	66	0	0	0	0	0	0	938
845-945	58	598	0	0	172	60	0	0	0	0	0	0	888
900-1000	60	558	0	0	176	50	0	0	0	0	0	0	844

AM PEAK HOUR: 745-845



11TH STREET

PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	10	5	21	17	53
715-730	19	4	25	18	66
730-745	24	3	28	29	84
745-800	25	8	37	26	96
800-815	19	7	16	14	56
815-830	11	2	14	16	43
830-845	7	5	20	15	47
854-900	8	2	16	13	39
900-915	13	2	18	14	47
915-930	10	1	10	17	38
930-945	15	4	9	7	35
945-1000	8	8	16	13	45
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	78	20	111	90	299
715-815	87	22	106	87	302
730-830	79	20	95	85	279
745-845	62	22	87	71	242
800-900	45	16	66	58	185
815-915	39	11	68	58	176
830-930	38	10	64	59	171
845-945	46	9	53	51	159
900-1000	46	15	53	51	165

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-715	0	0	0	4	4
715-730	1	1	1	1	4
730-745	0	0	1	1	2
745-800	1	0	2	2	5
800-815	3	1	1	3	8
815-830	1	0	0	2	3
830-845	1	2	0	1	4
845-900	3	0	2	1	6
900-915	0	0	2	0	2
915-930	0	0	0	0	0
930-945	1	0	1	1	3
945-1000	1	0	1	2	4
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
700-800	2	1	4	8	15
715-815	5	2	5	7	19
730-830	5	1	4	8	18
745-845	6	3	3	8	20
800-900	8	3	3	7	21
815-915	5	2	4	4	15
830-930	4	2	4	2	12
845-945	4	0	5	2	11
900-1000	2	0	4	3	9

WILTEC

Phone: (925) 706-9911 Fax: (925) 706-9914

INTERSECTION CAR/PED/BIKE TRAFFIC COUNT RESULTS SUMMARY

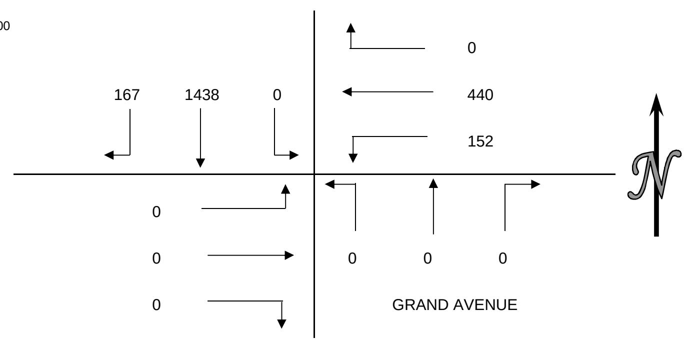
CLIENT:		INTUEOR
PROJECT:		DOWNTOWN LOS ANGELES TRAFFIC COUNTS
DATE:		THURSDAY NOVEMBER 15,2012
PERIOD"		3:00 PM TO 6:00 PM
INTERSECTION:	N/S	GRAND AVENUE
	E/W	11TH STREET
CITY:		LOS ANGELES

VEHICLE COUNTS

15 MIN COUNTS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-315	21	186	0	0	57	27	0	0	0	0	0	0	291
315-330	20	197	0	0	45	23	0	0	0	0	0	0	285
330-345	29	208	0	0	50	23	0	0	0	0	0	0	310
345-400	20	209	0	0	47	25	0	0	0	0	0	0	301
400-415	28	247	0	0	59	31	0	0	0	0	0	0	365
415-430	27	262	0	0	43	35	0	0	0	0	0	0	367
430-445	23	275	0	0	61	28	0	0	0	0	0	0	387
445-500	21	303	0	0	83	40	0	0	0	0	0	0	447
500-515	35	348	0	0	116	41	0	0	0	0	0	0	540
515-530	43	379	0	0	91	44	0	0	0	0	0	0	557
530-545	44	375	0	0	113	29	0	0	0	0	0	0	561
545-600	45	336	0	0	120	38	0	0	0	0	0	0	539
HOUR TOTALS	1	2	3	4	5	6	7	8	9	10	11	12	
PERIOD	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	EBRT	EBTH	EBLT	TOTAL
300-400	90	800	0	0	199	98	0	0	0	0	0	0	1187
315-415	97	861	0	0	201	102	0	0	0	0	0	0	1261
330-430	104	926	0	0	199	114	0	0	0	0	0	0	1343
345-445	98	993	0	0	210	119	0	0	0	0	0	0	1420
400-500	99	1087	0	0	246	134	0	0	0	0	0	0	1566
415-515	106	1188	0	0	303	144	0	0	0	0	0	0	1741
430-530	122	1305	0	0	351	153	0	0	0	0	0	0	1931
445-545	143	1405	0	0	403	154	0	0	0	0	0	0	2105
500-600	167	1438	0	0	440	152	0	0	0	0	0	0	2197

PM PEAK HOUR: 500-600

11TH STREET



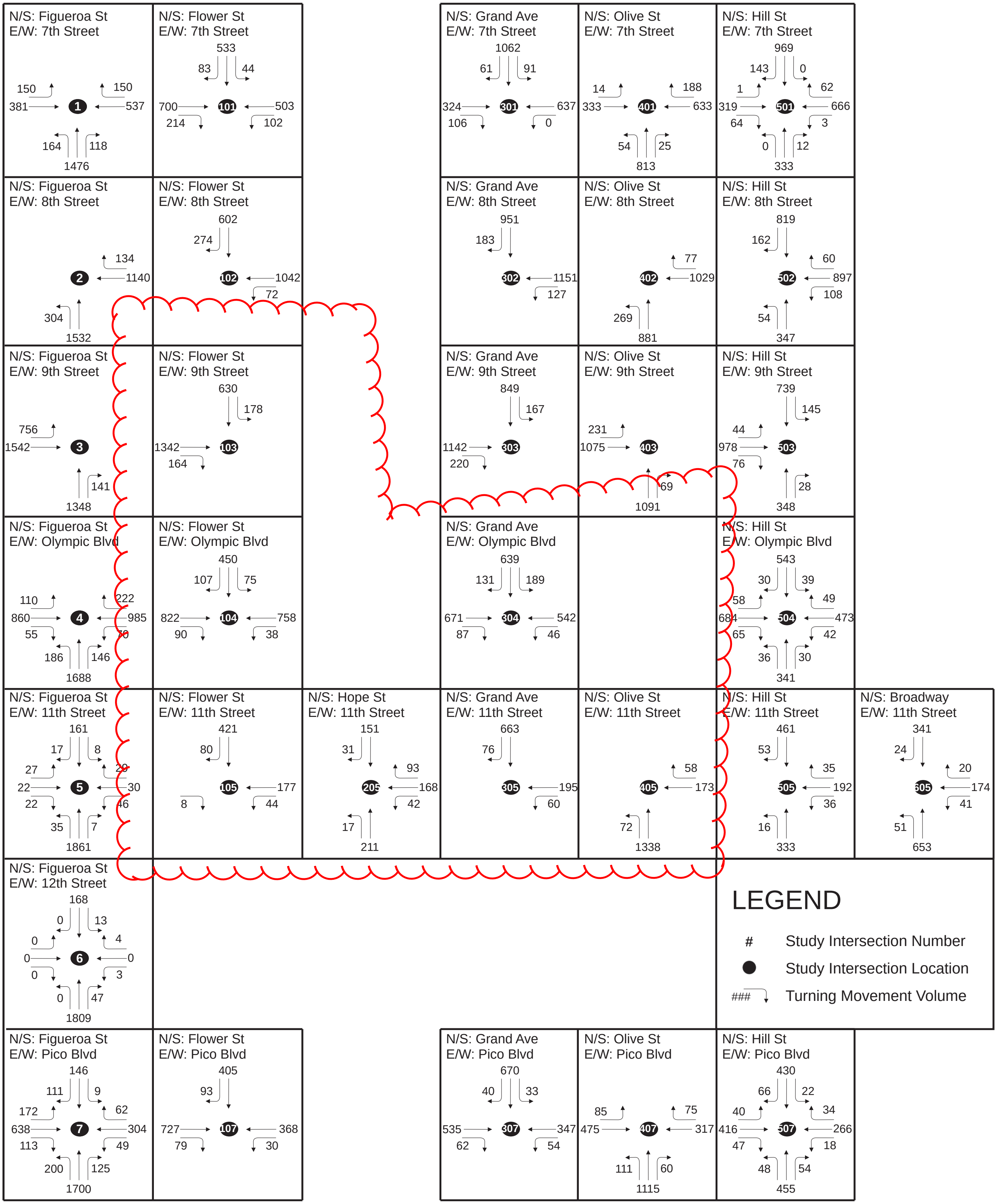
PEDESTRIAN COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	4	4	7	16	31
315-330	6	5	8	8	27
330-345	4	6	8	7	25
345-400	12	3	23	15	53
400-415	31	9	29	12	81
415-430	9	5	19	27	60
430-445	9	8	24	14	55
445-500	12	3	27	18	60
500-515	8	3	19	14	44
515-530	10	0	8	13	31
530-545	10	4	23	11	48
545-600	7	6	13	13	39
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	26	18	46	46	136
315-415	53	23	68	42	186
330-430	56	23	79	61	219
345-445	61	25	95	68	249
400-500	61	25	99	71	256
415-515	38	19	89	73	219
430-530	39	14	78	59	190
445-545	40	10	77	56	183
500-600	35	13	63	51	162

BICYCLE COUNTS

15 MIN COUNTS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-315	1	1	1	1	4
315-330	0	0	3	3	6
330-345	3	0	1	2	6
345-400	1	2	0	1	4
400-415	1	1	1	1	4
415-430	1	1	4	3	9
430-445	0	0	2	0	2
445-500	2	1	2	3	8
500-515	0	1	0	1	2
515-530	2	2	2	1	7
530-545	0	0	2	0	2
545-600	2	0	0	0	2
HOUR TOTALS	NORTH	EAST	SOUTH	WEST	TOTAL
PERIOD	LEG	LEG	LEG	LEG	
300-400	5	3	5	7	20
315-415	5	3	5	7	20
330-430	6	4	6	7	23
345-445	3	4	7	5	19
400-500	4	3	9	7	23
415-515	3	3	8	7	21
430-530	4	4	6	5	19
445-545	4	4	6	5	19
500-600	4	3	4	2	13

Exhibit 4A: Volumes (7th St to Pico Blvd): Existing Condition (2010) - AM Peak



City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

14

STREET:
North/South Olive St

East/West 11th St

Day: Tuesday Date: March 15, 2011 Weather: SUNNY

Hours: 3-730PM 8-11PM Chekrs: 0

School Day: YES District: 0 I/S CODE 0

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	0	0	0
BIKES	22	11	5	52
BUSES	239	0	0	27

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
NOON PK 15 MIN	263	17.15	0	16.30	0	16.30	133	17.15
PM PK 15 MIN	47	21.00	0	21.00	0	21.00	15	21.45
NOON PK HOUR	983	16.30	0	16.30	0	16.30	417	16.30
PM PK HOUR	176	21.00	0	21.00	0	21.00	41	21.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
15-16	105	628	0	733	*15-16*	0	0	0	0	733	64	0	55	0
16-17	109	767	0	876	*16-17*	0	0	0	0	876	62	0	42	0
17-18	124	895	0	1019	*17-18*	0	0	0	0	1019	52	0	43	0
18-19	176	821	0	997	*18-19*	0	0	0	0	997	34	0	45	0
19-20	80	233	0	313	*19-20*	0	0	0	0	313	18	0	11	0
20-21	61	190	0	251	*20-21*	0	0	0	0	251	30	0	15	0
21-22	37	139	0	176	*21-22*	0	0	0	0	176	10	0	9	0
22-23	21	72	0	93	*22-23*	0	0	0	0	93	30	0	17	0
TOTAL	713	3745	0	4458	TOTAL	0	0	0	0	4458	300	0	237	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
15-16	0	0	0	0	*15-16*	0	204	40	244	244	23	0	33	0
16-17	0	0	0	0	*16-17*	0	268	72	340	340	14	0	34	0
17-18	0	0	0	0	*17-18*	0	469	114	583	583	10	0	26	0
18-19	0	0	0	0	*18-19*	0	521	98	619	619	22	0	17	0
19-20	0	0	0	0	*19-20*	0	98	23	121	121	1	0	4	0
20-21	0	0	0	0	*20-21*	0	57	13	70	70	9	0	4	0
21-22	0	0	0	0	*21-22*	0	34	7	41	41	3	0	3	0
22-23	0	0	0	0	*22-23*	0	34	13	47	47	12	0	5	0
TOTAL	0	0	0	0	TOTAL	0	1685	380	2065	2065	94	0	126	0

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Hill St

East/West 11th St

Day: Wednesday Date: March 18, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	34	48	0	64
BIKES	41	######	26	72
BUSES	161	203	0	10

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	128	7.45	131	8.00	0	0.00	74	7.30
PM PK 15 MIN	144	17.30	248	16.45	0	0.00	223	17.45
AM PK HOUR	466	7.30	511	7.15	0	0.00	264	7.30
PM PK HOUR	541	16.45	905	16.15	0	0.00	748	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	27	405	0	432
8-9	22	431	0	453
9-10	20	380	0	400
15-16	23	336	0	359
16-17	25	487	0	512
17-18	19	520	0	539
TOTAL	136	2559	0	2695

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	457	40	497
8-9	0	412	40	452
9-10	0	326	50	376
15-16	0	570	69	639
16-17	0	807	68	875
17-18	0	818	67	885
TOTAL	0	3390	334	3724

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	929	27	0	97	0
8-9	905	30	0	26	0
9-10	776	25	0	36	0
15-16	998	48	0	61	0
16-17	1387	34	0	60	1
17-18	1424	40	0	73	0
TOTAL	6419	204	0	353	1

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	25	174	37	236
8-9	32	159	33	224
9-10	36	129	59	224
15-16	46	198	56	300
16-17	43	242	58	343
17-18	86	589	73	748
TOTAL	268	1491	316	2075

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	236	84	0	31	0
8-9	224	20	0	25	0
9-10	224	47	0	29	0
15-16	300	54	0	27	1
16-17	343	58	0	41	0
17-18	748	36	0	29	0
TOTAL	2075	299	0	182	1

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Broadway Ave and 11th St , City of Los Angeles

Date: 10/11/2011

Day: Tuesday

Project #: CA11_5388_015

N

Broadway Ave

11th St

Peak Hour Summary

AM Peak Hour	830 AM
NOON Peak Hour	
PM Peak Hour	500 PM

CONTROL

Signalized

Southbound Approach

	Lanes 0	Lanes 2	Lanes 0	Out
AM	30	343	0	710
NOON	0	0	0	0
PM	50	562	0	667

Eastbound Approach

	AM	NOON	PM
Out	263	0	598
Left (Lanes 0)	0	0	0
Through (Lanes 0)	0	0	0
Right (Lanes 0)	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	30	0	47	0
Through	169	0	488	2
Left	37	0	35	0
Out	0	0	0	

Northbound Approach

	Out	Left	Through	Right
AM	380	64	680	0
NOON	0	0	0	0
PM	597	60	620	0
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	373	710
North Leg	NOON	0	0
North Leg	PM	612	667
South Leg	AM	380	744
South Leg	NOON	0	0
South Leg	PM	597	680

West Leg	AM	NOON	PM
	263	0	598
	0	0	0

East Leg	AM	NOON	PM
	236	0	570
	0	0	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	1083	0	1279
West Leg	263	0	598
East Leg	236	0	570
South Leg	1124	0	1277

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 9/8/10 WEDNESDAY	LOCATION:	LOS ANGELES	PROJECT #:	CA10-0910-01
	NORTH & SOUTH:	BROADWAY	LOCATION #:	6
	EAST & WEST:	11TH	CONTROL:	SIGNAL

ALL CLASSES

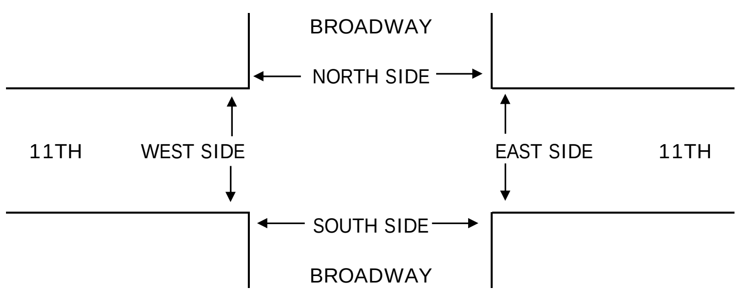
NOTES:

AM / PM / MD / OTHER / OTHER

N ▲ / ◀ W / E ▶ / S ▼

		NORTHBOUND BROADWAY			SOUTHBOUND BROADWAY			EASTBOUND 11TH			WESTBOUND 11TH			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	X	X	2	0	X	X	X	0	2	0	
AM	7:00 AM	8	90	0	0	69	5	0	0	0	11	19	3	205
AM	7:15 AM	13	116	1	0	78	10	0	0	0	12	38	4	272
AM	7:30 AM	15	100	0	0	81	12	0	0	0	7	37	5	257
AM	7:45 AM	20	131	1	0	80	6	0	0	0	12	40	8	298
AM	8:00 AM	14	158	0	0	72	4	0	0	0	13	46	5	312
AM	8:15 AM	12	149	0	0	80	4	0	0	0	12	39	4	300
AM	8:30 AM	13	178	1	0	94	7	0	0	0	7	46	6	352
AM	8:45 AM	12	168	0	0	95	9	0	0	0	9	43	5	341
AM	VOLUMES	107	1,090	3	0	649	57	0	0	0	83	308	40	2,337
AM	APPROACH %	9%	91%	0%	0%	92%	8%	0%	0%	0%	19%	71%	9%	
AM	APP/DEPART	1,200	/	1,130	706	/	732	0	/	3	431	/	472	0
AM	BEGIN PEAK HR		8:00 AM											
AM	VOLUMES	51	653	1	0	341	24	0	0	0	41	174	20	1,305
AM	APPROACH %	7%	93%	0%	0%	93%	7%	0%	0%	0%	17%	74%	9%	
AM	PEAK HR FACTOR		0.918			0.877			0.000			0.918		0.927
AM	APP/DEPART	705	/	673	365	/	382	0	/	1	235	/	249	0
PM	4:00 PM	16	136	0	0	119	5	0	0	0	11	58	8	353
PM	4:15 PM	18	160	0	0	110	9	0	0	0	3	63	9	372
PM	4:30 PM	12	152	0	0	140	10	0	0	0	7	71	10	402
PM	4:45 PM	16	175	0	0	182	12	0	0	0	11	63	15	474
PM	5:00 PM	21	177	0	0	200	15	0	0	0	9	102	16	540
PM	5:15 PM	9	118	0	0	141	13	0	0	0	3	102	12	398
PM	5:30 PM	18	146	0	0	151	5	0	0	0	11	116	14	461
PM	5:45 PM	14	184	0	0	111	16	0	0	0	6	133	10	474
PM	VOLUMES	124	1,248	0	0	1,154	85	0	0	0	61	708	94	3,474
PM	APPROACH %	9%	91%	0%	0%	93%	7%	0%	0%	0%	7%	82%	11%	
PM	APP/DEPART	1,372	/	1,342	1,239	/	1,215	0	/	0	863	/	917	0
PM	BEGIN PEAK HR		5:00 PM											
PM	VOLUMES	62	625	0	0	603	49	0	0	0	29	453	52	1,873
PM	APPROACH %	9%	91%	0%	0%	92%	8%	0%	0%	0%	5%	85%	10%	
PM	PEAK HR FACTOR		0.867			0.758			0.000			0.896		0.867
PM	APP/DEPART	687	/	677	652	/	632	0	/	0	534	/	564	0

U-TURNS					
	NB	SB	EB	WB	TTL
7:00 AM	0	21	0	0	21
7:15 AM	0	27	0	0	27
7:30 AM	0	22	0	0	22
7:45 AM	0	24	0	0	24
8:00 AM	0	22	0	0	22
8:15 AM	0	18	0	0	18
8:30 AM	0	20	0	0	20
8:45 AM	0	25	0	0	25
VOLUMES	0	179	0	0	179
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
VOLUMES	0	0	0	0	0



		PEDESTRIAN + BIKE CROSSINGS					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	2	1	0	1	4	0	0	0	0	0	2	1	0	1	4
AM	7:15 AM	2	0	1	0	3	0	0	0	0	0	2	0	1	0	3
AM	7:30 AM	2	1	0	0	3	0	0	0	0	0	2	1	0	0	3
AM	7:45 AM	3	0	2	2	7	0	0	0	0	0	3	0	2	2	7
AM	8:00 AM	2	1	0	0	3	0	0	0	0	0	2	1	0	0	3
AM	8:15 AM	1	2	0	3	6	0	0	0	0	0	1	2	0	3	6
AM	8:30 AM	2	2	0	1	5	0	0	0	0	0	2	2	0	1	5
AM	8:45 AM	3	1	1	1	6	0	0	0	0	0	3	1	1	1	6
AM	TOTAL	17	8	4	8	37	0	0	0	0	0	17	8	4	8	37
PM	4:00 PM	1	3	1	5	10	0	0	0	0	0	1	3	1	5	10
PM	4:15 PM	2	1	1	2	6	0	0	0	0	0	2	1	1	2	6
PM	4:30 PM	2	0	0	4	6	0	0	0	0	0	2	0	0	4	6
PM	4:45 PM	2	1	0	3	6	0	0	0	0	0	2	1	0	3	6
PM	5:00 PM	3	1	1	2	7	0	0	0	0	0	3	1	1	2	7
PM	5:15 PM	5	0	2	2	9	0	0	0	0	0	5	0	2	2	9
PM	5:30 PM	1	0	1	2	4	0	0	0	0	0	1	0	1	2	4
PM	5:45 PM	2	2	0	4	8	0	0	0	0	0	2	2	0	4	8
PM	TOTAL	18	8	6	24	56	0	0	0	0	0	18	8	6	24	56

PACIFIC TRAFFIC DATA SERVICES

TURNING MOVEMENT COUNTS

LOS ANGELES

CA10-0910-01

ALL HOURS

BROADWAY (north leg)

1,945	**142**	**1,803**	**0**	**TOTAL**
1,239	85	1,154	0	**PM**
706	57	649	0	**AM**

TOTAL	**2,472**
PM	1,342
AM	1,130

11TH (west leg)

TOTAL	PM	AM
1,389	917	472
0	0	0
0	0	0
0	0	0
0	**0**	**0**

11TH (east leg)

AM	PM	TOTAL
431	**863**	**1,294**
40	94	**134**
308	708	**1,016**
83	61	**144**
3	0	**3**

BROADWAY (south leg)

732	**AM**	107	1,090	3	**1,200**
1,215	**PM**	124	1,248	0	**1,372**
1,947	**TOTAL**	**231**	**2,338**	**3**	**2,572**

PEAK HOUR

AM 8:00 AM

PM 5:00 PM

BROADWAY (north leg)

1,017	**73**	**944**	**0**	**TOTAL**
652	49	603	0	**PM**
365	24	341	0	**AM**

TOTAL	**1,350**
PM	677
AM	673

11TH (west leg)

TOTAL	PM	AM
813	564	249
0	0	0
0	0	0
0	0	0
0	**0**	**0**

11TH (east leg)

AM	PM	TOTAL
235	**534**	**769**
20	52	**72**
174	453	**627**
41	29	**70**
1	0	**1**

BROADWAY (south leg)

382	**AM**	51	653	1	**705**
632	**PM**	62	625	0	**687**
1,014	**Total**	**113**	**1,278**	**1**	**1,392**

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE: 9/8/10 WEDNESDAY			
LOCATION:	LOS ANGELES	PROJECT #:	CA10-0910-01
NORTH & SOUTH:	BROADWAY	LOCATION #:	6
EAST & WEST:	11TH	CONTROL:	SIGNAL

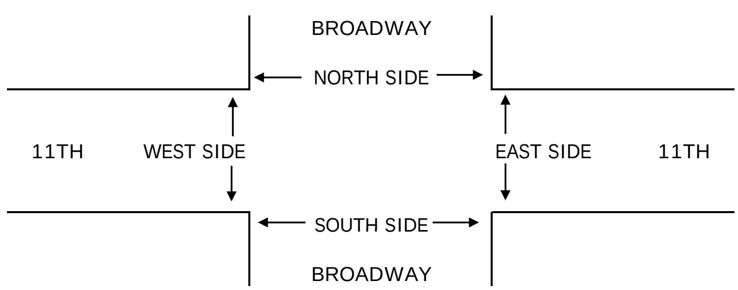
CLASS 1: PASSENGER VEHICLES

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N ◀ W E ▶ S ▼

		NORTHBOUND BROADWAY			SOUTHBOUND BROADWAY			EASTBOUND 11TH			WESTBOUND 11TH				U-TURNS				
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	X	X	2	0	X	X	X	0	2	0						
AM	7:00 AM	8	78			57	5				10	18	3	179					0
AM	7:15 AM	13	102			61	9				9	37	3	234					0
AM	7:30 AM	14	88			68	12				5	36	4	227					0
AM	7:45 AM	20	119			66	6				11	37	3	262					0
AM	8:00 AM	13	148			56	4				11	43	5	280					0
AM	8:15 AM	12	140			68	4				10	36	2	272					0
AM	8:30 AM	13	168			81	7				5	43	6	323					0
AM	8:45 AM	12	155			80	8				8	39	5	307					0
AM	VOLUMES	105	998	0	0	537	55	0	0	0	69	289	31	2,084	0	0	0	0	0
AM	APPROACH %	10%	90%	0%	0%	91%	9%	0%	0%	0%	18%	74%	8%						
AM	APP/DEPART	1,103	/	1,029	592	/	606	0	/	0	389	/	449	0					
AM	BEGIN PEAK HR		8:00 AM																
AM	VOLUMES	50	611	0	0	285	23	0	0	0	34	161	18	1,182					
AM	APPROACH %	8%	92%	0%	0%	93%	7%	0%	0%	0%	16%	76%	8%						
AM	PEAK HR FACTOR		0.913			0.875			0.000			0.903		0.915					
AM	APP/DEPART	661	/	629	308	/	319	0	/	0	213	/	234	0					
PM	4:00 PM	16	122			108	5				10	57	8	326					0
PM	4:15 PM	17	145			97	8				3	60	9	339					0
PM	4:30 PM	11	137			123	10				7	70	8	366					0
PM	4:45 PM	16	161			165	11				11	58	14	436					0
PM	5:00 PM	19	159			187	15				9	98	16	503					0
PM	5:15 PM	9	105			126	13				2	98	11	364					0
PM	5:30 PM	18	128			137	5				11	110	14	423					0
PM	5:45 PM	14	166			96	15				6	126	10	433					0
PM	VOLUMES	120	1,123	0	0	1,039	82	0	0	0	59	677	90	3,190	0	0	0	0	0
PM	APPROACH %	10%	90%	0%	0%	93%	7%	0%	0%	0%	7%	82%	11%						
PM	APP/DEPART	1,243	/	1,213	1,121	/	1,098	0	/	0	826	/	879	0					
PM	BEGIN PEAK HR		4:45 PM																
PM	VOLUMES	62	553	0	0	615	44	0	0	0	33	364	55	1,726					
PM	APPROACH %	10%	90%	0%	0%	93%	7%	0%	0%	0%	7%	81%	12%						
PM	PEAK HR FACTOR		0.864			0.816			0.000			0.837		0.858					
PM	APP/DEPART	615	/	608	659	/	648	0	/	0	452	/	470	0					



		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	30	33	27	12	102					0	2	1	0	1	4
AM	7:15 AM	73	53	64	37	227					0	2	0	1	0	3
AM	7:30 AM	96	63	84	40	283					0	2	1	0	0	3
AM	7:45 AM	86	61	84	35	266					0	3	0	2	2	7
AM	8:00 AM	62	44	35	30	171					0	2	1	0	0	3
AM	8:15 AM	45	19	35	14	113					0	1	2	0	3	6
AM	8:30 AM	39	45	17	12	113					0	2	2	0	1	5
AM	8:45 AM	50	26	14	11	101					0	3	1	1	1	6
AM	TOTAL	481	344	360	191	1,376	0	0	0	0	0	17	8	4	8	37
PM	4:00 PM	78	54	71	31	234					0	1	3	1	5	10
PM	4:15 PM	38	32	49	14	133					0	2	1	1	2	6
PM	4:30 PM	48	42	68	26	184					0	2	0	0	4	6
PM	4:45 PM	41	31	43	19	134					0	2	1	0	3	6
PM	5:00 PM	50	39	39	13	141					0	3	1	1	2	7
PM	5:15 PM	21	21	32	9	83					0	5	0	2	2	9
PM	5:30 PM	13	13	25	14	65					0	1	0	1	2	4
PM	5:45 PM	20	15	16	7	58					0	2	2	0	4	8
PM	TOTAL	309	247	343	133	1,032	0	0	0	0	0	18	8	6	24	56

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TRAFFIC DATA SERVICES

DATE:	LOCATION:	LOS ANGELES	PROJECT #:	CA09-0807-1
8/4/09	NORTH & SOUTH:	MAIN	LOCATION #:	18
TUESDAY	EAST & WEST:	11TH	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

N
◀ W
E ▶
S

		NORTHBOUND MAIN			SOUTHBOUND MAIN			EASTBOUND 11TH			WESTBOUND 11TH			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	X	X	2	0	X	X	X	0	2	0	
AM	6:45 AM													0
	7:00 AM	10	91			65	6				2	19	3	196
	7:15 AM	8	148			74	11				1	27	3	272
	7:30 AM	15	150			102	17				4	22	5	315
	7:45 AM	14	181			105	18				6	35	6	365
	8:00 AM	8	188			111	15				10	26	15	373
	8:15 AM	14	193			125	21				4	36	5	398
	8:30 AM	18	212			113	26				10	47	10	436
	8:45 AM	17	205			97	19				14	41	12	405
	9:00 AM													0
	VOLUMES	104	1,368	0	0	792	133	0	0	0	51	253	59	2,760
	APPROACH %	7%	93%	0%	0%	86%	14%	0%	0%	0%	14%	70%	16%	
	APP/DEPART	1,472	/	1,427	925	/	843	0	/	0	363	/	490	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	57	798	0	0	446	81	0	0	0	38	150	42	1,612
	APPROACH %	7%	93%	0%	0%	85%	15%	0%	0%	0%	17%	65%	18%	
	PEAK HR FACTOR		0.929			0.902			0.000			0.858		0.924
	APP/DEPART	855	/	840	527	/	484	0	/	0	230	/	288	0
MIDDAY	10:45 AM													0
	11:00 AM													0
	11:15 AM													0
	11:30 AM													0
	11:45 AM													0
	12:00 PM													0
	12:15 PM													0
	12:30 PM													0
	12:45 PM													0
	1:00 PM													0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
	BEGIN PEAK HR		1:00 PM											
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR		0.000			0.000			0.000			0.000		0.000
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM	3:45 PM													0
	4:00 PM	14	192			124	15				15	45	21	426
	4:15 PM	9	188			151	19				15	53	18	453
	4:30 PM	18	217			178	16				11	58	13	511
	4:45 PM	16	195			167	17				16	64	18	493
	5:00 PM	12	183			193	22				18	79	20	527
	5:15 PM	10	170			195	26				20	88	22	531
	5:30 PM	8	165			159	27				21	100	25	505
	5:45 PM	15	205			153	20				20	140	22	575
	6:00 PM													0
	VOLUMES	102	1,515	0	0	1,320	162	0	0	0	136	627	159	4,021
	APPROACH %	6%	94%	0%	0%	89%	11%	0%	0%	0%	15%	68%	17%	
	APP/DEPART	1,617	/	1,674	1,482	/	1,456	0	/	0	922	/	891	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	46	713	0	0	714	92	0	0	0	75	331	85	2,056
	APPROACH %	6%	94%	0%	0%	89%	11%	0%	0%	0%	15%	67%	17%	
	PEAK HR FACTOR		0.899			0.912			0.000			0.841		0.968
	APP/DEPART	759	/	798	806	/	789	0	/	0	491	/	469	0

Appendix B
List of Related Projects

CLATS

Welcome **eileen**! | Log Out | Profile | Admin

RELATED PROJECTS

Centroid Info:

PROJ ID: 40333
Address: 602 W 6TH ST
LOS ANGELES, CA 90017
Lat/Long: 34.0487, -118.255

Buffer Radius: 0.75 mile

Search

Column

Include NULL "Trip info":
Include NULL "FirstStudySubmittalDate" (latest)
Include "Inactive" projects:
Include "Do not show in Related Project":
Net_AM_Trips - Select -
Net_PM_Trips - Select -
Net_Daily_Trips - Select -

Record Count: 51 | Record Per Page: All Records

Results generated since: (10/15/2015 2:58:37 PM)

Proj ID	Office	Area	CD	Year	Project Title	Project Desc	Address	First Study Submittal Date	Distance (mile)	Trip Info
31993	Metro	MTR	9	2005	Ava Little Tokyo	Ava Little Tokyo/Avalon Bay (In Construction)	200 S Los Angeles St	05/18/2005	0.7	
32870	Metro	MTR	1	2006	TENTEN WILSHIRE EXPANSION (The Icon)	402 condos & 7428 SF retail (Completion date June 2016)	1027 W WILSHIRE BLVD	12/23/2005	0.5	
33110	Metro	MTR	9	2006	Vibiana Lofts (Mixed-Use) - In Construction	300 condos & 3.4K SF retail	225 S Los Angeles St	03/28/2006	0.7	
32867	Metro	MTR	9	2006	Northeast tower (mixed-use)	210 condos & 9K SF retail	215 W 9th St	04/07/2006	0.4	
33242	Metro	CBD	14	2006	Amacon Project	208 apts & 5,029 sf retail (Project revised 2013)	1133 S HOPE ST	11/02/2006	0.7	
33596	Metro	CBD	14	2006	Mixed-Use	247 Condominiums, 10,675 SF Retail	745 S SPRING ST	11/02/2006	0.4	
33243	Metro	MTR	9	2006	5th & Olive (formerly Park Fifth) Revised 2013	615 Apts and 16.309 KSF Restaurants	427 W 5TH ST	04/12/2007	0.2	
33969	Metro	MTR	9	2007	11th & Hill Project	172 Condos and 6850 sf restaurant	1115 S Hill St.	07/02/2007	0.7	
34520	Metro	MTR	1	2007	Bixel & Lucas	649 Apts & 39996SF Retail(In construction 2015)	1102 W 6th St	03/21/2008	0.6	
33970	Metro	MTR	9	2007	8th / Hope / Grand Project	225 condos, 200-rm hotel, 30000 sf retail & 32000 restaurant	609 W 8th St.	04/04/2008	0.2	

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	570								
Apartments	Total Units	280								
Retail	S.F. Gross Area	50000	248	334	4331	59	189	187	147	
			248	**334**	**4331**		**59**	**189**	**187**	**147**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use	Other		113	136	1498	21	92	83	53	
Condominiums	Total Units	402								
Retail	S.F. Gross Area	4728								
			113	**136**	**1498**		**21**	**92**	**83**	**53**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	300	224	126	1910	88	136	75	52	
Retail	S.F. Gross Area	3400								
			224	**126**	**1910**		**88**	**136**	**75**	**52**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	210								
Retail	S.F. Gross Area	9000								
Mixed Use			70	102	1140	14	56	64	38	Various trip credits applied.
			70	**102**	**1140**		**14**	**56**	**64**	**38**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Other			94	141	1543	20	74	91	50	Total Net (2013 Project)
			94	**141**	**1543**		**20**	**74**	**91**	**50**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	247								
Retail	S.F. Gross Area	10675	90	140	1543	23	67	80	60	
			90	**140**	**1543**		**23**	**67**	**80**	**60**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	600								
Other	S.F. Gross Area	13872								quality restaurant
Mixed Use			167	259	3088	44	122	162	97	Net trips
			167	**259**	**3088**		**44**	**122**	**162**	**97**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use	Other		-5	43	543	-45	40	50	-7	net new trips
			-5	**43**	**543**		**-45**	**40**	**50**	**-7**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	648								
Retail	S.F. Gross Area	39996	256	387	4200	61	195	232	155	Total reflects credits for Pass-By & Transit/Walk-In.
			256	**387**	**4200**		**61**	**195**	**232**	**155**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use	Other		194	401	4908	90	104	242	159	Net new trips
			194	**401**	**4908**		**90**	**104**	**242**	**159**

34699	Metro	MTR	1	2008	Office Building		1130 W WILSHIRE BLVD	11/06/2008	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Office	S.F. Gross Area	88224	104	89	964	92	12	28	61	Credit applied for existing uses (19124 SF Office & 2390 SF Restaurant).
Other	S.F. Gross Area	2000								20 student day care
Other	S.F. Gross Area	248								hi-turnover restaurant
Other	S.F. Gross Area	5375								quality restaurant
			104	**89**	**964**		**92**	**12**	**28**	**61**

34802	Metro	MTR	9	2008	Mixed-Use (Formerly known as Glass Tower)	151 Condos, 3472 SF Retail, 2200 SF Restaurant (const start 2015)	1050 S Grand Av	11/17/2008	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	151								
Retail	S.F. Gross Area	3472								
Other	S.F. Gross Area	2200	68	99	1084	15	54	64	35	Restaurant
			68	**99**	**1084**		**15**	**54**	**64**	**35**

34779	Metro	MTR	9	2008	Embassy Tower	420 hi-rise condos (maybe apts 1st) & 38.5 ksf supermkt	848 S Grand Av	12/12/2008	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	420								
Retail	S.F. Gross Area	38500								specialty grocery market
Mixed Use			210	377	3882	66	144	212	165	net total
			210	**377**	**3882**		**66**	**144**	**212**	**165**

34803	Metro	MTR	14	2008	Zen Mixed-Use Project (Kawada Tower)	330 Condominiums, 12 KSF Retail/Restaurant	250 S Hill St	03/18/2009	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	330								
Retail	S.F. Gross Area	12000	94	108	1217	21	73	66	42	Total Net Trips
			94	**108**	**1217**		**21**	**73**	**66**	**42**

35080	Metro	MTR	9	2013	Wilshire Grand Project	Wilshire Grand Redevelopment Project (Sched completion 2017)	900 W WILSHIRE BLVD	10/15/2009	0.3

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use	Other		800	858	3624	725	75	94	764	
			800	**858**	**3624**		**725**	**75**	**94**	**764**

40129	Metro	CBD	9	2012	Grand Avenue	265 Apartments, 5020 SF Restaurant	237 S Grand Av	03/07/2012	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Other	Total Units	1648								Condo
Apartments	Total Units	412								Apts
Retail	S.F. Gross Area	449000								
Office	S.F. Gross Area	681000								Office space for County Office Bldg
Other	Other		1540	2414	21631	929	611	1067	1348	Total Net Trips (All Parcels)
			1540	**2414**	**21631**		**929**	**611**	**1067**	**1348**

40371	Metro	MTR	9	2012	Metropolis Mixed-Use	Condos, Office, Hotel, Retail, Restaurant	899 S FRANCISCO ST	05/31/2012	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	836								
Office	S.F. Gross Area	988225								
Other	Rooms	480								FULL SERVICE HOTEL
Retail	S.F. Gross Area	46000								RETAIL/RESTAURANT
Mixed Use	Other		625	899	8010	307	318	387	512	TOTAL NET
			625	**899**	**8010**		**307**	**318**	**387**	**512**

40311	Metro	MTR	14	2012	Olympic & Hill MU Project	300 apts, 14.5ksf retail, & 8.5ksf restaurant	301 W OLYMPIC BLVD	07/20/2012	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	300								
Retail	S.F. Gross Area	14500								
Other	S.F. Gross Area	8500								restaurant
Other	Other		134	225	2496	30	104	143	82	Total net project trips
			134	**225**	**2496**		**30**	**104**	**143**	**82**

40665	Metro	MTR	14	2012	Apartments	100 Apartments	1027 S Olive St	11/08/2012	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	100	48	59	632	9	39	38	21	
			48	**59**	**632**		**9**	**39**	**38**	**21**

40746	Metro	MTR	14	2012	Mixed-Use	662 Apartments, 47 KSF Retail, 11 KSF Live/Work, 34.824 KSF Office	928 S Broadway	01/03/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	670								
Condominiums	Total Units	17								live work
Retail	S.F. Gross Area	58800	250	381	4715	21	229	272	109	Credit applied for transit/walk & existing
			250	**381**	**4715**		**21**	**229**	**272**	**109**

40882	Metro	CBD	14	2013	Mixed-Use	160 Apartments, 18 KSF Retail, 3.5 KSF Restaurant, 3.5 KSF Fast Food	534 S MAIN ST	03/28/2013	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	160								
Retail	S.F. Gross Area	18000								
Other	S.F. Gross Area	3500								Restaurant
Other	S.F. Gross	3500	127	145	2213	52	75	87	58	Use=Fast Food, Net includees

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
	Area									discounts
			127	**145**	**2213**		**52**	**75**	**87**	**58**

41068	Metro	MTR	14	2013	Mixed-Use	303 Condos, 9.68 KSF restaurant	840 S Olive St	04/15/2013	0.3

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	303								
Other	S.F. Gross Area	9680	247	270	3071	81	166	174	96	use=restaurant
Retail	S.F. Gross Area	1500								
			247	**270**	**3071**		**81**	**166**	**174**	**96**

35867	Metro	MTR	9	2011	Mixed-Use	700 Apartments, 27 KSF Retail, 5 KSF Restaurant	710 S Grand Av	05/27/2013	0.1

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	700								
Retail	S.F. Gross Area	27000								
Other	S.F. Gross Area	5000	273	477	5245	88	185	275	202	(Restaurant) Total reflects credit for transit & pass-by.
			273	**477**	**5245**		**88**	**185**	**275**	**202**

40175	Metro	CBD	14	2012	ISAF - Retail/Restaurant	27765 SF Retail/Restaurant	201 S Broadway	07/12/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Other	S.F. Gross Area	27675	-81	70		-40	-41	53	17	Mixed: office, retail, restaurant
			-81	**70**	**0**		**-40**	**-41**	**53**	**17**

41228	Metro	CBD	14	2013	Mixed-Use	430 apartment, 10 KSF Retail, 5 KSF Bar	400 S Broadway	08/07/2013	0.3

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	450								
Retail	S.F. Gross Area	7500								
Other	S.F. Gross Area	5000	183	212	2266	36	147	139	73	Use=Bar, total includes existing, transit credit
			183	**212**	**2266**		**36**	**147**	**139**	**73**

41288	Metro	MTR	14	2013	1001 Olive Street Proj	225 apts & 5.0ksf restaurant	1001 S OLIVE ST	08/12/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use			101	145	1581	22	79	94	51	Total net trips
Apartments	Total Units	225								
Other	S.F. Gross Area	5000								quality restaurant
			101	**145**	**1581**		**22**	**79**	**94**	**51**

41207	Metro	MTR	14	2013	Mixed-Use	274 Apartments & 12 KSF Restaurant	1000 S Grand Av	09/02/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	274								
Other	S.F. Gross Area	12000	121	199	2216	27	94	130	69	274 apt unit and 12 ksf restaurant; Total includes transit & pass-by credit
			121	**199**	**2216**		**27**	**94**	**130**	**69**

41320	Metro	MTR	14	2013	Hill Street Mixed-Use	239 Apts & 5.4ksf retail - updated 1/2015	920 S HILL ST	09/17/2013	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	239								
Retail	S.F. Gross Area	5400	107	137	1476	23	84	87	50	Total net trips
			107	**137**	**1476**		**23**	**84**	**87**	**50**

41321	Metro	MTR	14	2013	Broadway Mixed-Use	169-218 residential units & 7.0ksf retail	955 S BROADWAY	09/17/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	201								
Retail	S.F. Gross Area	6000	93	117	1275	21	72	74	43	Total net trips
			93	**117**	**1275**		**21**	**72**	**74**	**43**

41367	Metro	MTR	14	2013	Mixed-Use	331 Apartments, 10 KSF Restaurant	801 S Olive ST	09/24/2013	0.3

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	331								
Other	S.F. Gross Area	10000	162	225	2557	33	129	140	83	Land Use=Restaurant. Total includes transit, pass by discount.
			162	**225**	**2557**		**33**	**129**	**140**	**83**

41567	Metro	MTR	14	2013	Olympic & Olive Mixed-Use Project	263 Apartments, 14.5 KSF Restaurant	960 S Olive St	10/14/2013	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	263	116	71	2266	25	91	48	23	Total includes credit for transit, walk, & internal
Other	S.F. Gross Area	14500								Land Use = Restaurant
			116	**71**	**2266**		**25**	**91**	**48**	**23**

41492	Metro	CBD	14	2013	Mixed Use	589 Apartments, 4500 SF Retail	820 S OLIVE ST	10/16/2013	0.3

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	589								
Retail	S.F. Gross Area	4500	264	302	3309	63	202	195	106	Transit & Walk credit applied.
			264	**302**	**3309**		**63**	**202**	**195**	**106**

41460	Metro	MTR	14	2013	Mixed-Use	452 Condos & 25KSF Retail	601 S Main St	10/23/2013	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Condominiums	Total Units	452								
Retail	S.F. Gross Area	25000	179	238	2686	36	144	152	87	Total net project trips
			179	**238**	**2686**		**36**	**144**	**152**	**87**

41710	Metro	CBD	14	2013	Mixed-Use Project (Herald Examiner)	391 Apartments, 39725 SF Office, 49 KSF Retail	1111 S Broadway	12/04/2013	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use										Herald Examiner Site: 41.14ksf Office & 20ksf Retail
Mixed Use										Hill St. Site:177 Apts & Retail 10ksf
Mixed Use			319	532	5198	144	176	258	274	Total net project trips; 12th St Site: 214 Apts & Retail 10ksf
			319	**532**	**5198**		**144**	**176**	**258**	**274**

41695	Metro	CBD	14	2013	Mixed-Use	94 Apartments, 2.5 KSF Retail	1148 S Broadway	01/13/2014	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	94								
Retail	S.F. Gross Area	2500	38	50	553	8	30	32	18	transit credit & pass by credits applied.
			38	**50**	**553**		**8**	**30**	**32**	**18**

41774	Metro	MTR	14	2014	DTLA South Park Site 1	461 hi-rise apts, 300-rm hotel, & 8.7 ksf retail	1120 S GRAND AVE	02/06/2014	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	666								HI-RISE APTS
Other	Rooms	0								HOTEL
Other	S.F. Gross Area	20690								shopping center
Mixed Use	Other		170	229	2730	42	127	136	93	TOTAL NET PROJECT TRIPS;Project revised 10/2014
			170	**229**	**2730**		**42**	**127**	**136**	**93**

41568	Metro	MTR	14	2013	Variety Arts (Mixed-Use)	3.295 KSF Office,10056 SF Restaurant, 5119 SF Bar	940 S Figueroa st	06/04/2014	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Theatre	Seats	1942								
Other	S.F. Gross Area	10056								Land Use=Restaurant
Other	S.F. Gross Area	5119	9	134	2237	5	4	99	35	Land Use = Bar. Transit & pass-by credit applied.
			9	**134**	**2237**		**5**	**4**	**99**	**35**

41864	Metro	MTR	14	2014	Restaurant	7149 SF Restaurant	1036 S Grand Av	06/18/2014	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Other	S.F. Gross Area	7149	5	41	492	2	3	27	14	Land use=Restaurant, total includes existing office
			5	**41**	**492**		**2**	**3**	**27**	**14**

42273	Metro	MTR	1	2014	Residential	94 Apartments	459 S HARTFORD AV	09/08/2014	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	94	46	66	658	9	37	43	23	Total includes transit credit.
			46	**66**	**658**		**9**	**37**	**43**	**23**

42561	Metro	MTR	1	2014	Mixed-Use	80 Apartments, 4589 SF Restaurant	1150 W WILSHIRE BLVD	11/05/2014	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	80								
Other	S.F. Gross Area	4589	4	34	511	-22	26	39	-5	Land Use = Restaurant. Total includes discounts for transit, internal and existing uses.
			4	**34**	**511**		**-22**	**26**	**39**	**-5**

42499	Metro	MTR	14	2014	Mixed-Use	320 Apartments, 25 KSF Pharmacy	737 S Spring st	11/25/2014	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	320								
Other	S.F. Gross Area	25000	213	283	3942	72	141	167	116	Land use=Pharmacy/Drugstore Total includes transit, pass-by credit
			213	**283**	**3942**		**72**	**141**	**167**	**116**

42718	Metro	MTR	1	2014	Apartments	90 Apartments	1218 W INGRAHAM ST	12/03/2014	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	80	41	50	532	8	33	33	17	
			41	**50**	**532**		**8**	**33**	**33**	**17**

34656	Metro	CCW	1	2008	Condominiums	58 Condominium Units	742 S HARTFORD AV	01/28/2015	0.7

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	58	26	31	333	5	21	20	11	Total net project trips; TS not required 1/2015
			26	**31**	**333**		**5**	**21**	**20**	**11**

42698	Metro	MTR	14	2014	Mixed-Use	400 Apartments, 15 KSF Pharmacy/Drug Store	732 S Spring st	01/28/2015	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	400								
Other	S.F. Gross Area	15000	211	268	3409	59	152	164	104	Land Use=drug store. total includes transit/passby credit
			211	**268**	**3409**		**59**	**152**	**164**	**104**

42547	Metro	MTR	14	2014	Mixed-Use	428 Apartments, 6700 SF Retail	340 S Hill st	02/04/2015	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	428								
Other	S.F. Gross Area	6700	163	219	2361	34	129	141	79	Land Use=Restaurant. Total includes transit, pass-by credit.
			163	**219**	**2361**		**34**	**129**	**141**	**79**

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments

42504	Metro	MTR	1	2014	Mixed-Use	126 Condos, 100 Apartments, 7200 SF Retail	1145 W 7th st	02/11/2015	0.6

Condominiums	Total Units	126								
Apartments	Total Units	100								
Retail	S.F. Gross Area	7200	70	102	1084	4	66	67	35	Total includes transit, internal and passby credit.
			70	**102**	**1084**		**4**	**66**	**67**	**35**

42671	Metro	MTR	1	2014	Sapphire Mixed-Use	362 Apartments, 18959 SF Retail, 3504 SF Restaurant, see comments	1111 W 6th St	04/24/2015	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	362								
Retail	S.F. Gross Area	18959								
Other	S.F. Gross Area	3504								Quality Restaurant
Other	S.F. Gross Area	1476								Hi-Turnover Restaurant
Other	S.F. Gross Area	1866	97	92	1048	-35	132	-25	92	Land use=coffee shop. Credit for existing, transit, internal and pass-by applied.
			97	**92**	**1048**		**-35**	**132**	**-25**	**92**

42771	Metro	MTR	14	2014	940 S Hill MU	240 APTS & 14.0KSF RETAIL	940 S HILL ST	06/04/2015	0.5

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	240								
Retail	S.F. Gross Area	14000	102	122	1301	19	83	80	42	Total net project trips.
			102	**122**	**1301**		**19**	**83**	**80**	**42**

43554	Metro	MTR	14	2015	Clinic at 7th & Wall	55 Assisted Living Beds & Medical Office w/ 55 employees	649 S WALL ST	08/11/2015	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Office	Employees	66	29	27	104	24	5	3	24	Medical Office; Total Net Project Trips
Other	Beds	55								Assisted Living
			29	**27**	**104**		**24**	**5**	**3**	**24**

43247	Metro	MTR	14	2015	Medallion Phase 2	471 residential units, 5,190sf retail & 27,780sf restaurant	300 S MAIN ST	09/23/2015	0.6

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Apartments	Total Units	471								
Other	S.F. Gross Area	27780								High-turnover Restaurant
Retail	S.F. Gross Area	5190	386	410	4691	143	243	257	153	Total Net Project Trips
			386	**410**	**4691**		**143**	**243**	**257**	**153**

42971	Metro	MTR	14	2015	Alexan South Broadway	300 apts, 3.5ksf retail & 3.5ksf restaurant	850 S HILL ST	10/01/2015	0.4

Land_Use	Unit_ID	size	Net_AM_Trips	Net_PM_Trips	Net_Daily_Trips	NetAMIn	NetAMOut	NetPMIn	NetPMOut	Comments
Mixed Use	Total Units	300								apartments
Retail	S.F. Gross Area	3500								
Other	S.F. Gross Area	3500	134	181	1970	28	106	116	65	restaurant; total net project trips
			134	**181**	**1970**		**28**	**106**	**116**	**65**

Appendix C
Existing (2014/2015) Without Project HCM Analysis Output

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	592	489	222	420	49	63	109	63	171	680	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1445	3185	1232	1578	4414		1587	3185	1219	1339	3083	
Flt Permitted	0.45	1.00	1.00	0.27	1.00		0.18	1.00	1.00	0.68	1.00	
Satd. Flow (perm)	691	3185	1232	453	4414		308	3185	1219	955	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	643	532	241	457	53	68	118	68	186	739	86
RTOR Reduction (vph)	0	0	188	0	21	0	0	0	20	0	12	0
Lane Group Flow (vph)	98	643	344	241	489	0	68	118	48	186	813	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Effective Green, g (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.49	0.49		0.35	0.35	0.48	0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1028	397	361	2162		163	1123	581	255	823	
v/s Ratio Prot		0.20		c0.08	0.11		c0.02	0.04	0.01		c0.26	
v/s Ratio Perm	0.14		c0.28	0.24			0.13		0.03	0.19		
v/c Ratio	0.44	0.63	0.87	0.67	0.23		0.42	0.11	0.08	0.73	0.99	
Uniform Delay, d1	18.7	20.1	22.3	11.5	10.2		16.8	15.2	10.0	23.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	2.9	21.6	4.6	0.2		1.7	0.2	0.1	16.7	28.6	
Delay (s)	24.9	23.0	43.8	16.2	10.5		18.5	15.4	10.0	40.1	54.2	
Level of Service	C	C	D	B	B		B	B	B	D	D	
Approach Delay (s)		31.8			12.3			14.8			51.6	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	525	162	184	534	237	17	67	29	141	1098	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1536	3185	1050	3090	3185	1091	1593	3185	1149	1219	3185	1170
Flt Permitted	0.40	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	650	3185	1050	3090	3185	1091	227	3185	1149	907	3185	1170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	571	176	200	580	258	18	73	32	153	1193	176
RTOR Reduction (vph)	0	0	78	0	0	123	0	0	16	0	0	46
Lane Group Flow (vph)	142	571	98	200	580	135	18	73	16	153	1193	130
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Effective Green, g (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Actuated g/C Ratio	0.47	0.38	0.38	0.12	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	390	1217	401	381	1316	450	74	1043	518	297	1043	491
v/s Ratio Prot	0.03	0.18		c0.06	c0.18			0.02	0.00		c0.37	0.02
v/s Ratio Perm	0.14		0.09			0.12	0.08		0.01	0.17		0.09
v/c Ratio	0.36	0.47	0.24	0.52	0.44	0.30	0.24	0.07	0.03	0.52	1.14	0.27
Uniform Delay, d1	13.7	20.9	18.9	37.0	18.9	17.7	22.1	20.8	13.7	24.5	30.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.3	1.4	1.3	1.1	1.7	7.6	0.1	0.0	6.3	76.4	0.3
Delay (s)	14.3	22.2	20.4	38.3	20.0	19.4	29.7	20.9	13.8	30.7	106.6	17.3
Level of Service	B	C	C	D	C	B	C	C	B	C	F	B
Approach Delay (s)		20.6			23.4			20.4			88.7	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	533	158	156	734	221	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2084
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2084
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	579	172	170	798	240	303
RTOR Reduction (vph)	0	103	0	0	0	37
Lane Group Flow (vph)	579	69	170	798	240	266
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	28.0	28.0	11.5	43.0	17.2	28.7
Effective Green, g (s)	28.0	28.0	11.5	43.0	17.2	28.7
Actuated g/C Ratio	0.40	0.40	0.16	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274	472	261	1956	759	854
v/s Ratio Prot	c0.18		c0.11	0.25	c0.08	0.05
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.45	0.15	0.65	0.41	0.32	0.31
Uniform Delay, d1	15.4	13.4	27.4	6.9	21.6	14.0
Progression Factor	1.00	1.00	1.09	1.89	1.00	1.00
Incremental Delay, d2	1.2	0.6	3.9	0.4	0.2	0.2
Delay (s)	16.6	14.0	33.8	13.6	21.8	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.0			17.1	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	559	99	57	816	82	49	200	25	58	1041	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.99		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.94	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1458	3185	1116	1497	3099		1547	3185	927
Flt Permitted	0.16	1.00	1.00	0.42	1.00	1.00	0.18	1.00		0.54	1.00	1.00
Satd. Flow (perm)	271	3185	1132	647	3185	1116	281	3099		875	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	608	108	62	887	89	53	217	27	63	1132	148
RTOR Reduction (vph)	0	0	51	0	0	62	0	13	0	0	0	81
Lane Group Flow (vph)	66	608	57	62	887	27	53	231	0	63	1132	67
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Effective Green, g (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Actuated g/C Ratio	0.39	0.39	0.39	0.31	0.31	0.31	0.37	0.37		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	163	1255	446	199	982	344	103	1142		426	1446	421
v/s Ratio Prot	0.02	c0.19			c0.28			0.07		0.01	c0.36	
v/s Ratio Perm	0.14		0.05	0.10		0.02	0.19			0.06		0.07
v/c Ratio	0.40	0.48	0.13	0.31	0.90	0.08	0.51	0.20		0.15	0.78	0.16
Uniform Delay, d1	15.1	15.9	13.5	18.5	23.2	17.2	17.2	15.1		10.9	16.2	11.2
Progression Factor	1.00	0.70	0.57	0.99	1.03	4.13	2.02	2.26		1.00	1.00	1.00
Incremental Delay, d2	1.5	1.2	0.6	3.3	11.2	0.4	4.2	0.1		0.2	2.8	0.2
Delay (s)	16.6	12.3	8.3	21.6	35.2	71.2	39.0	34.1		11.1	19.0	11.4
Level of Service	B	B	A	C	D	E	D	C		B	B	B
Approach Delay (s)		12.1			37.5			35.0			17.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	519	40	53	695	148	30	327	52	54	519	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.93	1.00	1.00	0.98	1.00		0.89	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	1199	1484	3185	1181	1560	4358		1423	2957	
Flt Permitted	0.26	1.00	1.00	0.44	1.00	1.00	0.18	1.00		0.49	1.00	
Satd. Flow (perm)	429	3185	1199	688	3185	1181	298	4358		738	2957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	564	43	58	755	161	33	355	57	59	564	240
RTOR Reduction (vph)	0	0	18	0	0	88	0	31	0	0	67	0
Lane Group Flow (vph)	111	564	25	58	755	73	33	381	0	59	737	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	1833	690	311	1442	534	93	1369		231	929	
v/s Ratio Prot	c0.03	0.18			c0.24			0.09			c0.25	
v/s Ratio Perm	0.16		0.02	0.08		0.06	0.11			0.08		
v/c Ratio	0.33	0.31	0.04	0.19	0.52	0.14	0.35	0.28		0.26	0.79	
Uniform Delay, d1	7.7	7.7	6.4	11.4	13.7	11.2	18.5	18.0		17.9	21.9	
Progression Factor	1.01	1.26	1.58	1.13	1.19	2.86	1.84	2.03		1.00	1.00	
Incremental Delay, d2	0.5	0.4	0.1	1.1	1.1	0.4	10.0	0.5		2.7	6.9	
Delay (s)	8.3	10.0	10.2	14.0	17.4	32.4	44.0	37.0		20.5	28.8	
Level of Service	A	B	B	B	B	C	D	D		C	C	
Approach Delay (s)		9.8			19.7			37.6			28.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	467	74	37	593	6	0	0	0	77	1009	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1575	3185	1249	1503	3174						4544	1255
Flt Permitted	0.26	1.00	1.00	0.47	1.00						1.00	1.00
Satd. Flow (perm)	438	3185	1249	736	3174						4544	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	508	80	40	645	7	0	0	0	84	1097	345
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	72	508	59	40	651	0	0	0	0	0	1181	327
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	296	1446	567	239	1033						1785	600
v/s Ratio Prot	0.02	0.16			c0.20							c0.05
v/s Ratio Perm	0.09		0.05	0.05							0.26	0.21
v/c Ratio	0.24	0.35	0.10	0.17	0.63						0.66	0.55
Uniform Delay, d1	11.6	12.4	10.9	16.8	20.0						17.4	12.9
Progression Factor	1.59	1.51	1.98	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	0.7	0.4	1.5	2.9						1.9	1.0
Delay (s)	18.8	19.3	22.0	18.3	22.9						19.4	13.9
Level of Service	B	B	C	B	C						B	B
Approach Delay (s)		19.6			22.7			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	3	8	43	44	47	10	56	5	35	1118	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2762		1593	2909		1577	3127		1472	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.13	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2762		1593	2909		224	3127		1103	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	9	47	48	51	11	61	5	38	1215	310
RTOR Reduction (vph)	0	9	0	0	40	0	0	3	0	0	0	85
Lane Group Flow (vph)	14	3	0	47	59	0	11	63	0	38	1215	225
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Effective Green, g (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Actuated g/C Ratio	0.08	0.25		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	702		68	639		110	1541		543	1569	741
v/s Ratio Prot	0.01	0.00		c0.03	c0.02			0.02			c0.38	0.02
v/s Ratio Perm							0.05			0.03		0.15
v/c Ratio	0.11	0.00		0.69	0.09		0.10	0.04		0.07	0.77	0.30
Uniform Delay, d1	30.1	19.5		33.0	21.7		9.5	9.2		9.3	14.6	7.8
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0		26.1	0.1		1.8	0.1		0.2	3.8	0.2
Delay (s)	30.5	19.5		59.2	21.8		16.2	13.8		9.6	18.4	8.1
Level of Service	C	B		E	C		B	B		A	B	A
Approach Delay (s)		25.4			33.8			14.1			16.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	387	415	0	87	17	73	277	50	19	1064	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.97		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.89	1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3059		1564	3018		1415	3185	1239
Flt Permitted		1.00	1.00		1.00		0.14	1.00		0.54	1.00	1.00
Satd. Flow (perm)		1676	1326		3059		234	3018		803	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	421	451	0	95	18	79	301	54	21	1157	129
RTOR Reduction (vph)	0	0	23	0	11	0	0	21	0	0	0	69
Lane Group Flow (vph)	0	421	428	0	102	0	79	334	0	21	1157	60
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Effective Green, g (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Actuated g/C Ratio		0.39	0.39		0.39		0.47	0.47		0.47	0.47	0.47
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		646	511		1179		108	1405		373	1483	577
v/s Ratio Prot		0.25			0.03			0.11			c0.36	
v/s Ratio Perm			c0.32				0.34			0.03		0.05
v/c Ratio		0.65	0.84		0.09		0.73	0.24		0.06	0.78	0.10
Uniform Delay, d1		17.6	19.5		13.7		15.2	11.2		10.3	15.7	10.5
Progression Factor		1.00	1.00		1.22		1.39	1.44		0.25	0.42	0.07
Incremental Delay, d2		5.1	15.1		0.1		30.8	0.3		0.2	2.9	0.2
Delay (s)		22.7	34.6		16.8		51.8	16.6		2.8	9.5	1.0
Level of Service		C	C		B		D	B		A	A	A
Approach Delay (s)		28.9			16.8			23.0			8.5	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	544	72	0	359	38	51	341	126	0	449	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	0.90
Flpb, ped/bikes		1.00	1.00		1.00	1.00	0.99	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1142		1676	1320	1584	2883			1676	1283
Flt Permitted		1.00	1.00		1.00	1.00	0.24	1.00			1.00	1.00
Satd. Flow (perm)		1676	1142		1676	1320	406	2883			1676	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	591	78	0	390	41	55	371	137	0	488	135
RTOR Reduction (vph)	0	0	44	0	0	23	0	35	0	0	0	95
Lane Group Flow (vph)	0	591	34	0	390	18	55	473	0	0	488	40
Confl. Peds. (#/hr)			104			60	68		154	154		68
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		30.3	30.3		30.3	30.3	29.3	29.3			20.6	20.6
Effective Green, g (s)		30.3	30.3		30.3	30.3	29.3	29.3			20.6	20.6
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.42	0.42			0.29	0.29
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		725	494		725	571	225	1206			493	377
v/s Ratio Prot		c0.35			0.23		0.01	c0.16			c0.29	
v/s Ratio Perm			0.03			0.01	0.09					0.03
v/c Ratio		0.82	0.07		0.54	0.03	0.24	0.39			0.99	0.11
Uniform Delay, d1		17.4	11.6		14.7	11.4	22.1	14.2			24.6	18.0
Progression Factor		0.94	2.63		1.23	1.00	1.72	1.52			0.46	0.23
Incremental Delay, d2		9.1	0.2		2.4	0.1	0.5	0.2			30.9	0.1
Delay (s)		25.4	30.7		20.4	11.5	38.5	21.7			42.3	4.2
Level of Service		C	C		C	B	D	C			D	A
Approach Delay (s)		26.0			19.6			23.4			34.0	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	347	304	104	332	0	0	0	0	26	1088	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.92	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1472	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.36	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	560	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	377	330	113	361	0	0	0	0	28	1183	92
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	377	315	113	361	0	0	0	0	28	1183	49
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	185	555					721	1706	362
v/s Ratio Prot		0.22			0.22						c0.37	
v/s Ratio Perm			c0.27	0.20						0.02		0.07
v/c Ratio		0.68	0.81	0.61	0.65					0.04	0.69	0.14
Uniform Delay, d1		20.2	21.4	19.6	19.9					7.7	12.0	8.1
Progression Factor		0.82	0.83	1.00	1.00					0.29	0.30	0.00
Incremental Delay, d2		4.8	12.1	14.1	5.8					0.1	1.9	0.6
Delay (s)		21.3	29.9	33.7	25.8					2.3	5.5	0.7
Level of Service		C	C	C	C					A	A	A
Approach Delay (s)		25.4			27.7			0.0			5.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	22	54	18	58	1057	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1519	3185	3185	993
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	322	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	59	20	63	1149	177
RTOR Reduction (vph)	0	9	0	0	0	46
Lane Group Flow (vph)	24	50	20	63	1149	131
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	202	2006	2006	625
v/s Ratio Prot				0.02	c0.36	
v/s Ratio Perm	0.02	c0.02	0.06			0.13
v/c Ratio	0.07	0.10	0.10	0.03	0.57	0.21
Uniform Delay, d1	21.0	21.2	5.1	4.9	7.5	5.5
Progression Factor	1.00	1.00	1.00	1.00	0.12	0.00
Incremental Delay, d2	0.1	0.1	1.0	0.0	0.8	0.5
Delay (s)	21.1	21.3	6.1	4.9	1.7	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.2			5.2	1.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1378	160	56	394	0	0	1043	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3113		1570	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3113		220	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1498	174	61	428	0	0	1134	220
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	103	1659	0	61	428	0	0	1134	214
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1512		94	1365			1365	522
v/s Ratio Prot					c0.53			0.13			c0.36	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.14	1.10		0.65	0.31			0.83	0.41
Uniform Delay, d1				10.0	18.0		15.8	13.2			17.7	13.9
Progression Factor				2.13	1.92		0.97	0.90			0.94	0.81
Incremental Delay, d2				0.0	45.0		28.2	0.6			3.6	1.4
Delay (s)				21.2	79.6		43.6	12.5			20.2	12.6
Level of Service				C	E		D	B			C	B
Approach Delay (s)		0.0			76.2			16.4			19.0	
Approach LOS		A			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	1561	56	78	427	0	0	271	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3138			1676	1300
Flt Permitted				0.95	1.00	1.00		0.85			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2692			1676	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	1697	61	85	464	0	0	295	165
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	85
Lane Group Flow (vph)	0	0	0	15	1697	25	0	549	0	0	295	80
Confl. Peds. (#/hr)				62		61	55					55
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1249			778	603
v/s Ratio Prot					c0.53						0.18	
v/s Ratio Perm				0.01		0.02		c0.20				0.06
v/c Ratio				0.03	1.32	0.05		0.44			0.38	0.13
Uniform Delay, d1				12.6	20.9	12.7		12.6			12.2	10.7
Progression Factor				1.90	1.75	6.28		0.74			0.18	0.03
Incremental Delay, d2				0.0	147.9	0.1		0.2			0.7	0.2
Delay (s)				24.0	184.4	80.0		9.6			2.9	0.5
Level of Service				C	F	F		A			A	A
Approach Delay (s)		0.0			179.5			9.6			2.0	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	116.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	428	1312	0	0	0	0	0	1010	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	465	1426	0	0	0	0	0	1098	177
RTOR Reduction (vph)	0	0	0	20	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	445	1426	0	0	0	0	0	1098	161
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.45						c0.24	
v/s Ratio Perm				0.31								0.13
v/c Ratio				0.71	1.04						0.55	0.30
Uniform Delay, d1				16.3	19.9						14.8	12.9
Progression Factor				1.00	1.00						0.76	0.81
Incremental Delay, d2				6.8	34.7						0.8	1.0
Delay (s)				23.1	54.6						12.1	11.5
Level of Service				C	D						B	B
Approach Delay (s)		0.0			46.8			0.0			12.0	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	559	1252	0	0	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	608	1361	0	0	41	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	608	1361	0	0	41	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.20				
v/s Ratio Perm					c0.01	
v/c Ratio	0.35	0.24			0.22	
Uniform Delay, d1	8.1	1.0			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.5	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.4	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	840	163	0	0	0	0	495	98	44	198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4412		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4412		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	913	177	0	0	0	0	538	107	48	215	0
RTOR Reduction (vph)	0	0	107	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	210	913	70	0	0	0	0	606	0	48	215	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1575		158	780	
v/s Ratio Prot		0.16						c0.14		0.02	c0.13	
v/s Ratio Perm	c0.19		0.05									
v/c Ratio	0.48	0.40	0.13					0.38		0.30	0.28	
Uniform Delay, d1	15.9	15.3	13.6					16.8		32.0	11.5	
Progression Factor	1.20	1.14	2.03					1.15		1.00	1.00	
Incremental Delay, d2	3.8	0.5	0.5					0.7		1.1	0.9	
Delay (s)	22.9	18.1	28.2					20.0		33.1	12.3	
Level of Service	C	B	C					B		C	B	
Approach Delay (s)		20.2			0.0			20.0			16.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	727	133	0	0	0	0	388	70	140	1009	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.92	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5467						3029		1469	3185	
Flt Permitted		0.99						1.00		0.43	1.00	
Satd. Flow (perm)		5467						3029		664	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	790	145	0	0	0	0	422	76	152	1097	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	0	1059	0	0	0	0	0	477	0	152	1097	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2421						1341		294	1410	
v/s Ratio Prot								0.16			c0.34	
v/s Ratio Perm		0.19								0.23		
v/c Ratio		0.44						0.36		0.52	0.78	
Uniform Delay, d1		13.5						12.9		14.1	16.6	
Progression Factor		1.14						1.67		0.91	0.99	
Incremental Delay, d2		0.5						0.7		4.0	2.7	
Delay (s)		15.9						22.3		16.8	19.1	
Level of Service		B						C		B	B	
Approach Delay (s)		15.9			0.0			22.3			18.8	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	747	71	0	0	0	0	432	87	0	359	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5392						2939			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5392						2939			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	812	77	0	0	0	0	470	95	0	390	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	957	0	0	0	0	0	541	0	0	390	0
Confl. Peds. (#/hr)	217		174						257	257		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2696						1037			591	
v/s Ratio Prot								0.18			c0.23	
v/s Ratio Perm		0.18										
v/c Ratio		0.35						0.52			0.66	
Uniform Delay, d1		10.6						18.0			19.1	
Progression Factor		1.81						1.26			1.00	
Incremental Delay, d2		0.3						1.7			5.5	
Delay (s)		19.5						24.3			24.7	
Level of Service		B						C			C	
Approach Delay (s)		19.5			0.0			24.3			24.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	619	159	0	0	0	0	0	0	118	1147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5387									4507	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5387									4507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	673	173	0	0	0	0	0	0	128	1247	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	841	0	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2708									1641	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.31									0.83	
Uniform Delay, d1		10.3									20.2	
Progression Factor		1.55									0.88	
Incremental Delay, d2		0.3									4.0	
Delay (s)		16.1									21.7	
Level of Service		B									C	
Approach Delay (s)		16.1			0.0			0.0			21.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	359	1157	199	0	0	0	0	723	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	390	1258	216	0	0	0	0	786	193
RTOR Reduction (vph)	0	0	0	55	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	249	1505	0	0	0	0	0	786	175
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.17	
v/s Ratio Perm				c0.28	0.27							c0.18
v/c Ratio				0.65	0.62						0.40	0.42
Uniform Delay, d1				15.8	15.6						13.8	14.0
Progression Factor				1.06	0.92						1.00	1.00
Incremental Delay, d2				5.9	0.9						0.6	3.1
Delay (s)				22.7	15.1						14.4	17.1
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.4			0.0			14.9	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1219	105	352	591	0	0	0	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5536		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5536		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1325	114	383	642	0	0	0	193
RTOR Reduction (vph)	0	0	0	0	20	0	283	0	0	0	0	178
Lane Group Flow (vph)	0	0	0	0	1419	0	100	642	0	0	0	15
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.14				
v/s Ratio Perm												c0.01
v/c Ratio					0.95		0.12	0.29				0.08
Uniform Delay, d1					25.1		19.8	11.0				29.9
Progression Factor					1.58		1.44	0.97				1.00
Incremental Delay, d2					12.0		0.3	0.3				0.2
Delay (s)					51.6		28.8	11.0				30.1
Level of Service					D		C	B				C
Approach Delay (s)		0.0			51.6			17.7			30.1	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	80	1226	85	56	362	0	0	915	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5589		1509	3185			3185	960
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1004	5589		294	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	87	1333	92	61	393	0	0	995	243
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	87	1410	0	61	393	0	0	995	226
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		131	1419			1419	427
v/s Ratio Prot					c0.25			0.12			c0.31	
v/s Ratio Perm				0.09			0.21					0.24
v/c Ratio				0.21	0.61		0.47	0.28			0.70	0.53
Uniform Delay, d1				13.1	16.1		13.6	12.3			15.6	14.1
Progression Factor				0.28	0.36		0.99	0.89			0.49	0.33
Incremental Delay, d2				1.0	1.0		11.3	0.5			1.9	3.1
Delay (s)				4.6	6.9		24.8	11.4			9.6	7.7
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.7			13.2			9.3	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	21	1214	67	40	530	0	0	269	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3174			1676	1021
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2913			1676	1021
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	1320	73	43	576	0	0	292	100
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1405	0	0	619	0	0	292	83
Confl. Peds. (#/hr)				475		328						224
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1269			730	444
v/s Ratio Prot											0.17	
v/s Ratio Perm					0.25			c0.21				0.08
v/c Ratio					0.59			0.49			0.40	0.19
Uniform Delay, d1					15.3			14.2			13.5	12.1
Progression Factor					0.69			0.29			0.37	0.24
Incremental Delay, d2					1.0			1.2			1.3	0.7
Delay (s)					11.5			5.3			6.3	3.7
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.5			5.3			5.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	105	784	0	0	0	0	0	1221	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	114	852	0	0	0	0	0	1327	326
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	0	0	0	953	0	0	0	0	0	1327	281
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.29	
v/s Ratio Perm					0.17							0.20
v/c Ratio					0.38						0.67	0.45
Uniform Delay, d1					13.5						15.7	13.9
Progression Factor					1.00						1.11	1.11
Incremental Delay, d2					0.5						1.3	1.8
Delay (s)					14.0						18.8	17.2
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1230	227	0	0	0	0	0	0	125	1057	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5608	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5608	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1337	247	0	0	0	0	0	0	136	1149	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1337	230	0	0	0	0	0	0	0	1270	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2435	
v/s Ratio Prot		c0.23										
v/s Ratio Perm			0.23								0.23	
v/c Ratio		0.54	0.53								0.52	
Uniform Delay, d1		14.7	14.6								14.5	
Progression Factor		1.00	1.00								1.65	
Incremental Delay, d2		0.8	4.6								0.7	
Delay (s)		15.5	19.2								24.7	
Level of Service		B	B								C	
Approach Delay (s)		16.1			0.0			0.0			24.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	962	0	0	0	0	0	963	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5223						6307				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5223						6307				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	420	1046	0	0	0	0	0	1047	191	0	0	0
RTOR Reduction (vph)	24	24	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	257	1161	0	0	0	0	0	1214	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2253						2730				
v/s Ratio Prot								c0.19				
v/s Ratio Perm	c0.28	0.22										
v/c Ratio	0.64	0.52						0.44				
Uniform Delay, d1	15.6	14.5						13.9				
Progression Factor	0.22	0.20						1.61				
Incremental Delay, d2	6.6	0.7						0.5				
Delay (s)	10.0	3.6						22.9				
Level of Service	A	A						C				
Approach Delay (s)		4.8			0.0			22.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	708	177	0	0	0	0	285	88	140	815	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.97						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5594						3072		1593	4577	
Flt Permitted		1.00						1.00		0.48	1.00	
Satd. Flow (perm)		5594						3072		804	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	770	192	0	0	0	0	310	96	152	886	0
RTOR Reduction (vph)	0	45	0	0	0	0	0	42	0	0	0	0
Lane Group Flow (vph)	0	917	0	0	0	0	0	364	0	152	886	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						32.0		32.0	32.0	
Effective Green, g (s)		32.0						32.0		32.0	32.0	
Actuated g/C Ratio		0.46						0.46		0.46	0.46	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2557						1404		367	2092	
v/s Ratio Prot		c0.16						0.12			c0.19	
v/s Ratio Perm										0.19		
v/c Ratio		0.36						0.26		0.41	0.42	
Uniform Delay, d1		12.3						11.7		12.7	12.8	
Progression Factor		0.47						0.89		0.85	0.86	
Incremental Delay, d2		0.3						0.4		2.6	0.5	
Delay (s)		6.1						10.8		13.4	11.4	
Level of Service		A						B		B	B	
Approach Delay (s)		6.1			0.0			10.8			11.7	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	780	59	0	0	0	0	498	60	0	285	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5502						3095			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5502						3095			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	848	64	0	0	0	0	541	65	0	310	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	972	0	0	0	0	0	596	0	0	310	0
Confl. Peds. (#/hr)	69		208						75			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		29.0						30.7			30.7	
Effective Green, g (s)		29.0						30.7			30.7	
Actuated g/C Ratio		0.41						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2279						1357			735	
v/s Ratio Prot								c0.19			0.18	
v/s Ratio Perm		0.18										
v/c Ratio		0.43						0.44			0.42	
Uniform Delay, d1		14.6						13.7			13.5	
Progression Factor		0.46						1.74			2.19	
Incremental Delay, d2		0.6						0.9			1.6	
Delay (s)		7.3						24.7			31.2	
Level of Service		A						C			C	
Approach Delay (s)		7.3			0.0			24.7			31.2	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	772	71	0	0	0	0	0	0	94	1111	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	839	77	0	0	0	0	0	0	102	1208	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	902	0	0	0	0	0	0	0	0	1295	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.28	
v/c Ratio		0.37									0.65	
Uniform Delay, d1		13.4									15.6	
Progression Factor		0.16									0.65	
Incremental Delay, d2		0.4									1.3	
Delay (s)		2.5									11.3	
Level of Service		A									B	
Approach Delay (s)		2.5			0.0			0.0			11.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	246	0	0	389	112	315	1278	91	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.16			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	235			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	235			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	267	0	0	423	122	342	1389	99	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	114	0	0	69	0	0	0
Lane Group Flow (vph)	95	267	0	0	423	8	342	1389	30	0	0	0
Confl. Peds. (#/hr)									1280			
Confl. Bikes (#/hr)									24			
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Effective Green, g (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.45			0.33	0.06	0.31	0.31	0.31			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	211	895			1301	89	489	1405	72			
v/s Ratio Prot	c0.03	c0.02			c0.02	0.01		c0.30				
v/s Ratio Perm		0.14			0.11		0.21		0.13			
v/c Ratio	0.45	0.30			0.33	0.09	0.70	0.99	0.42			
Uniform Delay, d1	31.3	12.1			17.7	30.9	21.4	24.1	19.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.2			0.1	0.4	8.1	21.4	17.1			
Delay (s)	32.9	12.2			17.8	31.3	29.5	45.6	36.5			
Level of Service	C	B			B	C	C	D	D			
Approach Delay (s)		17.7			20.8			42.1			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	218	167	83	386	0	0	0	0	155	808	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.96						0.92	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3041						5053	
Flt Permitted		1.00	1.00		0.84						0.99	
Satd. Flow (perm)		1676	971		2587						5053	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	237	182	90	420	0	0	0	0	168	878	104
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	237	170	0	510	0	0	0	0	0	1132	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1210						2144	
v/s Ratio Prot		0.14										
v/s Ratio Perm			0.18		c0.20						0.22	
v/c Ratio		0.30	0.38		0.42						0.53	
Uniform Delay, d1		14.8	15.5		15.9						19.2	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.0	2.4		1.1						0.9	
Delay (s)		15.8	17.8		17.0						20.1	
Level of Service		B	B		B						C	
Approach Delay (s)		16.7			17.0			0.0			20.1	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	246	51	0	445	92	53	284	63	25	214	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.92			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1676	949		3185	775		2750			2964	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.90	
Satd. Flow (perm)		1676	949		3185	775		2437			2688	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	267	55	0	484	100	58	309	68	27	233	25
RTOR Reduction (vph)	0	0	28	0	0	25	0	22	0	0	1	0
Lane Group Flow (vph)	0	267	27	0	484	75	0	413	0	0	284	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		814	460		1547	376		1044			1152	
v/s Ratio Prot		c0.16			0.15							
v/s Ratio Perm			0.03			0.10		c0.17			0.11	
v/c Ratio		0.33	0.06		0.31	0.20		0.40			0.25	
Uniform Delay, d1		11.0	9.5		10.9	10.2		13.8			12.8	
Progression Factor		1.00	1.00		0.13	0.03		1.21			1.00	
Incremental Delay, d2		1.1	0.2		0.4	0.9		1.0			0.5	
Delay (s)		12.1	9.8		1.8	1.2		17.7			13.3	
Level of Service		B	A		A	A		B			B	
Approach Delay (s)		11.7			1.7			17.7			13.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	255	89	48	455	0	0	0	0	119	731	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.54	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	913	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	277	97	52	495	0	0	0	0	129	795	82
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	277	80	52	495	0	0	0	0	129	795	43
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	391	718					513	1369	445
v/s Ratio Prot		0.17			c0.30						c0.25	
v/s Ratio Perm			0.08	0.06						0.11		0.04
v/c Ratio		0.39	0.20	0.13	0.69					0.25	0.58	0.10
Uniform Delay, d1		13.7	12.5	12.1	16.2					12.8	15.2	11.9
Progression Factor		0.76	0.74	1.75	1.74					0.79	0.64	0.90
Incremental Delay, d2		1.5	1.0	0.5	4.2					1.0	1.6	0.4
Delay (s)		11.9	10.2	21.7	32.5					11.1	11.2	11.0
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		11.5			31.4			0.0			11.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	419	0	0	399	172	75	969	67	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.97				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5419				
Flt Permitted	0.32	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	534	1676			1676	976		5419				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	455	0	0	434	187	82	1053	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	13	0	0	0	0
Lane Group Flow (vph)	33	455	0	0	434	169	0	1195	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	193	605			605	352		2724				
v/s Ratio Prot		c0.27			0.26							
v/s Ratio Perm	0.06					0.17		0.22				
v/c Ratio	0.17	0.75			0.72	0.48		0.44				
Uniform Delay, d1	15.2	19.6			19.3	17.3		11.1				
Progression Factor	0.74	0.76			1.34	1.48		0.72				
Incremental Delay, d2	1.9	8.2			4.8	3.1		0.4				
Delay (s)	13.1	23.1			30.7	28.7		8.4				
Level of Service	B	C			C	C		A				
Approach Delay (s)		22.4			30.1			8.4			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	269	49	21	479	44	0	347	55	0	806	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2892			2944	
Flt Permitted	0.25	1.00	1.00	0.48	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	417	1676	929	809	1676	961		2892			2944	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	292	53	23	521	48	0	377	60	0	876	133
RTOR Reduction (vph)	0	0	20	0	0	28	0	14	0	0	12	0
Lane Group Flow (vph)	22	292	33	23	521	20	0	424	0	0	997	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	172	694	384	335	694	398		1446			1472	
v/s Ratio Prot		0.17			c0.31			0.15			c0.34	
v/s Ratio Perm	0.05		0.04	0.03		0.02						
v/c Ratio	0.13	0.42	0.09	0.07	0.75	0.05		0.29			0.68	
Uniform Delay, d1	12.7	14.5	12.5	12.4	17.4	12.3		10.3			13.2	
Progression Factor	0.28	0.25	0.06	1.89	1.78	3.59		1.43			0.62	
Incremental Delay, d2	1.1	1.3	0.3	0.3	5.9	0.2		0.5			2.3	
Delay (s)	4.6	4.9	1.1	23.6	37.0	44.2		15.1			10.5	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.4			37.1			15.1			10.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	255	27	10	441	22	7	536	49	0	303	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	0.47
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3011			1676	667
Flt Permitted	0.32	1.00	1.00	0.54	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	541	1676	621	902	1676	964		2863			1676	667
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	277	29	11	479	24	8	583	53	0	329	85
RTOR Reduction (vph)	0	0	16	0	0	14	0	10	0	0	0	34
Lane Group Flow (vph)	17	277	13	11	479	10	0	634	0	0	329	51
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	custom
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					6
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	0.42
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Grp Cap (vph)	224	696	269	374	696	400		1243			727	277
v/s Ratio Prot		0.17			c0.29						0.20	
v/s Ratio Perm	0.03		0.02	0.01		0.01		c0.22				0.08
v/c Ratio	0.08	0.40	0.05	0.03	0.69	0.02		0.51			0.45	0.18
Uniform Delay, d1	12.3	14.3	11.4	12.1	16.7	12.1		14.4			13.9	12.9
Progression Factor	0.36	0.47	2.68	1.59	1.27	3.40		0.27			0.58	3.13
Incremental Delay, d2	0.6	1.6	0.3	0.1	4.8	0.1		1.3			1.9	1.4
Delay (s)	5.0	8.3	31.0	19.4	26.1	41.1		5.1			10.0	41.8
Level of Service	A	A	C	B	C	D		A			B	D
Approach Delay (s)		10.2			26.6			5.1			16.6	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	259	69	62	383	0	0	0	0	44	912	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1270	1676						4499	987
Flt Permitted		1.00	1.00	0.55	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	735	1676						4499	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	282	75	67	416	0	0	0	0	48	991	130
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	282	49	67	416	0	0	0	0	0	1039	54
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	307	701						1876	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.09							0.23	0.05
v/c Ratio		0.40	0.12	0.22	0.59						0.55	0.13
Uniform Delay, d1		14.2	12.5	13.0	15.7						15.5	12.6
Progression Factor		0.40	0.10	1.00	1.00						0.18	0.08
Incremental Delay, d2		1.6	0.6	1.6	3.7						0.9	0.5
Delay (s)		7.4	1.8	14.7	19.4						3.8	1.5
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.2			18.8			0.0			3.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1247	148	314	1580	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1355	161	341	1717	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	90	120	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1355	71	221	1717	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	2489				
v/s Ratio Prot					c0.23			c0.25				
v/s Ratio Perm						0.06	0.20					
v/c Ratio					0.61	0.16	0.55	0.69				
Uniform Delay, d1					22.2	18.1	22.6	24.2				
Progression Factor					1.00	1.00	0.53	0.68				
Incremental Delay, d2					1.3	0.8	1.8	0.5				
Delay (s)					23.5	18.9	13.7	16.9				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			23.0			16.3			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	888	64	56	395	0	0	662	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4486		1500	3185			3185	1154
Flt Permitted				0.95	1.00		0.33	1.00			1.00	1.00
Satd. Flow (perm)				1346	4486		522	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	965	70	61	429	0	0	720	164
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	93	1023	0	61	429	0	0	720	161
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1538		298	1820			1820	659
v/s Ratio Prot					c0.23			0.13			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.20	0.67		0.20	0.24			0.40	0.24
Uniform Delay, d1				16.2	19.6		7.3	7.4			8.3	7.5
Progression Factor				0.35	0.32		0.26	0.28			1.23	1.31
Incremental Delay, d2				0.9	2.1		1.4	0.3			0.5	0.7
Delay (s)				6.5	8.4		3.3	2.3			10.7	10.5
Level of Service				A	A		A	A			B	B
Approach Delay (s)		0.0			8.2			2.5			10.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	27	865	41	66	555	0	0	281	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5680			3168			1676	1187
Flt Permitted					1.00			0.88			1.00	1.00
Satd. Flow (perm)					5680			2818			1676	1187
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	29	940	45	72	603	0	0	305	83
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	58
Lane Group Flow (vph)	0	0	0	0	1005	0	0	675	0	0	305	25
Confl. Peds. (#/hr)				56		67						113
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					27.0			32.7			20.7	20.7
Effective Green, g (s)					27.0			32.7			20.7	20.7
Actuated g/C Ratio					0.39			0.47			0.30	0.30
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2190			1349			495	351
v/s Ratio Prot								c0.05			c0.18	
v/s Ratio Perm					0.18			0.19				0.02
v/c Ratio					0.46			0.50			0.62	0.07
Uniform Delay, d1					16.0			13.0			21.2	17.7
Progression Factor					0.84			1.18			1.28	5.51
Incremental Delay, d2					0.7			1.2			5.3	0.4
Delay (s)					14.2			16.5			32.5	98.1
Level of Service					B			B			C	F
Approach Delay (s)		0.0			14.2			16.5			46.5	
Approach LOS		A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	633	0	0	0	0	0	724	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5621						4577	1321
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5621						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	688	0	0	0	0	0	787	321
RTOR Reduction (vph)	0	0	0	0	32	0	0	0	0	0	0	55
Lane Group Flow (vph)	0	0	0	0	742	0	0	0	0	0	787	266
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2192						2190	632
v/s Ratio Prot											0.17	
v/s Ratio Perm					0.13							c0.20
v/c Ratio					0.34						0.36	0.42
Uniform Delay, d1					15.0						11.5	11.9
Progression Factor					1.00						0.30	0.14
Incremental Delay, d2					0.4						0.4	1.8
Delay (s)					15.4						3.9	3.4
Level of Service					B						A	A
Approach Delay (s)		0.0			15.4			0.0			3.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	483	1252	0	0	0	0	0	1992	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	999	5272						4577	1025			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	999	5272						4577	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	1361	0	0	0	0	0	2165	172	0	0	0
RTOR Reduction (vph)	16	16	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	346	1508	0	0	0	0	0	2165	157	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	35.6	35.6						43.8	43.8			
Effective Green, g (s)	35.6	35.6						43.8	43.8			
Actuated g/C Ratio	0.40	0.40						0.49	0.49			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	395	2085						2227	498			
v/s Ratio Prot								c0.47				
v/s Ratio Perm	c0.35	0.29							0.15			
v/c Ratio	0.88	0.72						0.97	0.32			
Uniform Delay, d1	25.1	23.0						22.5	14.0			
Progression Factor	1.00	1.00						1.67	1.92			
Incremental Delay, d2	22.7	2.2						11.2	1.3			
Delay (s)	47.9	25.2						48.8	28.2			
Level of Service	D	C						D	C			
Approach Delay (s)		29.6			0.0			47.3			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1430	175	0	0	0	0	0	0	183	647	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5673								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5673								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1554	190	0	0	0	0	0	0	199	703	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1720	0	0	0	0	0	0	0	187	703	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2206								785	2845	
v/s Ratio Prot		c0.30									c0.12	
v/s Ratio Perm										0.12		
v/c Ratio		0.78								0.24	0.25	
Uniform Delay, d1		24.1								13.1	13.2	
Progression Factor		1.53								0.58	0.63	
Incremental Delay, d2		2.3								0.6	0.2	
Delay (s)		39.3								8.2	8.4	
Level of Service		D								A	A	
Approach Delay (s)		39.3			0.0			0.0			8.4	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	980	57	0	0	0	0	352	91	54	204	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.94			1.00	
Flpb, ped/bikes		0.97						1.00			0.97	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5476						2911			3071	
Flt Permitted		0.99						1.00			0.81	
Satd. Flow (perm)		5476						2911			2520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	1065	62	0	0	0	0	383	99	59	222	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	1288	0	0	0	0	0	464	0	0	281	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2659						1247			1080	
v/s Ratio Prot								c0.16				
v/s Ratio Perm		0.24									0.11	
v/c Ratio		0.48						0.37			0.26	
Uniform Delay, d1		12.1						13.6			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.6						0.9			0.6	
Delay (s)		12.7						14.4			19.8	
Level of Service		B						B			B	
Approach Delay (s)		12.7			0.0			14.4			19.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1217	235	0	0	0	0	0	0	177	894	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1323	255	0	0	0	0	0	0	192	972	0
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1323	228	0	0	0	0	0	0	170	972	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.29									c0.21	
v/s Ratio Perm			0.18							0.11		
v/c Ratio		0.66	0.41							0.27	0.51	
Uniform Delay, d1		15.6	13.5							13.4	15.1	
Progression Factor		1.31	1.35							0.33	0.43	
Incremental Delay, d2		1.7	2.1							1.0	0.9	
Delay (s)		22.0	20.3							5.4	7.5	
Level of Service		C	C							A	A	
Approach Delay (s)		21.7			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1146	0	0	0	0	0	1158	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4469						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4469						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1246	0	0	0	0	0	1259	82	0	0	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1490	0	0	0	0	0	1259	67	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1602						2308	678			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.33							0.05			
v/c Ratio		0.93						0.55	0.10			
Uniform Delay, d1		21.6						11.9	9.1			
Progression Factor		0.42						1.82	2.25			
Incremental Delay, d2		9.1						0.5	0.2			
Delay (s)		18.1						22.1	20.6			
Level of Service		B						C	C			
Approach Delay (s)		18.1			0.0			22.0			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	963	51	0	0	0	0	439	70	156	431	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4447						3043		1593	3185	
Flt Permitted		1.00						1.00		0.39	1.00	
Satd. Flow (perm)		4447						3043		660	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1047	55	0	0	0	0	477	76	170	468	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1150	0	0	0	0	0	548	0	170	468	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1905						1478		320	1547	
v/s Ratio Prot								0.18			0.15	
v/s Ratio Perm		0.26								c0.26		
v/c Ratio		0.60						0.37		0.53	0.30	
Uniform Delay, d1		15.4						11.3		12.5	10.9	
Progression Factor		1.65						1.88		1.17	1.04	
Incremental Delay, d2		0.6						0.7		5.9	0.5	
Delay (s)		26.0						21.9		20.4	11.8	
Level of Service		C						C		C	B	
Approach Delay (s)		26.0			0.0			21.9			14.1	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1044	61	0	0	0	0	544	82	0	302	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.97			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4410						3042			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4410						3042			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1135	66	0	0	0	0	591	89	0	328	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	61	1192	0	0	0	0	0	678	0	0	328	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1839						1325			730	
v/s Ratio Prot		c0.27						c0.22			0.20	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.65						0.51			0.45	
Uniform Delay, d1	12.5	16.3						14.3			13.9	
Progression Factor	0.32	0.27						0.31			0.72	
Incremental Delay, d2	0.4	1.5						1.2			1.6	
Delay (s)	4.3	5.9						5.6			11.5	
Level of Service	A	A						A			B	
Approach Delay (s)		5.8			0.0			5.6			11.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	791	61	0	0	0	0	721	88	109	609	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1545	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.30	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	487	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	860	66	0	0	0	0	784	96	118	662	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	111	914	0	0	0	0	0	784	79	118	662	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	244	1597	
v/s Ratio Prot		c0.20						c0.25			0.21	
v/s Ratio Perm	0.08								0.06	0.24		
v/c Ratio	0.22	0.58						0.49	0.13	0.48	0.41	
Uniform Delay, d1	15.8	18.3						11.5	9.3	11.5	11.0	
Progression Factor	1.02	1.11						0.26	0.08	1.00	1.00	
Incremental Delay, d2	0.8	1.2						0.8	0.3	6.7	0.8	
Delay (s)	16.9	21.5						3.8	1.0	18.2	11.8	
Level of Service	B	C						A	A	B	B	
Approach Delay (s)		21.0			0.0			3.5			12.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1110	103	63	852	175	228	1581	167	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1586	4577	1380	1578	4577	1177	1449	4577	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	379	4577	1380	488	4577	1177	1449	4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	1207	112	68	926	190	248	1718	182	0	0	0
RTOR Reduction (vph)	0	0	44	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	240	1207	68	68	926	77	248	1718	147	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	197	1251	832	73	691	177	859	2715	798			
v/s Ratio Prot	c0.09	0.26	0.03		0.20		0.10	c0.38				
v/s Ratio Perm	c0.24		0.02	0.14		0.07	0.08		0.11			
v/c Ratio	1.22	0.96	0.08	0.93	1.34	0.44	0.29	0.63	0.18			
Uniform Delay, d1	31.0	32.3	7.4	37.7	38.2	34.7	9.0	11.9	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.68	1.61	2.09			
Incremental Delay, d2	135.3	18.3	0.0	87.4	162.7	7.6	0.1	0.8	0.4			
Delay (s)	166.3	50.6	7.5	125.2	200.9	42.3	15.3	19.9	17.8			
Level of Service	F	D	A	F	F	D	B	B	B			
Approach Delay (s)		65.3			171.1			19.2			0.0	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	70.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	909	100	42	824	0	0	0	0	78	462	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.18	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	304	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	988	109	46	896	0	0	0	0	85	502	121
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	988	47	46	896	0	0	0	0	0	587	82
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	130	1365						2429	604
v/s Ratio Prot		c0.31			0.28							
v/s Ratio Perm			0.03	0.15							0.10	0.06
v/c Ratio		0.72	0.08	0.35	0.66						0.24	0.14
Uniform Delay, d1		16.6	11.8	13.5	15.9						12.9	12.3
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		3.4	0.2	7.4	2.5						0.2	0.5
Delay (s)		19.9	12.1	20.9	18.4						13.2	12.8
Level of Service		B	B	C	B						B	B
Approach Delay (s)		19.2			18.5			0.0			13.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	979	58	17	703	74	79	279	38	30	146	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	0.94	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1496	3128		1593	3043			2999			2809	
Flt Permitted	0.26	1.00		0.15	1.00			0.81			0.87	
Satd. Flow (perm)	406	3128		257	3043			2462			2462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	1064	63	18	764	80	86	303	41	33	159	96
RTOR Reduction (vph)	0	4	0	0	8	0	0	8	0	0	30	0
Lane Group Flow (vph)	158	1123	0	18	836	0	0	422	0	0	258	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	203	1570		129	1527			989			989	
v/s Ratio Prot		0.36			0.27							
v/s Ratio Perm	c0.39			0.07				c0.17			0.10	
v/c Ratio	0.78	0.71		0.14	0.55			0.43			0.26	
Uniform Delay, d1	20.4	19.3		13.3	17.1			21.6			20.0	
Progression Factor	1.00	1.00		0.58	0.51			1.00			1.00	
Incremental Delay, d2	24.9	2.8		2.1	1.3			1.3			0.6	
Delay (s)	45.3	22.2		9.8	10.1			22.9			20.6	
Level of Service	D	C		A	B			C			C	
Approach Delay (s)		25.0			10.1			22.9			20.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱		↰	↑↑					↰	↑↑↑	↱
Volume (vph)	0	742	97	51	589	0	0	0	0	199	673	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		350	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	807	105	55	640	0	0	0	0	216	732	151
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	902	0	55	640	0	0	0	0	216	732	68
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		157	1433					716	2059	641
v/s Ratio Prot		c0.29			0.20						c0.16	
v/s Ratio Perm				0.16						0.14		0.05
v/c Ratio		0.64		0.35	0.45					0.30	0.36	0.11
Uniform Delay, d1		21.3		18.0	18.9					17.5	18.0	15.9
Progression Factor		0.31		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.6		6.1	1.0					1.1	0.5	0.3
Delay (s)		8.2		24.0	19.9					18.6	18.5	16.2
Level of Service		A		C	B					B	B	B
Approach Delay (s)		8.2			20.3			0.0			18.2	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	856	0	0	578	86	99	1332	70	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.32	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	530	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	930	0	0	628	93	108	1448	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	44	0	0	0
Lane Group Flow (vph)	154	930	0	0	717	0	0	1556	32	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	243	1460			1432			1824	570			
v/s Ratio Prot		c0.29			0.23							
v/s Ratio Perm	0.29							0.34	0.02			
v/c Ratio	0.63	0.64			0.50			0.85	0.06			
Uniform Delay, d1	14.5	14.5			13.3			19.1	12.9			
Progression Factor	1.00	1.00			0.67			0.55	0.80			
Incremental Delay, d2	12.0	2.1			1.2			3.9	0.1			
Delay (s)	26.4	16.6			10.0			14.4	10.4			
Level of Service	C	B			B			B	B			
Approach Delay (s)		18.0			10.0			14.2			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	744	51	53	603	71	44	379	32	49	363	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3155		1593	3135		1593	3148		1593	3185	1425
Flt Permitted	0.30	1.00		0.24	1.00		0.48	1.00		0.44	1.00	1.00
Satd. Flow (perm)	506	3155		405	3135		805	3148		744	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	809	55	58	655	77	48	412	35	53	395	85
RTOR Reduction (vph)	0	7	0	0	13	0	0	9	0	0	0	49
Lane Group Flow (vph)	78	857	0	58	719	0	48	438	0	53	395	36
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	242	1509		193	1500		345	1349		318	1365	610
v/s Ratio Prot		c0.27			0.23			c0.14			0.12	
v/s Ratio Perm	0.15			0.14			0.06			0.07		0.03
v/c Ratio	0.32	0.57		0.30	0.48		0.14	0.32		0.17	0.29	0.06
Uniform Delay, d1	11.3	13.1		11.1	12.3		12.2	13.3		12.3	13.0	11.7
Progression Factor	1.85	1.74		1.03	1.08		1.48	1.50		0.43	0.46	0.37
Incremental Delay, d2	2.8	1.3		3.6	1.0		0.8	0.6		1.1	0.5	0.2
Delay (s)	23.6	23.9		15.0	14.3		18.8	20.5		6.4	6.6	4.5
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		23.9			14.4			20.4			6.2	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	751	43	51	600	34	48	582	70	0	254	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	0.90
Flpb, ped/bikes	0.97	1.00		0.97	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1547	3135		1549	3143			3159	1330		1676	1275
Flt Permitted	0.32	1.00		0.24	1.00			0.91	1.00		1.00	1.00
Satd. Flow (perm)	527	3135		384	3143			2878	1330		1676	1275
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	816	47	55	652	37	52	633	76	0	276	107
RTOR Reduction (vph)	0	6	0	0	6	0	0	0	32	0	0	52
Lane Group Flow (vph)	46	857	0	55	683	0	0	685	44	0	276	55
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	225	1343		164	1347			1233	570		718	546
v/s Ratio Prot		c0.27			0.22						0.16	
v/s Ratio Perm	0.09			0.14				c0.24	0.03			0.04
v/c Ratio	0.20	0.64		0.34	0.51			0.56	0.08		0.38	0.10
Uniform Delay, d1	12.5	15.7		13.3	14.6			15.0	11.8		13.7	11.9
Progression Factor	1.54	1.58		1.49	1.55			0.45	0.27		1.55	2.92
Incremental Delay, d2	1.8	2.0		5.3	1.3			1.6	0.2		1.4	0.3
Delay (s)	21.1	26.8		25.1	24.0			8.3	3.4		22.6	35.2
Level of Service	C	C		C	C			A	A		C	D
Approach Delay (s)		26.5			24.1			7.8			26.1	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	593	83	29	380	40	61	719	78	76	480	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3127		1593	3140		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.25	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3127		624	3140		422	3185	1425	425	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	645	90	32	413	43	66	782	85	83	522	135
RTOR Reduction (vph)	0	15	0	0	11	0	0	0	52	0	0	83
Lane Group Flow (vph)	122	720	0	32	445	0	66	782	33	83	522	52
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1460		211	1063		162	1228	549	163	646	549
v/s Ratio Prot	c0.08	c0.23			0.14			0.25			c0.31	
v/s Ratio Perm				0.05			0.16		0.02	0.20		0.04
v/c Ratio	0.98	0.49		0.15	0.42		0.41	0.64	0.06	0.51	0.81	0.09
Uniform Delay, d1	32.2	12.9		16.1	17.8		15.7	17.5	13.5	16.4	19.2	13.7
Progression Factor	0.42	1.13		1.00	1.00		0.65	0.64	0.44	1.41	1.42	4.08
Incremental Delay, d2	64.5	1.0		1.5	1.2		6.7	2.3	0.2	10.1	9.7	0.3
Delay (s)	77.9	15.5		17.7	19.1		16.8	13.5	6.1	33.3	37.0	56.3
Level of Service	E	B		B	B		B	B	A	C	D	E
Approach Delay (s)		24.4			19.0			13.0			40.1	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	23	23	51	34	33	37	1909	9	9	164	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1425	1593	3137	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1425	165	3137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	25	25	55	37	36	40	2075	10	10	178	20
RTOR Reduction (vph)	0	0	20	0	0	34	0	0	4	0	7	0
Lane Group Flow (vph)	30	25	5	55	37	2	40	2075	6	10	191	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Effective Green, g (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Actuated g/C Ratio	0.17	0.15	0.21	0.08	0.06	0.06	0.06	0.57	0.57	0.45	0.45	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	256	304	125	198	88	95	2598	809	74	1418	
v/s Ratio Prot	0.01	c0.01	0.00	c0.03	0.01		0.03	c0.45			0.06	
v/s Ratio Perm			0.00			0.00			0.00	0.06		
v/c Ratio	0.06	0.10	0.02	0.44	0.19	0.03	0.42	0.80	0.01	0.14	0.13	
Uniform Delay, d1	31.3	32.7	28.0	39.6	40.0	39.6	40.8	15.4	8.4	14.4	14.4	
Progression Factor	1.00	1.00	1.00	0.78	0.79	1.00	1.00	1.00	1.00	1.19	1.24	
Incremental Delay, d2	0.0	0.2	0.0	2.5	0.5	0.1	3.0	2.7	0.0	3.6	0.2	
Delay (s)	31.4	32.9	28.0	33.5	32.0	39.8	43.8	18.1	8.5	20.8	18.0	
Level of Service	C	C	C	C	C	D	D	B	A	C	B	
Approach Delay (s)		30.8			34.8			18.5			18.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	9	49	193	0	0	0	0	0	433	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1450	1593	3185						4577	1425
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1450	1593	3185						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	10	53	210	0	0	0	0	0	471	90
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	0	0	4	53	210	0	0	0	0	0	471	36
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			35.4	5.1	44.0						36.1	36.1
Effective Green, g (s)			35.4	5.1	44.0						36.1	36.1
Actuated g/C Ratio			0.39	0.06	0.49						0.40	0.40
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			570	90	1557						1835	571
v/s Ratio Prot				c0.03	c0.07						c0.10	
v/s Ratio Perm			0.00									0.03
v/c Ratio			0.01	0.59	0.13						0.26	0.06
Uniform Delay, d1			16.6	41.4	12.6						18.0	16.6
Progression Factor			1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2			0.0	9.5	0.2						0.3	0.2
Delay (s)			16.6	50.9	12.8						18.3	16.8
Level of Service			B	D	B						B	B
Approach Delay (s)		16.6			20.5			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	183	102	19	219	0	0	158	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.95			1.00			0.97	
Flt Protected					0.99			1.00			1.00	
Satd. Flow (prot)					3000			3172			3095	
Flt Permitted					0.99			0.93			1.00	
Satd. Flow (perm)					3000			2958			3095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	50	199	111	21	238	0	0	172	36
RTOR Reduction (vph)	0	0	0	0	73	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	287	0	0	259	0	0	194	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					17.2			43.6			43.6	
Effective Green, g (s)					17.2			43.6			43.6	
Actuated g/C Ratio					0.25			0.62			0.62	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					737			1842			1927	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.10			c0.09				
v/c Ratio					0.39			0.14			0.10	
Uniform Delay, d1					22.0			5.5			5.3	
Progression Factor					1.15			1.00			1.00	
Incremental Delay, d2					1.5			0.2			0.1	
Delay (s)					26.9			5.6			5.4	
Level of Service					C			A			A	
Approach Delay (s)		0.0			26.9			5.6			5.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	81	197	0	0	0	0	0	675	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.89
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	3185						4577	1265
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	3185						4577	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	88	214	0	0	0	0	0	734	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	0	0	0	88	214	0	0	0	0	0	734	31
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	1146						2314	639
v/s Ratio Prot					c0.07						c0.16	
v/s Ratio Perm				0.06								0.02
v/c Ratio				0.17	0.19						0.32	0.05
Uniform Delay, d1				15.3	15.4						10.2	8.8
Progression Factor				0.58	0.58						1.00	1.00
Incremental Delay, d2				0.7	0.3						0.4	0.1
Delay (s)				9.6	9.3						10.5	8.9
Level of Service				A	A						B	A
Approach Delay (s)		0.0			9.4			0.0			10.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	188	64	78	1420	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3185	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3185	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	204	70	85	1543	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	204	54	0	1614	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1192	533		2243				
v/s Ratio Prot					c0.06							
v/s Ratio Perm						0.04		0.35				
v/c Ratio					0.17	0.10		0.72				
Uniform Delay, d1					14.6	14.2		14.0				
Progression Factor					1.49	1.71		1.00				
Incremental Delay, d2					0.3	0.4		2.0				
Delay (s)					22.1	24.7		16.0				
Level of Service					C	C		B				
Approach Delay (s)		0.0			22.8			16.0			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	25	174	37	27	405	0	0	457	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.93
Flpb, ped/bikes				0.93	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.97		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1488	3083		1549	3185			3185	1328
Flt Permitted				0.95	1.00		0.45	1.00			1.00	1.00
Satd. Flow (perm)				1488	3083		738	3185			3185	1328
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	27	189	40	29	440	0	0	497	43
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	27	204	0	29	440	0	0	497	26
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				21.0	21.0		43.0	43.0			43.0	43.0
Effective Green, g (s)				21.0	21.0		43.0	43.0			43.0	43.0
Actuated g/C Ratio				0.30	0.30		0.61	0.61			0.61	0.61
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				446	924		453	1956			1956	815
v/s Ratio Prot					c0.07			0.14			c0.16	
v/s Ratio Perm				0.02			0.04					0.02
v/c Ratio				0.06	0.22		0.06	0.22			0.25	0.03
Uniform Delay, d1				17.5	18.4		5.4	6.0			6.2	5.3
Progression Factor				0.46	0.36		1.00	1.00			0.64	0.33
Incremental Delay, d2				0.3	0.5		0.3	0.3			0.3	0.1
Delay (s)				8.2	7.1		5.7	6.3			4.2	1.8
Level of Service				A	A		A	A			A	A
Approach Delay (s)		0.0			7.3			6.3			4.0	
Approach LOS		A			A			A			A	

Intersection Summary				
HCM 2000 Control Delay	5.5	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.24			
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	51.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	178	33	70	725	0	0	385	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.69	1.00	1.00			0.98	
Flpb, ped/bikes					0.93	1.00	0.93	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.99	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					2934	984	1483	3185			1632	
Flt Permitted					0.99	1.00	0.39	1.00			1.00	
Satd. Flow (perm)					2934	984	610	3185			1632	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	193	36	76	788	0	0	418	38
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	0	236	13	76	788	0	0	451	0
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					1089	365	300	1569			804	
v/s Ratio Prot								0.25			c0.28	
v/s Ratio Perm					0.08	0.01	0.12					
v/c Ratio					0.22	0.04	0.25	0.50			0.56	
Uniform Delay, d1					15.0	14.0	10.3	12.0			12.4	
Progression Factor					1.40	1.87	1.00	1.00			1.17	
Incremental Delay, d2					0.4	0.2	2.0	1.2			2.7	
Delay (s)					21.5	26.3	12.3	13.1			17.3	
Level of Service					C	C	B	B			B	
Approach Delay (s)		0.0			22.2			13.0			17.3	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	162	46	60	840	0	0	469	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3071		1593	3185			3110	
Flt Permitted					0.99		0.39	1.00			1.00	
Satd. Flow (perm)					3071		658	3185			3110	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	176	50	65	913	0	0	510	95
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	0	245	0	65	913	0	0	583	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					22.0		42.0	42.0			42.0	
Effective Green, g (s)					22.0		42.0	42.0			42.0	
Actuated g/C Ratio					0.31		0.60	0.60			0.60	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					965		394	1911			1866	
v/s Ratio Prot								c0.29			0.19	
v/s Ratio Perm					0.08		0.10					
v/c Ratio					0.25		0.16	0.48			0.31	
Uniform Delay, d1					17.9		6.2	7.9			6.9	
Progression Factor					1.00		1.00	1.00			1.59	
Incremental Delay, d2					0.6		0.9	0.9			0.3	
Delay (s)					18.5		7.1	8.7			11.2	
Level of Service					B		A	A			B	
Approach Delay (s)		0.0			18.5			8.6			11.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	729	197	191	697	101	205	537	214	116	312	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	0.99	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1507	3185	1097	1584	4383		1541	3185	1229	1484	3045	
Flt Permitted	0.31	1.00	1.00	0.19	1.00		0.44	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	499	3185	1097	317	4383		712	3185	1229	675	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	792	214	208	758	110	223	584	233	126	339	54
RTOR Reduction (vph)	0	0	141	0	21	0	0	0	15	0	14	0
Lane Group Flow (vph)	211	792	73	208	847	0	223	584	218	126	379	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1079	371	241	1972		350	1362	621	228	1031	
v/s Ratio Prot		0.25		c0.07	0.19		c0.04	0.18	0.03		0.12	
v/s Ratio Perm	c0.42		0.07	0.32			c0.24		0.15	0.19		
v/c Ratio	1.25	0.73	0.20	0.86	0.43		0.64	0.43	0.35	0.55	0.37	
Uniform Delay, d1	29.8	26.2	21.1	18.6	16.9		19.7	18.0	13.4	24.2	22.5	
Progression Factor	1.00	1.00	1.00	1.84	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	151.4	4.4	1.2	20.6	0.5		3.8	1.0	0.3	9.3	1.0	
Delay (s)	181.1	30.6	22.2	54.7	13.4		23.5	19.0	13.7	33.5	23.5	
Level of Service	F	C	C	D	B		C	B	B	C	C	
Approach Delay (s)		55.2			21.4			18.8			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	677	127	191	838	459	27	547	83	48	668	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1190	3090	3185	1248	1470	3185	1315	1540	3185	1121
Flt Permitted	0.19	1.00	1.00	0.95	1.00	1.00	0.25	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	311	3185	1190	3090	3185	1248	381	3185	1315	533	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	736	138	208	911	499	29	595	90	52	726	142
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	19	0	0	17
Lane Group Flow (vph)	260	736	90	208	911	451	29	595	71	52	726	125
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Effective Green, g (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	1263	472	302	1256	492	129	1079	574	180	1079	491
v/s Ratio Prot	c0.09	0.23		0.07	0.29			0.19	0.01		c0.23	0.03
v/s Ratio Perm	c0.37		0.08			0.36	0.08		0.04	0.10		0.09
v/c Ratio	0.92	0.58	0.19	0.69	0.73	0.92	0.22	0.55	0.12	0.29	0.67	0.25
Uniform Delay, d1	16.0	21.3	17.7	39.3	23.1	25.8	21.3	24.2	15.1	21.8	25.5	16.0
Progression Factor	2.24	0.78	0.89	0.81	1.09	1.08	1.00	1.02	0.94	1.00	1.00	1.00
Incremental Delay, d2	28.1	1.5	0.7	5.5	3.2	21.7	3.9	2.0	0.1	4.0	3.4	0.3
Delay (s)	63.8	18.2	16.5	37.5	28.4	49.7	25.2	26.7	14.2	25.8	28.8	16.2
Level of Service	E	B	B	D	C	D	C	C	B	C	C	B
Approach Delay (s)		28.4			36.1			25.1			26.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

3: Olive Street & 1st Street

PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	747	40	64	867	603	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2381
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2381
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	812	43	70	942	655	951
RTOR Reduction (vph)	0	25	0	0	0	20
Lane Group Flow (vph)	812	18	70	942	655	931
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	37.2	37.2	15.1	55.8	24.4	39.5
Effective Green, g (s)	37.2	37.2	15.1	55.8	24.4	39.5
Actuated g/C Ratio	0.41	0.41	0.17	0.62	0.27	0.44
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1316	433	267	1974	837	1044
v/s Ratio Prot	c0.25		0.04	0.30	0.21	c0.15
v/s Ratio Perm		0.02				0.24
v/c Ratio	0.62	0.04	0.26	0.48	0.78	0.89
Uniform Delay, d1	20.8	15.8	32.6	9.2	30.3	23.3
Progression Factor	1.66	3.08	0.78	2.02	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.4	0.7	4.8	9.8
Delay (s)	36.4	48.7	25.7	19.3	35.2	33.1
Level of Service	D	D	C	B	D	C
Approach Delay (s)	37.0			19.8	33.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	949	31	33	610	61	81	560	43	85	783	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.91	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	3185	1143	1521	3185	1196	1451	3131		1586	3185	976
Flt Permitted	0.20	1.00	1.00	0.28	1.00	1.00	0.30	1.00		0.24	1.00	1.00
Satd. Flow (perm)	338	3185	1143	444	3185	1196	457	3131		399	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1032	34	36	663	66	88	609	47	92	851	157
RTOR Reduction (vph)	0	0	18	0	0	48	0	7	0	0	0	92
Lane Group Flow (vph)	259	1032	16	36	663	18	88	649	0	92	851	65
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	42.4	42.4	42.4	24.5	24.5	24.5	27.6	27.6		37.0	37.0	37.0
Effective Green, g (s)	42.4	42.4	42.4	24.5	24.5	24.5	27.6	27.6		37.0	37.0	37.0
Actuated g/C Ratio	0.47	0.47	0.47	0.27	0.27	0.27	0.31	0.31		0.41	0.41	0.41
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	365	1500	538	120	867	325	140	960		248	1309	401
v/s Ratio Prot	c0.12	0.32			0.21			0.21		0.03	c0.27	
v/s Ratio Perm	c0.22		0.01	0.08		0.02	0.19			0.13		0.07
v/c Ratio	0.71	0.69	0.03	0.30	0.76	0.06	0.63	0.68		0.37	0.65	0.16
Uniform Delay, d1	16.7	18.6	12.8	26.0	30.1	24.2	26.8	27.3		17.6	21.3	16.7
Progression Factor	1.10	1.14	0.82	0.90	0.97	4.34	1.48	1.43		1.00	1.00	1.00
Incremental Delay, d2	4.1	1.7	0.1	5.3	5.4	0.3	7.4	1.6		0.9	1.2	0.2
Delay (s)	22.6	23.0	10.6	28.7	34.7	105.2	47.0	40.6		18.5	22.5	16.9
Level of Service	C	C	B	C	C	F	D	D		B	C	B
Approach Delay (s)		22.6			40.5			41.3			21.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1036	40	43	676	76	58	548	121	78	407	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1573	3185	1071	1512	3185	1050	1531	4288		1497	2935	
Flt Permitted	0.25	1.00	1.00	0.25	1.00	1.00	0.28	1.00		0.28	1.00	
Satd. Flow (perm)	413	3185	1071	402	3185	1050	449	4288		442	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1126	43	47	735	83	63	596	132	85	442	180
RTOR Reduction (vph)	0	0	18	0	0	48	0	28	0	0	49	0
Lane Group Flow (vph)	245	1126	25	47	735	35	63	700	0	85	573	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1886	634	169	1344	443	144	1381		142	945	
v/s Ratio Prot	0.08	c0.35			0.23			0.16			c0.20	
v/s Ratio Perm	c0.28		0.02	0.12		0.03	0.14			0.19		
v/c Ratio	0.61	0.60	0.04	0.28	0.55	0.08	0.44	0.51		0.60	0.61	
Uniform Delay, d1	10.6	11.6	7.7	17.0	19.5	15.5	24.1	24.7		25.6	25.7	
Progression Factor	1.70	1.81	2.30	0.56	0.61	0.72	1.09	1.09		1.00	1.00	
Incremental Delay, d2	2.2	1.2	0.1	3.6	1.4	0.3	9.1	1.3		17.3	2.9	
Delay (s)	20.1	22.2	17.8	13.2	13.3	11.6	35.4	28.2		42.9	28.6	
Level of Service	C	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		21.7			13.1			28.8			30.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1049	50	35	637	5	0	0	0	84	456	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1571	3185	1027	1514	3177						4449	1264
Flt Permitted	0.27	1.00	1.00	0.22	1.00						0.99	1.00
Satd. Flow (perm)	454	3185	1027	346	3177						4449	1264
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1140	54	38	692	5	0	0	0	91	496	177
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	0	0	0	27
Lane Group Flow (vph)	107	1140	29	38	696	0	0	0	0	0	587	150
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Effective Green, g (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	342	1691	545	140	1291						1557	557
v/s Ratio Prot	0.03	c0.36			0.22							0.02
v/s Ratio Perm	0.14		0.03	0.11							0.13	0.09
v/c Ratio	0.31	0.67	0.05	0.27	0.54						0.38	0.27
Uniform Delay, d1	11.5	15.4	10.2	17.8	20.3						21.9	15.9
Progression Factor	1.17	1.00	2.07	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	1.8	0.1	4.7	1.6						0.7	0.3
Delay (s)	13.9	17.1	21.3	22.5	21.9						22.6	16.2
Level of Service	B	B	C	C	C						C	B
Approach Delay (s)		17.0			21.9			0.0			21.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	9	24	27	43	97	19	403	16	11	887	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2613		1593	2505		1576	3149		1471	3185	1341
Flt Permitted	0.95	1.00		0.95	1.00		0.22	1.00		0.48	1.00	1.00
Satd. Flow (perm)	1593	2613		1593	2505		371	3149		736	3185	1341
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	10	26	29	47	105	21	438	17	12	964	95
RTOR Reduction (vph)	0	18	0	0	84	0	0	2	0	0	0	25
Lane Group Flow (vph)	107	18	0	29	68	0	21	453	0	12	964	70
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Effective Green, g (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Actuated g/C Ratio	0.11	0.29		0.02	0.20		0.52	0.52		0.52	0.52	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	760		35	512		194	1647		385	1666	847
v/s Ratio Prot	c0.07	0.01		0.02	c0.03			0.14			c0.30	0.01
v/s Ratio Perm							0.06			0.02		0.04
v/c Ratio	0.62	0.02		0.83	0.13		0.11	0.27		0.03	0.58	0.08
Uniform Delay, d1	38.3	22.8		43.8	29.3		10.8	11.9		10.4	14.7	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.14	1.26		2.12	2.04	2.94
Incremental Delay, d2	6.4	0.0		84.5	0.1		1.1	0.4		0.1	1.2	0.0
Delay (s)	44.8	22.8		128.3	29.4		13.4	15.4		22.1	31.1	19.0
Level of Service	D	C		F	C		B	B		C	C	B
Approach Delay (s)		39.2			45.2			15.3			30.0	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	619	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.94	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3157		1569	3112		1501	3185	1300
Flt Permitted		1.00	1.00		1.00		0.18	1.00		0.28	1.00	1.00
Satd. Flow (perm)		1676	1277		3157		290	3112		444	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	182	0	323	13	86	673	47	34	937	34
RTOR Reduction (vph)	0	0	15	0	3	0	0	5	0	0	0	21
Lane Group Flow (vph)	0	432	167	0	333	0	86	715	0	34	937	13
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1543		114	1230		175	1259	514
v/s Ratio Prot		c0.26			0.11			0.23			0.29	
v/s Ratio Perm			0.13				c0.30			0.08		0.01
v/c Ratio		0.53	0.27		0.22		0.75	0.58		0.19	0.74	0.03
Uniform Delay, d1		15.8	13.5		13.1		23.4	21.3		17.8	23.3	16.6
Progression Factor		1.00	1.00		0.76		0.93	0.92		1.02	1.15	1.56
Incremental Delay, d2		2.4	1.1		0.3		34.3	1.9		2.2	3.6	0.1
Delay (s)		18.3	14.6		10.3		56.2	21.4		20.3	30.4	26.0
Level of Service		B	B		B		E	C		C	C	C
Approach Delay (s)		17.2			10.3			25.2			29.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	566	77	0	465	40	107	466	80	0	389	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	0.88
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1676	1257
Flt Permitted		1.00	1.00		1.00	1.00	0.25	1.00			1.00	1.00
Satd. Flow (perm)		1676	1013		1676	1346	417	3025			1676	1257
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	615	84	0	505	43	116	507	87	0	423	47
RTOR Reduction (vph)	0	0	42	0	0	21	0	16	0	0	0	35
Lane Group Flow (vph)	0	615	42	0	505	22	116	578	0	0	423	12
Confl. Peds. (#/hr)			122			33			112	112		64
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		45.5	45.5		45.5	45.5	34.1	34.1			23.6	23.6
Effective Green, g (s)		45.5	45.5		45.5	45.5	34.1	34.1			23.6	23.6
Actuated g/C Ratio		0.51	0.51		0.51	0.51	0.38	0.38			0.26	0.26
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		847	512		847	680	224	1146			439	329
v/s Ratio Prot		c0.37			0.30		0.03	c0.19			c0.25	
v/s Ratio Perm			0.04			0.02	0.17					0.01
v/c Ratio		0.73	0.08		0.60	0.03	0.52	0.50			0.96	0.04
Uniform Delay, d1		17.4	11.5		15.7	11.2	32.3	21.5			32.8	24.7
Progression Factor		0.64	0.08		0.31	4.35	0.78	0.92			0.76	2.72
Incremental Delay, d2		5.1	0.3		2.1	0.1	1.9	0.3			30.2	0.0
Delay (s)		16.2	1.3		7.0	48.7	27.0	20.0			55.1	67.3
Level of Service		B	A		A	D	C	C			E	E
Approach Delay (s)		14.4			10.3			21.2			56.3	
Approach LOS		B			B			C			E	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	463	169	54	509	0	0	0	0	16	493	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1499	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.31	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	483	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	503	184	59	553	0	0	0	0	17	536	27
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	503	165	59	553	0	0	0	0	17	536	12
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	215	748					614	1433	275
v/s Ratio Prot		0.30			c0.33						c0.17	
v/s Ratio Perm			0.15	0.12						0.01		0.02
v/c Ratio		0.67	0.33	0.27	0.74					0.03	0.37	0.04
Uniform Delay, d1		19.7	16.2	15.7	20.6					13.8	16.4	13.9
Progression Factor		1.29	1.56	1.00	1.00					0.22	0.20	0.00
Incremental Delay, d2		3.5	1.3	3.1	6.5					0.1	0.7	0.3
Delay (s)		28.9	26.5	18.8	27.0					3.1	3.9	0.3
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		28.3			26.2			0.0			3.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	154	114	23	278	852	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.89	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1420	3185	3185	748
Flt Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	417	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	124	25	302	926	82
RTOR Reduction (vph)	0	46	0	0	0	22
Lane Group Flow (vph)	167	78	25	302	926	60
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.5	19.5	60.8	60.8	60.8	60.8
Effective Green, g (s)	19.5	19.5	60.8	60.8	60.8	60.8
Actuated g/C Ratio	0.22	0.22	0.68	0.68	0.68	0.68
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	408	281	2151	2151	505
v/s Ratio Prot				0.09	c0.29	
v/s Ratio Perm	c0.12	0.04	0.06			0.08
v/c Ratio	0.54	0.19	0.09	0.14	0.43	0.12
Uniform Delay, d1	31.3	28.8	5.0	5.2	6.7	5.1
Progression Factor	1.00	1.00	1.00	1.00	2.55	5.07
Incremental Delay, d2	2.0	0.2	0.6	0.1	0.5	0.4
Delay (s)	33.3	29.0	5.7	5.4	17.6	26.5
Level of Service	C	C	A	A	B	C
Approach Delay (s)	31.5			5.4	18.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1368	165	56	401	0	0	1054	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3092		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3092		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1487	179	61	436	0	0	1146	215
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	103	1656	0	61	436	0	0	1146	202
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1752		74	1167			1167	426
v/s Ratio Prot					c0.54			0.14			c0.36	
v/s Ratio Perm				0.07			0.30					0.17
v/c Ratio				0.13	0.94		0.82	0.37			0.98	0.47
Uniform Delay, d1				9.1	18.2		25.9	20.9			28.2	21.9
Progression Factor				1.27	0.96		1.43	1.47			1.31	1.49
Incremental Delay, d2				0.2	9.5		56.2	0.8			20.3	3.2
Delay (s)				11.8	26.9		93.3	31.6			57.3	35.8
Level of Service				B	C		F	C			E	D
Approach Delay (s)		0.0			26.0			39.2			53.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	193	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.95			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		2986			1676	976
Flt Permitted				0.95	1.00	1.00		0.78			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2359			1676	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	1276	85	145	454	0	0	210	92
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	54
Lane Group Flow (vph)	0	0	0	41	1276	47	0	599	0	0	210	38
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		982			698	406
v/s Ratio Prot					c0.40						0.13	
v/s Ratio Perm				0.04		0.04		c0.25				0.04
v/c Ratio				0.09	0.84	0.09		0.61			0.30	0.09
Uniform Delay, d1				12.7	20.3	12.7		20.5			17.5	15.9
Progression Factor				0.95	1.18	1.61		0.28			1.20	1.92
Incremental Delay, d2				0.3	4.4	0.2		0.9			0.6	0.2
Delay (s)				12.4	28.4	20.6		6.7			21.6	30.9
Level of Service				B	C	C		A			C	C
Approach Delay (s)		0.0			27.5			6.7			24.4	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	267	842	0	0	0	0	0	765	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	290	915	0	0	0	0	0	832	301
RTOR Reduction (vph)	0	0	0	91	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	199	915	0	0	0	0	0	832	285
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.29						0.18	
v/s Ratio Perm				0.15								c0.25
v/c Ratio				0.42	0.80						0.34	0.47
Uniform Delay, d1				21.8	26.0						11.8	12.9
Progression Factor				1.00	1.00						1.47	1.55
Incremental Delay, d2				2.7	6.0						0.4	2.5
Delay (s)				24.6	32.1						17.7	22.4
Level of Service				C	C						B	C
Approach Delay (s)		0.0			30.3			0.0			18.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	1111	0	0	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1208	0	0	123	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	84	1208	0	0	123	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	55.1	74.6			8.9	
Effective Green, g (s)	55.1	74.6			8.9	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1891	5628			305	
v/s Ratio Prot	0.03	c0.18				
v/s Ratio Perm					c0.04	
v/c Ratio	0.04	0.21			0.40	
Uniform Delay, d1	7.0	1.6			38.1	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.0	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.0	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	939	134	0	0	0	0	1240	303	85	199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.98		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4374		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4374		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1021	146	0	0	0	0	1348	329	92	216	0
RTOR Reduction (vph)	0	0	97	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	100	1021	49	0	0	0	0	1648	0	92	216	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Effective Green, g (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Actuated g/C Ratio	0.34	0.34	0.34					0.45		0.06	0.55	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	377	1941	438					1953		192	927	
v/s Ratio Prot		c0.18						c0.38		c0.03	0.13	
v/s Ratio Perm	0.09		0.04									
v/c Ratio	0.27	0.53	0.11					0.84		0.48	0.23	
Uniform Delay, d1	21.7	24.1	20.6					22.1		40.8	10.3	
Progression Factor	1.02	1.03	1.36					0.48		1.00	1.00	
Incremental Delay, d2	1.7	1.0	0.5					4.0		1.9	0.6	
Delay (s)	23.9	25.7	28.5					14.5		42.7	10.9	
Level of Service	C	C	C					B		D	B	
Approach Delay (s)		25.9			0.0			14.5			20.4	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1292	111	0	0	0	0	656	89	87	869	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.93	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5641						3020		1486	3185	
Flt Permitted		1.00						1.00		0.27	1.00	
Satd. Flow (perm)		5641						3020		415	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1404	121	0	0	0	0	713	97	95	945	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1539	0	0	0	0	0	807	0	95	945	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2381						1476		202	1557	
v/s Ratio Prot								0.27			c0.30	
v/s Ratio Perm		0.27								0.23		
v/c Ratio		0.65						0.55		0.47	0.61	
Uniform Delay, d1		20.7						16.0		15.3	16.7	
Progression Factor		0.77						0.45		0.18	0.13	
Incremental Delay, d2		1.2						1.3		3.1	0.7	
Delay (s)		17.2						8.5		5.9	2.8	
Level of Service		B						A		A	A	
Approach Delay (s)		17.2			0.0			8.5			3.1	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	284	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5374						2736			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5374						2736			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1339	77	0	0	0	0	451	171	0	309	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1556	0	0	0	0	0	619	0	0	309	0
Confl. Peds. (#/hr)	288		266						373	373		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2567						1115			683	
v/s Ratio Prot								c0.23			0.18	
v/s Ratio Perm		0.29										
v/c Ratio		0.61						0.56			0.45	
Uniform Delay, d1		17.3						20.4			19.4	
Progression Factor		0.40						0.97			1.00	
Incremental Delay, d2		0.8						1.9			2.1	
Delay (s)		7.8						21.8			21.6	
Level of Service		A						C			C	
Approach Delay (s)		7.8			0.0			21.8			21.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1304	189	0	0	0	0	0	0	286	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.95	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5449									4311	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5449									4311	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1417	205	0	0	0	0	0	0	311	1002	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1594	0	0	0	0	0	0	0	0	1301	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1892	
v/s Ratio Prot		c0.29										
v/s Ratio Perm											0.30	
v/c Ratio		0.64									0.69	
Uniform Delay, d1		18.7									20.3	
Progression Factor		1.37									0.53	
Incremental Delay, d2		1.1									2.0	
Delay (s)		26.6									12.8	
Level of Service		C									B	
Approach Delay (s)		26.6			0.0			0.0			12.8	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	376	1274	247	0	0	0	0	777	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5489						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5489						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	409	1385	268	0	0	0	0	845	246
RTOR Reduction (vph)	0	0	0	48	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	291	1679	0	0	0	0	0	845	233
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2439						2034	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.39	0.31							c0.25
v/c Ratio				0.87	0.69						0.42	0.56
Uniform Delay, d1				22.7	20.0						17.0	18.5
Progression Factor				1.33	1.26						1.00	1.00
Incremental Delay, d2				23.7	1.5						0.6	5.4
Delay (s)				53.9	26.8						17.7	23.9
Level of Service				D	C						B	C
Approach Delay (s)		0.0			31.2			0.0			19.1	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	934	77	557	1197	0	0	0	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5522		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5522		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1015	84	605	1301	0	0	0	383
RTOR Reduction (vph)	0	0	0	0	11	0	438	0	0	0	0	360
Lane Group Flow (vph)	0	0	0	0	1088	0	167	1301	0	0	0	23
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2018		851	2013				153
v/s Ratio Prot					c0.20		0.05	c0.28				
v/s Ratio Perm												c0.01
v/c Ratio					0.54		0.20	0.65				0.15
Uniform Delay, d1					22.6		25.0	19.7				40.0
Progression Factor					1.00		4.44	1.58				1.00
Incremental Delay, d2					1.0		0.4	1.2				0.5
Delay (s)					23.6		111.3	32.4				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			23.6			57.5			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	44.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	779	136	71	627	0	0	792	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5351		1489	3185			3185	936
Flt Permitted				0.95	1.00		0.24	1.00			1.00	1.00
Satd. Flow (perm)				862	5351		370	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	847	148	77	682	0	0	861	163
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	90	960	0	77	682	0	0	861	150
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				39.0	39.0		41.2	41.2			41.2	41.2
Effective Green, g (s)				39.0	39.0		41.2	41.2			41.2	41.2
Actuated g/C Ratio				0.43	0.43		0.46	0.46			0.46	0.46
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				373	2318		169	1458			1458	428
v/s Ratio Prot					c0.18			0.21			c0.27	
v/s Ratio Perm				0.10			0.21					0.16
v/c Ratio				0.24	0.41		0.46	0.47			0.59	0.35
Uniform Delay, d1				16.1	17.6		16.7	16.8			18.1	15.8
Progression Factor				0.28	0.24		1.51	1.57			1.76	1.91
Incremental Delay, d2				1.4	0.5		7.2	0.9			1.4	1.8
Delay (s)				5.9	4.8		32.5	27.3			33.4	31.9
Level of Service				A	A		C	C			C	C
Approach Delay (s)		0.0			4.9			27.8			33.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	862	61	43	412	0	0	296	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5404			3103			1676	831
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5404			2784			1676	831
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	937	66	47	448	0	0	322	64
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1034	0	0	495	0	0	322	52
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1407			847	420
v/s Ratio Prot											c0.19	
v/s Ratio Perm					0.19			0.18				0.06
v/c Ratio					0.49			0.35			0.38	0.12
Uniform Delay, d1					20.8			13.4			13.6	11.7
Progression Factor					0.50			1.48			1.79	2.10
Incremental Delay, d2					0.8			0.6			1.2	0.5
Delay (s)					11.1			20.4			25.6	25.2
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.1			20.4			25.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	136	647	0	0	0	0	0	855	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	148	703	0	0	0	0	0	929	202
RTOR Reduction (vph)	0	0	0	0	43	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	0	0	808	0	0	0	0	0	929	152
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.20	
v/s Ratio Perm					0.14							0.11
v/c Ratio					0.36						0.40	0.21
Uniform Delay, d1					19.4						13.8	12.3
Progression Factor					1.00						0.46	0.27
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.8						6.7	3.8
Level of Service					B						A	A
Approach Delay (s)		0.0			19.8			0.0			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1485	154	0	0	0	0	0	0	183	1049	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.95	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5462	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1614	167	0	0	0	0	0	0	199	1140	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1614	148	0	0	0	0	0	0	0	1327	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2451	
v/s Ratio Prot		c0.28										
v/s Ratio Perm			0.16								0.24	
v/c Ratio		0.63	0.36								0.54	
Uniform Delay, d1		19.1	16.4								18.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	2.4								0.7	
Delay (s)		20.2	18.8								21.5	
Level of Service		C	B								C	
Approach Delay (s)		20.1			0.0			0.0			21.5	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	553	1085	0	0	0	0	0	1354	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5049						6395				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5049						6395				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	601	1179	0	0	0	0	0	1472	208	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	331	1425	0	0	0	0	0	1663	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2255						2863				
v/s Ratio Prot								c0.26				
v/s Ratio Perm	c0.39	0.28										
v/c Ratio	0.88	0.63						0.58				
Uniform Delay, d1	22.7	19.2						18.5				
Progression Factor	0.47	0.39						0.80				
Incremental Delay, d2	20.3	1.1						0.7				
Delay (s)	31.1	8.6						15.4				
Level of Service	C	A						B				
Approach Delay (s)		12.9			0.0			15.4			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	136	0	0	0	0	682	101	87	743	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5664						3124		1593	4577	
Flt Permitted		1.00						1.00		0.23	1.00	
Satd. Flow (perm)		5664						3124		386	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1096	148	0	0	0	0	741	110	95	808	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	1217	0	0	0	0	0	838	0	95	808	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						42.0		42.0	42.0	
Effective Green, g (s)		42.0						42.0		42.0	42.0	
Actuated g/C Ratio		0.47						0.47		0.47	0.47	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2643						1457		180	2135	
v/s Ratio Prot		c0.21						c0.27			0.18	
v/s Ratio Perm										0.25		
v/c Ratio		0.46						0.58		0.53	0.38	
Uniform Delay, d1		16.3						17.5		17.0	15.5	
Progression Factor		0.33						0.64		0.36	0.36	
Incremental Delay, d2		0.5						1.5		9.0	0.4	
Delay (s)		5.9						12.6		15.1	6.0	
Level of Service		A						B		B	A	
Approach Delay (s)		5.9			0.0			12.6			7.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	941	116	0	0	0	0	466	95	0	335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5150						2906			1676	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5150						2906			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	1023	126	0	0	0	0	507	103	0	364	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1280	0	0	0	0	0	605	0	0	364	0
Confl. Peds. (#/hr)	288		266						373			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1281			739	
v/s Ratio Prot								0.21			c0.22	
v/s Ratio Perm		0.25										
v/c Ratio		0.56						0.47			0.49	
Uniform Delay, d1		18.5						17.8			18.0	
Progression Factor		0.25						1.57			1.08	
Incremental Delay, d2		0.9						1.1			2.2	
Delay (s)		5.5						28.9			21.7	
Level of Service		A						C			C	
Approach Delay (s)		5.5			0.0			28.9			21.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	976	121	0	0	0	0	0	0	206	858	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4533	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1061	132	0	0	0	0	0	0	224	933	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	0	25	0
Lane Group Flow (vph)	0	1169	0	0	0	0	0	0	0	0	1132	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2039	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.25	
v/c Ratio		0.46									0.56	
Uniform Delay, d1		17.3									18.1	
Progression Factor		0.20									0.88	
Incremental Delay, d2		0.5									1.0	
Delay (s)		4.0									17.0	
Level of Service		A									B	
Approach Delay (s)		4.0			0.0			0.0			17.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	246	0	0	420	133	259	1322	67	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.09			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	135			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	135			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	267	0	0	457	145	282	1437	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	46	0	0	0
Lane Group Flow (vph)	102	267	0	0	457	13	282	1437	27	0	0	0
Confl. Peds. (#/hr)									1647			
Confl. Bikes (#/hr)									34			
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Effective Green, g (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.45			0.33	0.09	0.36	0.36	0.36			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	240	858			1242	128	580	1668	49			
v/s Ratio Prot	c0.03	0.03			c0.03	0.01		c0.31				
v/s Ratio Perm		0.13			0.11		0.18		0.20			
v/c Ratio	0.42	0.31			0.37	0.10	0.49	0.86	0.54			
Uniform Delay, d1	39.6	15.8			23.1	37.6	22.1	26.5	22.7			
Progression Factor	1.00	1.00			0.40	0.97	1.28	1.16	1.00			
Incremental Delay, d2	1.2	0.2			0.2	0.3	0.7	1.6	10.4			
Delay (s)	40.8	16.0			9.3	37.0	29.1	32.4	33.1			
Level of Service	D	B			A	D	C	C	C			
Approach Delay (s)		22.9			16.0			31.9			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	244	177	71	396	0	0	0	0	41	1248	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3058						5512	
Flt Permitted		1.00	1.00		0.85						1.00	
Satd. Flow (perm)		1676	932		2633						5512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	265	192	77	430	0	0	0	0	45	1357	76
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	265	180	0	507	0	0	0	0	0	1469	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1231						2339	
v/s Ratio Prot		0.16										
v/s Ratio Perm			c0.19		0.19						0.27	
v/c Ratio		0.34	0.41		0.41						0.63	
Uniform Delay, d1		15.1	15.8		15.8						20.3	
Progression Factor		0.64	0.58		0.27						1.00	
Incremental Delay, d2		1.1	2.8		1.0						1.3	
Delay (s)		10.8	12.0		5.2						21.6	
Level of Service		B	B		A						C	
Approach Delay (s)		11.3			5.2			0.0			21.6	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	277	57	0	424	75	66	301	64	37	314	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1676	762		3185	650		2715			3021	
Flt Permitted		1.00	1.00		1.00	1.00		0.83			0.88	
Satd. Flow (perm)		1676	762		3185	650		2280			2664	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	301	62	0	461	82	72	327	70	40	341	14
RTOR Reduction (vph)	0	0	9	0	0	11	0	5	0	0	1	0
Lane Group Flow (vph)	0	301	54	0	461	71	0	464	0	0	394	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		838	381		1592	325		988			1154	
v/s Ratio Prot		c0.18			0.14							
v/s Ratio Perm			0.07			0.11		c0.20			0.15	
v/c Ratio		0.36	0.14		0.29	0.22		0.47			0.34	
Uniform Delay, d1		13.7	12.1		13.2	12.6		18.1			17.0	
Progression Factor		0.51	0.44		1.18	1.30		1.03			1.00	
Incremental Delay, d2		1.2	0.7		0.4	1.3		1.5			0.8	
Delay (s)		8.2	6.0		16.0	17.7		20.2			17.8	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		7.8			16.2			20.2			17.8	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	298	68	38	432	0	0	0	0	191	1147	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.79	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1253	1676					933	3185	959
Flt Permitted		1.00	1.00	0.48	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	633	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	324	74	41	470	0	0	0	0	208	1247	49
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	324	61	41	470	0	0	0	0	208	1247	36
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	281	744					415	1419	427
v/s Ratio Prot		0.19			c0.28						c0.39	
v/s Ratio Perm			0.07	0.06						0.22		0.04
v/c Ratio		0.44	0.17	0.15	0.63					0.50	0.88	0.08
Uniform Delay, d1		17.2	15.0	14.9	19.3					17.8	22.7	14.4
Progression Factor		1.34	1.43	0.44	0.36					2.08	1.96	2.81
Incremental Delay, d2		1.7	0.9	0.9	3.3					3.9	7.3	0.3
Delay (s)		24.8	22.4	7.4	10.3					40.9	52.0	40.7
Level of Service		C	C	A	B					D	D	D
Approach Delay (s)		24.4			10.0			0.0			50.1	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	514	0	0	450	150	107	1156	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5232				
Flt Permitted	0.38	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	630	1676			1676	803		5232				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	559	0	0	489	163	116	1257	101	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	46	559	0	0	489	153	0	1462	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	338	899			899	430		1871				
v/s Ratio Prot		c0.33			0.29							
v/s Ratio Perm	0.07					0.19		0.28				
v/c Ratio	0.14	0.62			0.54	0.36		0.78				
Uniform Delay, d1	10.4	14.5			13.6	11.9		25.8				
Progression Factor	0.72	0.69			1.44	1.48		0.81				
Incremental Delay, d2	0.8	3.0			1.8	1.7		0.3				
Delay (s)	8.3	13.0			21.4	19.3		21.2				
Level of Service	A	B			C	B		C				
Approach Delay (s)		12.6			20.8			21.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	410	59	20	424	105	0	654	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.89	
Flpb, ped/bikes	0.86	1.00	1.00	0.85	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1368	1676	801	1357	1676	799		3001			2759	
Flt Permitted	0.35	1.00	1.00	0.36	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	497	1676	801	512	1676	799		3001			2759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	446	64	22	461	114	0	711	53	0	896	196
RTOR Reduction (vph)	0	0	4	0	0	3	0	5	0	0	4	0
Lane Group Flow (vph)	40	446	60	22	461	111	0	759	0	0	1088	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	237	800	382	244	800	381		1367			1256	
v/s Ratio Prot		0.27			c0.27			0.25			c0.39	
v/s Ratio Perm	0.08		0.08	0.04		0.14						
v/c Ratio	0.17	0.56	0.16	0.09	0.58	0.29		0.56			0.87	
Uniform Delay, d1	13.3	16.7	13.3	12.8	16.9	14.3		17.9			22.0	
Progression Factor	1.49	1.57	1.53	1.72	1.57	1.69		1.30			1.12	
Incremental Delay, d2	1.2	2.1	0.7	0.6	2.4	1.6		1.5			7.8	
Delay (s)	21.1	28.3	20.9	22.7	29.0	25.6		24.7			32.5	
Level of Service	C	C	C	C	C	C		C			C	
Approach Delay (s)		26.9			28.1			24.7			32.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	414	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	0.33
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1368	1676	439	1593	1676	881		2962			1676	465
Flt Permitted	0.36	1.00	1.00	0.38	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	516	1676	439	636	1676	881		2810			1676	465
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	425	39	12	447	61	10	660	60	0	450	132
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	13
Lane Group Flow (vph)	26	425	21	12	447	43	0	726	0	0	450	119
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					4
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	0.44
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Grp Cap (vph)	229	746	195	283	746	392		1230			733	203
v/s Ratio Prot		0.25			c0.27						c0.27	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.26				0.26
v/c Ratio	0.11	0.57	0.11	0.04	0.60	0.11		0.59			0.61	0.59
Uniform Delay, d1	14.6	18.5	14.5	14.1	18.9	14.5		19.2			19.5	19.1
Progression Factor	0.47	0.74	0.54	0.87	1.08	1.26		0.73			0.50	0.44
Incremental Delay, d2	0.8	2.6	0.9	0.2	3.1	0.5		1.6			3.5	10.9
Delay (s)	7.7	16.4	8.7	12.5	23.6	18.8		15.6			13.2	19.3
Level of Service	A	B	A	B	C	B		B			B	B
Approach Delay (s)		15.3			22.7			15.6			14.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	69	56	365	0	0	0	0	62	759	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1362	1676						4383	618
Flt Permitted		1.00	1.00	0.37	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	530	1676						4383	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	75	61	397	0	0	0	0	67	825	135
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	432	55	61	397	0	0	0	0	0	892	60
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	225	713						1957	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.06	0.12							0.20	0.10
v/c Ratio		0.61	0.15	0.27	0.56						0.46	0.22
Uniform Delay, d1		20.0	15.9	16.8	19.5						17.3	15.3
Progression Factor		1.64	2.11	1.00	1.00						1.44	4.72
Incremental Delay, d2		3.2	0.8	2.9	3.1						0.6	1.5
Delay (s)		36.1	34.3	19.7	22.6						25.6	73.5
Level of Service		D	C	B	C						C	E
Approach Delay (s)		35.8			22.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1790	330	235	2044	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1946	359	255	2222	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	114	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1946	237	141	2222	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	2112				
v/s Ratio Prot					c0.34			c0.33				
v/s Ratio Perm						0.21	0.09					
v/c Ratio					0.77	0.48	0.29	1.05				
Uniform Delay, d1					21.2	17.8	23.4	31.0				
Progression Factor					1.00	1.00	0.88	0.98				
Incremental Delay, d2					2.3	3.3	1.3	34.2				
Delay (s)					23.5	21.2	21.9	64.5				
Level of Service					C	C	C	E				
Approach Delay (s)		0.0			23.1			60.1			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	1043	102	64	656	0	0	799	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.97		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.93	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4399		1487	3185			3185	975
Flt Permitted				0.95	1.00		0.25	1.00			1.00	1.00
Satd. Flow (perm)				1160	4399		397	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	1134	111	70	713	0	0	868	174
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	89	1232	0	70	713	0	0	868	172
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1710		216	1734			1734	530
v/s Ratio Prot					c0.28			0.22			c0.27	
v/s Ratio Perm				0.08			0.18					0.18
v/c Ratio				0.20	0.72		0.32	0.41			0.50	0.32
Uniform Delay, d1				18.2	23.3		11.3	12.0			12.8	11.3
Progression Factor				2.03	1.95		0.82	0.74			1.50	1.59
Incremental Delay, d2				0.9	2.4		3.7	0.7			0.7	1.0
Delay (s)				37.8	47.9		13.1	9.6			19.9	19.0
Level of Service				D	D		B	A			B	B
Approach Delay (s)		0.0			47.2			9.9			19.8	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	69	994	64	81	619	0	0	385	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			0.99			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5582			3142			1676	971
Flt Permitted					1.00			0.72			1.00	1.00
Satd. Flow (perm)					5582			2281			1676	971
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	75	1080	70	88	673	0	0	418	74
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	0	0	0	1215	0	0	761	0	0	418	23
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2356			1140			515	298
v/s Ratio Prot								c0.06			c0.25	
v/s Ratio Perm					0.22			0.24				0.02
v/c Ratio					0.52			0.67			0.81	0.08
Uniform Delay, d1					19.2			18.8			28.7	22.1
Progression Factor					1.89			1.43			1.65	4.67
Incremental Delay, d2					0.7			2.7			11.1	0.4
Delay (s)					37.0			29.5			58.6	103.5
Level of Service					D			C			E	F
Approach Delay (s)		0.0			37.0			29.5			65.4	
Approach LOS		A			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	114	926	0	0	0	0	0	679	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5539						4577	1283
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5539						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	124	1007	0	0	0	0	0	738	205
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	1107	0	0	0	0	0	738	186
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2234						2263	634
v/s Ratio Prot											c0.16	
v/s Ratio Perm					0.20							0.14
v/c Ratio					0.50						0.33	0.29
Uniform Delay, d1					20.0						13.7	13.5
Progression Factor					1.00						1.67	1.86
Incremental Delay, d2					0.8						0.4	1.1
Delay (s)					20.8						23.2	26.1
Level of Service					C						C	C
Approach Delay (s)		0.0			20.8			0.0			23.9	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	1125	0	0	0	0	0	1324	163	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5411						4577	957			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5411						4577	957			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	1223	0	0	0	0	0	1439	177	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	197	1232	0	0	0	0	0	1439	161	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	39.6	39.6						39.8	39.8			
Effective Green, g (s)	39.6	39.6						39.8	39.8			
Actuated g/C Ratio	0.44	0.44						0.44	0.44			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	481	2380						2024	423			
v/s Ratio Prot								c0.31				
v/s Ratio Perm	0.18	0.23							0.17			
v/c Ratio	0.41	0.52						0.71	0.38			
Uniform Delay, d1	17.2	18.3						20.4	16.8			
Progression Factor	1.00	1.00						1.10	1.28			
Incremental Delay, d2	2.6	0.8						1.6	1.9			
Delay (s)	19.8	19.1						24.1	23.4			
Level of Service	B	B						C	C			
Approach Delay (s)		19.2			0.0			24.0			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	969	167	0	0	0	0	0	0	159	1274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5640								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5640								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1053	182	0	0	0	0	0	0	173	1385	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	14	0	0
Lane Group Flow (vph)	0	1220	0	0	0	0	0	0	0	159	1385	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2193								785	2845	
v/s Ratio Prot		c0.22									c0.24	
v/s Ratio Perm										0.10		
v/c Ratio		0.56								0.20	0.49	
Uniform Delay, d1		21.4								12.8	15.2	
Progression Factor		1.81								0.62	0.86	
Incremental Delay, d2		0.9								0.5	0.5	
Delay (s)		39.8								8.4	13.5	
Level of Service		D								A	B	
Approach Delay (s)		39.8			0.0			0.0			13.0	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	935	40	0	0	0	0	518	87	91	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.95						1.00			0.98	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5361						2961			3090	
Flt Permitted		0.99						1.00			0.74	
Satd. Flow (perm)		5361						2961			2294	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	1016	43	0	0	0	0	563	95	99	407	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1237	0	0	0	0	0	656	0	0	506	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1906						1710			1325	
v/s Ratio Prot								c0.22				
v/s Ratio Perm		0.23									0.22	
v/c Ratio		0.65						0.38			0.38	
Uniform Delay, d1		24.3						10.3			10.3	
Progression Factor		0.95						1.00			0.42	
Incremental Delay, d2		1.5						0.7			0.8	
Delay (s)		24.7						11.0			5.2	
Level of Service		C						B			A	
Approach Delay (s)		24.7			0.0			11.0			5.2	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1160	228	0	0	0	0	0	0	214	1688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1261	248	0	0	0	0	0	0	233	1835	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1261	235	0	0	0	0	0	0	218	1835	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.28									c0.40	
v/s Ratio Perm			0.20							0.15		
v/c Ratio		0.70	0.50							0.30	0.82	
Uniform Delay, d1		22.7	20.5							13.7	19.5	
Progression Factor		0.69	0.63							0.84	0.67	
Incremental Delay, d2		2.0	3.4							0.9	2.9	
Delay (s)		17.7	16.2							12.3	15.9	
Level of Service		B	B							B	B	
Approach Delay (s)		17.5			0.0			0.0			15.5	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	442	2072	0	0	0	0	0	1921	295	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4408						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4408						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	2252	0	0	0	0	0	2088	321	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	2719	0	0	0	0	0	2088	309	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1768						2252	635			
v/s Ratio Prot								c0.46				
v/s Ratio Perm		0.62							0.24			
v/c Ratio		1.54						0.93	0.49			
Uniform Delay, d1		26.9						21.3	15.3			
Progression Factor		1.19						0.68	0.59			
Incremental Delay, d2		244.9						7.8	2.5			
Delay (s)		277.1						22.3	11.5			
Level of Service		F						C	B			
Approach Delay (s)		277.1			0.0			20.9			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	157.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	1108	46	0	0	0	0	605	65	101	845	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.92	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4447						3047		1458	3185	
Flt Permitted		1.00						1.00		0.32	1.00	
Satd. Flow (perm)		4447						3047		494	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1204	50	0	0	0	0	658	71	110	918	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1286	0	0	0	0	0	729	0	110	918	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1581						1760		285	1840	
v/s Ratio Prot								0.24			c0.29	
v/s Ratio Perm		0.29								0.22		
v/c Ratio		0.81						0.41		0.39	0.50	
Uniform Delay, d1		26.3						10.5		10.3	11.3	
Progression Factor		1.59						0.27		0.36	0.35	
Incremental Delay, d2		0.4						0.6		3.6	0.9	
Delay (s)		42.2						3.5		7.3	4.8	
Level of Service		D						A		A	A	
Approach Delay (s)		42.2			0.0			3.5			5.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	486	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.95						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4311						3002			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4311						3002			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	1149	107	0	0	0	0	658	87	0	528	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	184	1244	0	0	0	0	0	742	0	0	528	0
Confl. Peds. (#/hr)	296		272						287	287		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1877						1350			754	
v/s Ratio Prot		c0.29						0.25			c0.31	
v/s Ratio Perm	0.17											
v/c Ratio	0.39	0.66						0.55			0.70	
Uniform Delay, d1	17.3	20.2						18.1			19.9	
Progression Factor	0.56	0.66						0.71			0.42	
Incremental Delay, d2	1.6	1.2						1.4			3.7	
Delay (s)	11.3	14.6						14.2			12.1	
Level of Service	B	B						B			B	
Approach Delay (s)		14.2			0.0			14.2			12.1	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	754	57	0	0	0	0	1060	87	70	738	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4430						3185	1110	1553	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1221	4430						3185	1110	279	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	820	62	0	0	0	0	1152	95	76	802	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	316	873	0	0	0	0	0	1152	83	76	802	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1466						1772	617	155	1772	
v/s Ratio Prot		0.20						c0.36			0.25	
v/s Ratio Perm	c0.26								0.07	0.27		
v/c Ratio	0.78	0.60						0.65	0.13	0.49	0.45	
Uniform Delay, d1	27.2	25.1						13.9	9.6	12.2	11.8	
Progression Factor	1.74	1.81						1.52	1.89	1.00	1.00	
Incremental Delay, d2	10.8	1.3						1.5	0.4	10.7	0.8	
Delay (s)	58.1	46.6						22.6	18.5	22.8	12.7	
Level of Service	E	D						C	B	C	B	
Approach Delay (s)		49.7			0.0			22.3			13.5	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	829	200	95	1377	209	240	1255	171	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.85	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.94	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1217	1492	4577	950	1164	4577	1246			
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1217	478	4577	950	1164	4577	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	901	217	103	1497	227	261	1364	186	0	0	0
RTOR Reduction (vph)	0	0	85	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	182	901	132	103	1497	127	261	1364	142	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	741	120	1149	238	561	2207	600			
v/s Ratio Prot	c0.07	0.20	0.04		c0.33		0.10	c0.30				
v/s Ratio Perm	0.25		0.07	0.22		0.13	0.12		0.11			
v/c Ratio	0.84	0.51	0.18	0.86	1.30	0.54	0.47	0.62	0.24			
Uniform Delay, d1	22.4	21.2	7.7	32.2	33.7	29.2	15.6	17.2	13.6			
Progression Factor	1.00	1.00	1.00	1.05	0.99	1.17	0.54	0.71	0.33			
Incremental Delay, d2	24.6	1.1	0.1	39.8	140.9	6.0	0.4	0.9	0.6			
Delay (s)	47.1	22.3	7.8	73.7	174.4	40.2	8.9	13.1	5.1			
Level of Service	D	C	A	E	F	D	A	B	A			
Approach Delay (s)		23.4			152.1			11.7			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	66.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	823	58	49	1133	0	0	0	0	61	1087	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5752	1425
Flt Permitted		1.00	1.00	0.23	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	389	3185						5752	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	895	63	53	1232	0	0	0	0	66	1182	400
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	895	48	53	1232	0	0	0	0	0	1248	380
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	185	1521						2345	581
v/s Ratio Prot		0.28			c0.39							
v/s Ratio Perm			0.03	0.14							0.22	c0.27
v/c Ratio		0.59	0.07	0.29	0.81						0.53	0.65
Uniform Delay, d1		17.1	12.7	14.2	20.0						20.2	21.5
Progression Factor		0.39	0.16	1.00	1.00						1.86	1.88
Incremental Delay, d2		1.5	0.2	3.9	4.8						0.8	5.1
Delay (s)		8.2	2.3	18.1	24.8						38.2	45.7
Level of Service		A	A	B	C						D	D
Approach Delay (s)		7.8			24.5			0.0			40.0	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	828	39	28	908	64	88	420	47	27	272	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		0.95	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3120		1517	3078			3031			2885	
Flt Permitted	0.18	1.00		0.22	1.00			0.77			0.89	
Satd. Flow (perm)	296	3120		348	3078			2362			2569	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	900	42	30	987	70	96	457	51	29	296	112
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	128	939	0	30	1052	0	0	597	0	0	428	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	148	1566		174	1545			949			1032	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm	c0.43			0.09				c0.25			0.17	
v/c Ratio	0.86	0.60		0.17	0.68			0.63			0.41	
Uniform Delay, d1	21.9	17.7		13.6	18.8			23.9			21.5	
Progression Factor	1.00	1.00		0.49	0.59			1.00			1.00	
Incremental Delay, d2	44.8	1.7		1.5	1.8			3.2			1.2	
Delay (s)	66.7	19.4		8.2	12.9			27.1			22.7	
Level of Service	E	B		A	B			C			C	
Approach Delay (s)		25.1			12.8			27.1			22.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	790	98	93	1079	0	0	0	0	97	1339	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3132		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3132		351	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	859	107	101	1173	0	0	0	0	105	1455	264
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	963	0	101	1173	0	0	0	0	105	1455	236
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1566		175	1592					637	1830	570
v/s Ratio Prot		0.31			c0.37						c0.32	
v/s Ratio Perm				0.29						0.07		0.17
v/c Ratio		0.61		0.58	0.74					0.16	0.80	0.41
Uniform Delay, d1		18.0		17.6	19.8					19.3	26.4	21.6
Progression Factor		0.84		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.5		13.1	3.1					0.6	3.7	2.2
Delay (s)		16.7		30.7	22.9					19.8	30.1	23.8
Level of Service		B		C	C					B	C	C
Approach Delay (s)		16.7			23.5			0.0			28.6	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	748	0	0	1041	67	134	886	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3136			4528	1327			
Flt Permitted	0.14	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	230	3185			3136			4528	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	813	0	0	1132	73	146	963	45	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	28	0	0	0
Lane Group Flow (vph)	157	813	0	0	1200	0	0	1109	17	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	117	1631			1606			1710	501			
v/s Ratio Prot		0.26			0.38							
v/s Ratio Perm	c0.68							0.24	0.01			
v/c Ratio	1.34	0.50			0.75			0.65	0.03			
Uniform Delay, d1	21.9	14.4			17.3			23.1	17.6			
Progression Factor	1.00	1.00			0.65			0.56	0.33			
Incremental Delay, d2	200.2	1.1			3.2			1.7	0.1			
Delay (s)	222.2	15.5			14.4			14.7	5.9			
Level of Service	F	B			B			B	A			
Approach Delay (s)		48.9			14.4			14.3			0.0	
Approach LOS		D			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	636	51	37	529	63	41	534	51	37	764	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.95	1.00		0.98	1.00		0.96	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1543	3106		1508	3102		1557	3106		1532	3185	1230
Flt Permitted	0.37	1.00		0.32	1.00		0.17	1.00		0.27	1.00	1.00
Satd. Flow (perm)	597	3106		507	3102		271	3106		439	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	691	55	40	575	68	45	580	55	40	830	153
RTOR Reduction (vph)	0	7	0	0	10	0	0	8	0	0	0	87
Lane Group Flow (vph)	67	739	0	40	633	0	45	627	0	40	830	66
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	348	1811		295	1809		93	1069		151	1097	423
v/s Ratio Prot		c0.24			0.20			0.20			c0.26	
v/s Ratio Perm	0.11			0.08			0.17			0.09		0.05
v/c Ratio	0.19	0.41		0.14	0.35		0.48	0.59		0.26	0.76	0.16
Uniform Delay, d1	8.8	10.3		8.5	9.8		23.2	24.2		21.3	26.2	20.4
Progression Factor	2.19	2.06		0.57	0.49		0.58	0.54		1.62	1.59	3.42
Incremental Delay, d2	1.1	0.6		0.9	0.5		16.1	2.2		3.8	4.4	0.7
Delay (s)	20.4	21.8		5.7	5.3		29.6	15.3		38.3	45.8	70.5
Level of Service	C	C		A	A		C	B		D	D	E
Approach Delay (s)		21.6			5.3			16.3			49.2	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	448	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.98			1.00	0.89		1.00	0.83
Flpb, ped/bikes	0.93	1.00		0.93	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1481	3037		1478	3050			3165	1263		1676	1178
Flt Permitted	0.37	1.00		0.29	1.00			0.86	1.00		1.00	1.00
Satd. Flow (perm)	575	3037		446	3050			2737	1263		1676	1178
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	672	82	83	527	73	41	599	76	0	487	128
RTOR Reduction (vph)	0	10	0	0	12	0	0	0	31	0	0	42
Lane Group Flow (vph)	74	744	0	83	588	0	0	640	45	0	487	86
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	261	1383		203	1389			1186	547		726	510
v/s Ratio Prot		c0.24			0.19						c0.29	
v/s Ratio Perm	0.13			0.19				0.23	0.04			0.07
v/c Ratio	0.28	0.54		0.41	0.42			0.54	0.08		0.67	0.17
Uniform Delay, d1	15.3	17.7		16.4	16.5			18.9	15.0		20.4	15.6
Progression Factor	0.70	0.73		1.55	1.60			0.50	0.30		1.20	1.65
Incremental Delay, d2	2.5	1.4		4.7	0.7			1.6	0.3		3.5	0.5
Delay (s)	13.3	14.4		30.1	27.2			11.0	4.8		27.9	26.3
Level of Service	B	B		C	C			B	A		C	C
Approach Delay (s)		14.3			27.6			10.4			27.6	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	506	91	80	591	112	55	727	101	47	647	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3112		1593	3109		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.41	1.00		0.11	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3112		679	3109		176	3185	1425	426	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	550	99	87	642	122	60	790	110	51	703	242
RTOR Reduction (vph)	0	16	0	0	17	0	0	0	57	0	0	140
Lane Group Flow (vph)	175	633	0	87	747	0	60	790	53	51	703	102
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1441		224	1025		74	1344	601	179	707	601
v/s Ratio Prot	c0.11	0.20			c0.24			0.25			c0.42	
v/s Ratio Perm				0.13			0.34		0.04	0.12		0.07
v/c Ratio	1.17	0.44		0.39	0.73		0.81	0.59	0.09	0.28	0.99	0.17
Uniform Delay, d1	40.8	16.3		23.2	26.6		22.8	20.0	15.6	17.1	25.9	16.2
Progression Factor	0.90	1.14		1.00	1.00		1.13	1.11	1.86	0.54	0.68	0.69
Incremental Delay, d2	121.9	0.9		5.0	4.5		58.0	1.8	0.3	3.7	31.3	0.6
Delay (s)	158.7	19.4		28.2	31.1		83.9	23.9	29.2	12.9	48.9	11.8
Level of Service	F	B		C	C		F	C	C	B	D	B
Approach Delay (s)		49.0			30.8			28.3			38.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	33	48	188	388	278	6	1562	0	8	274	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577		1593	3136	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577		197	3136	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	36	52	204	422	302	7	1698	0	9	298	34
RTOR Reduction (vph)	0	0	40	0	0	130	0	0	0	0	8	0
Lane Group Flow (vph)	76	36	12	204	422	172	7	1698	0	9	324	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	8.1	16.7	20.5	12.4	21.0	21.0	3.8	42.9		34.1	34.1	
Effective Green, g (s)	8.1	16.7	20.5	12.4	21.0	21.0	3.8	42.9		34.1	34.1	
Actuated g/C Ratio	0.09	0.19	0.23	0.14	0.23	0.23	0.04	0.48		0.38	0.38	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	278	310	324	219	743	332	67	2181		74	1188	
v/s Ratio Prot	c0.02	0.02	0.00	c0.13	c0.13		0.00	c0.37			0.10	
v/s Ratio Perm			0.01			0.12				0.05		
v/c Ratio	0.27	0.12	0.04	0.93	0.57	0.52	0.10	0.78		0.12	0.27	
Uniform Delay, d1	38.2	30.5	27.1	38.4	30.5	30.1	41.5	19.6		18.2	19.4	
Progression Factor	1.00	1.00	1.00	0.76	0.88	0.86	1.00	1.00		0.66	0.65	
Incremental Delay, d2	0.5	0.2	0.0	41.5	1.0	1.3	0.7	2.8		3.1	0.5	
Delay (s)	38.7	30.7	27.1	70.7	28.0	27.1	42.2	22.4		15.2	13.1	
Level of Service	D	C	C	E	C	C	D	C		B	B	
Approach Delay (s)		33.3			37.1			22.5			13.1	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	45	74	435	0	0	0	0	0	1056	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes			0.88	1.00	1.00						1.00	0.94
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1274	1593	3185						4577	1338
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1274	1593	3185						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	49	80	473	0	0	0	0	0	1148	222
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	123
Lane Group Flow (vph)	0	0	15	80	473	0	0	0	0	0	1148	99
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			27.8	8.7	40.0						40.1	40.1
Effective Green, g (s)			27.8	8.7	40.0						40.1	40.1
Actuated g/C Ratio			0.31	0.10	0.44						0.45	0.45
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			393	153	1415						2039	596
v/s Ratio Prot				c0.05	c0.15						c0.25	
v/s Ratio Perm			0.01									0.07
v/c Ratio			0.04	0.52	0.33						0.56	0.17
Uniform Delay, d1			21.8	38.7	16.3						18.5	14.9
Progression Factor			1.00	0.71	1.21						0.61	1.32
Incremental Delay, d2			0.2	2.8	0.6						1.0	0.5
Delay (s)			21.9	30.2	20.2						12.2	20.3
Level of Service			C	C	C						B	C
Approach Delay (s)		21.9			21.7			0.0			13.6	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	423	127	25	205	0	0	281	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					1.00			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					3062			3165			3090	
Flt Permitted					1.00			0.90			1.00	
Satd. Flow (perm)					3062			2851			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	45	460	138	27	223	0	0	305	63
RTOR Reduction (vph)	0	0	0	0	28	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	0	615	0	0	250	0	0	349	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					32.2			48.6			48.6	
Effective Green, g (s)					32.2			48.6			48.6	
Actuated g/C Ratio					0.36			0.54			0.54	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					1095			1539			1668	
v/s Ratio Prot											c0.11	
v/s Ratio Perm					0.20			0.09				
v/c Ratio					0.56			0.16			0.21	
Uniform Delay, d1					23.2			10.4			10.7	
Progression Factor					2.03			1.00			1.00	
Incremental Delay, d2					2.0			0.2			0.3	
Delay (s)					49.1			10.7			11.0	
Level of Service					D			B			B	
Approach Delay (s)		0.0			49.1			10.7			11.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	447	0	0	0	0	0	1460	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.90
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	3185						4577	1279
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	3185						4577	1279
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	486	0	0	0	0	0	1587	185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	0	0	168	486	0	0	0	0	0	1587	93
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	1245						2308	645
v/s Ratio Prot					c0.15						c0.35	
v/s Ratio Perm				0.12								0.07
v/c Ratio				0.30	0.39						0.69	0.14
Uniform Delay, d1				18.9	19.7						16.9	11.9
Progression Factor				0.77	0.80						1.00	1.00
Incremental Delay, d2				1.3	0.8						1.7	0.5
Delay (s)				15.9	16.6						18.6	12.4
Level of Service				B	B						B	B
Approach Delay (s)		0.0			16.4			0.0			18.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	493	120	129	929	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					3185	1313		4539				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					3185	1313		4539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	536	130	140	1010	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	46	0	20	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	536	84	0	1130	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1245	513		2289				
v/s Ratio Prot					c0.17							
v/s Ratio Perm						0.06		0.25				
v/c Ratio					0.43	0.16		0.49				
Uniform Delay, d1					20.1	17.8		14.7				
Progression Factor					1.01	1.44		1.00				
Incremental Delay, d2					1.0	0.6		0.8				
Delay (s)					21.3	26.3		15.5				
Level of Service					C	C		B				
Approach Delay (s)		0.0			22.3			15.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	589	73	19	520	0	0	818	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.94
Flpb, ped/bikes				0.95	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1511	3097		1577	3185			3185	1336
Flt Permitted				0.95	1.00		0.22	1.00			1.00	1.00
Satd. Flow (perm)				1511	3097		364	3185			3185	1336
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	640	79	21	565	0	0	889	73
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	93	709	0	21	565	0	0	889	42
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				41.0	41.0		43.0	43.0			43.0	43.0
Effective Green, g (s)				41.0	41.0		43.0	43.0			43.0	43.0
Actuated g/C Ratio				0.46	0.46		0.48	0.48			0.48	0.48
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				688	1410		173	1521			1521	638
v/s Ratio Prot					c0.23			0.18			c0.28	
v/s Ratio Perm				0.06			0.06					0.03
v/c Ratio				0.14	0.50		0.12	0.37			0.58	0.07
Uniform Delay, d1				14.2	17.3		13.0	14.9			17.0	12.7
Progression Factor				1.60	1.52		1.00	1.00			1.68	3.36
Incremental Delay, d2				0.4	1.2		1.4	0.7			1.2	0.1
Delay (s)				23.2	27.5		14.5	15.6			29.8	42.7
Level of Service				C	C		B	B			C	D
Approach Delay (s)		0.0			27.0			15.6			30.7	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	513	50	64	661	0	0	631	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.70	1.00	1.00			0.99	
Flpb, ped/bikes					0.97	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.99	
Flt Protected					1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3093	998	1593	3185			1634	
Flt Permitted					1.00	1.00	0.14	1.00			1.00	
Satd. Flow (perm)					3093	998	239	3185			1634	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	558	54	70	718	0	0	686	62
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	4	0
Lane Group Flow (vph)	0	0	0	0	599	28	70	718	0	0	744	0
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					1237	399	118	1574			807	
v/s Ratio Prot								0.23			c0.46	
v/s Ratio Perm					0.19	0.03	0.29					
v/c Ratio					0.48	0.07	0.59	0.46			0.92	
Uniform Delay, d1					20.1	16.7	16.3	14.9			21.1	
Progression Factor					0.62	0.42	1.00	1.00			0.74	
Incremental Delay, d2					1.2	0.3	20.0	1.0			15.6	
Delay (s)					13.7	7.3	36.3	15.8			31.3	
Level of Service					B	A	D	B			C	
Approach Delay (s)		0.0			13.1			17.6			31.3	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	356	92	49	750	0	0	751	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3079		1593	3185			3130	
Flt Permitted					0.99		0.27	1.00			1.00	
Satd. Flow (perm)					3079		453	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	387	100	53	815	0	0	816	107
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	557	0	53	815	0	0	912	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					23.0		61.0	61.0			61.0	
Effective Green, g (s)					23.0		61.0	61.0			61.0	
Actuated g/C Ratio					0.26		0.68	0.68			0.68	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					786		307	2158			2121	
v/s Ratio Prot								0.26			c0.29	
v/s Ratio Perm					0.18		0.12					
v/c Ratio					0.71		0.17	0.38			0.43	
Uniform Delay, d1					30.4		5.3	6.3			6.6	
Progression Factor					1.00		1.00	1.00			1.54	
Incremental Delay, d2					5.3		1.2	0.5			0.3	
Delay (s)					35.8		6.5	6.8			10.5	
Level of Service					D		A	A			B	
Approach Delay (s)		0.0			35.8			6.8			10.5	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix D
Existing (2014/2015) With 7th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	592	489	222	420	49	63	109	63	171	680	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1445	3185	1232	1578	4414		1587	3185	1219	1339	3083	
Flt Permitted	0.45	1.00	1.00	0.27	1.00		0.18	1.00	1.00	0.68	1.00	
Satd. Flow (perm)	691	3185	1232	453	4414		308	3185	1219	955	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	643	532	241	457	53	68	118	68	186	739	86
RTOR Reduction (vph)	0	0	188	0	21	0	0	0	20	0	12	0
Lane Group Flow (vph)	98	643	344	241	489	0	68	118	48	186	813	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Effective Green, g (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.49	0.49		0.35	0.35	0.48	0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1028	397	361	2162		163	1123	581	255	823	
v/s Ratio Prot		0.20		c0.08	0.11		c0.02	0.04	0.01		c0.26	
v/s Ratio Perm	0.14		c0.28	0.24			0.13		0.03	0.19		
v/c Ratio	0.44	0.63	0.87	0.67	0.23		0.42	0.11	0.08	0.73	0.99	
Uniform Delay, d1	18.7	20.1	22.3	11.5	10.2		16.8	15.2	10.0	23.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	2.9	21.6	4.6	0.2		1.7	0.2	0.1	16.7	28.6	
Delay (s)	24.9	23.0	43.8	16.2	10.5		18.5	15.4	10.0	40.1	54.2	
Level of Service	C	C	D	B	B		B	B	B	D	D	
Approach Delay (s)		31.8			12.3			14.8			51.6	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	525	162	223	534	237	17	67	68	141	1098	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1536	3185	1010	3090	3185	1055	1593	3185	1425	1177	3185	1126
Flt Permitted	0.37	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	606	3185	1010	3090	3185	1055	197	3185	1425	876	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	571	176	242	580	258	18	73	74	153	1193	176
RTOR Reduction (vph)	0	0	132	0	0	106	0	0	67	0	0	51
Lane Group Flow (vph)	142	571	44	242	580	152	18	73	7	153	1193	125
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	789	250	330	1226	406	66	1082	142	297	1082	461
v/s Ratio Prot	0.04	c0.18		c0.08	c0.18			0.02	0.01		c0.37	0.02
v/s Ratio Perm	0.14		0.04			0.14	0.09			0.17		0.09
v/c Ratio	0.55	0.72	0.17	0.73	0.47	0.37	0.27	0.07	0.05	0.52	1.10	0.27
Uniform Delay, d1	25.7	34.5	29.6	43.3	23.1	22.1	24.0	22.3	40.7	26.4	33.0	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	5.7	1.5	8.2	0.3	0.6	9.9	0.1	0.2	6.3	59.9	0.3
Delay (s)	28.3	40.2	31.1	51.4	23.4	22.7	33.9	22.4	40.9	32.7	92.9	19.9
Level of Service	C	D	C	D	C	C	C	C	D	C	F	B
Approach Delay (s)		36.5			29.5			31.9			78.4	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	572	158	156	773	221	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2084
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2084
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	622	172	170	840	240	303
RTOR Reduction (vph)	0	103	0	0	0	30
Lane Group Flow (vph)	622	69	170	840	240	274
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	28.0	28.0	11.5	43.0	17.2	28.7
Effective Green, g (s)	28.0	28.0	11.5	43.0	17.2	28.7
Actuated g/C Ratio	0.40	0.40	0.16	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274	472	261	1956	759	854
v/s Ratio Prot	c0.20		c0.11	0.26	0.08	c0.05
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.49	0.15	0.65	0.43	0.32	0.32
Uniform Delay, d1	15.7	13.4	27.4	7.1	21.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.6	5.7	0.7	0.2	0.2
Delay (s)	17.0	14.0	33.1	7.8	21.8	14.2
Level of Service	B	B	C	A	C	B
Approach Delay (s)	16.4			12.0	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	598	99	57	816	82	88	200	25	58	1041	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00		0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1432	3185	1034	1593	3091		1521	3185	885
Flt Permitted	0.13	1.00	1.00	0.39	1.00	1.00	0.95	1.00		0.60	1.00	1.00
Satd. Flow (perm)	222	3185	1053	590	3185	1034	1593	3091		961	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	650	108	62	887	89	96	217	27	63	1132	148
RTOR Reduction (vph)	0	0	67	0	0	62	0	10	0	0	0	86
Lane Group Flow (vph)	66	650	41	62	887	27	96	234	0	63	1132	62
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	8.9	38.2		37.3	33.3	33.3
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	8.9	38.2		37.3	33.3	33.3
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	178	962	312	157	1311		423	1178	327
v/s Ratio Prot	0.02	c0.20			c0.28		c0.06	0.08		0.01	c0.36	
v/s Ratio Perm	0.15		0.04	0.11		0.03				0.06		0.07
v/c Ratio	0.46	0.54	0.10	0.35	0.92	0.09	0.61	0.18		0.15	0.96	0.19
Uniform Delay, d1	20.5	21.7	18.0	24.5	30.4	22.5	38.9	16.1		16.1	27.7	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	1.7	0.5	5.3	15.4	0.5	6.9	0.1		0.2	17.6	0.3
Delay (s)	22.7	23.4	18.5	29.8	45.8	23.0	45.8	16.2		16.3	45.3	19.5
Level of Service	C	C	B	C	D	C	D	B		B	D	B
Approach Delay (s)		22.7			42.9			24.5			41.1	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	519	79	53	695	148	30	327	52	54	519	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.93	1.00	1.00	0.98	1.00		0.89	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	1199	1484	3185	1181	1560	4358		1423	2957	
Flt Permitted	0.26	1.00	1.00	0.44	1.00	1.00	0.18	1.00		0.49	1.00	
Satd. Flow (perm)	429	3185	1199	688	3185	1181	298	4358		738	2957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	564	86	58	755	161	33	355	57	59	564	240
RTOR Reduction (vph)	0	0	20	0	0	88	0	31	0	0	67	0
Lane Group Flow (vph)	111	564	66	58	755	73	33	381	0	59	737	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	1833	690	311	1442	534	93	1369		231	929	
v/s Ratio Prot	c0.03	0.18			c0.24			0.09			c0.25	
v/s Ratio Perm	0.16		0.06	0.08		0.06	0.11			0.08		
v/c Ratio	0.33	0.31	0.10	0.19	0.52	0.14	0.35	0.28		0.26	0.79	
Uniform Delay, d1	7.7	7.7	6.7	11.4	13.7	11.2	18.5	18.0		17.9	21.9	
Progression Factor	1.00	1.00	1.00	1.13	1.19	2.86	1.98	2.20		1.00	1.00	
Incremental Delay, d2	0.6	0.4	0.3	1.1	1.1	0.4	10.0	0.5		2.7	6.9	
Delay (s)	8.2	8.1	6.9	14.0	17.4	32.4	46.7	40.2		20.5	28.8	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		8.0			19.7			40.7			28.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	467	74	37	593	6	0	0	0	77	1009	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1575	3185	1249	1503	3174						4544	1255
Flt Permitted	0.26	1.00	1.00	0.47	1.00						1.00	1.00
Satd. Flow (perm)	438	3185	1249	736	3174						4544	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	508	80	40	645	7	0	0	0	84	1097	345
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	72	508	59	40	651	0	0	0	0	0	1181	327
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	296	1446	567	239	1033						1785	600
v/s Ratio Prot	0.02	0.16			c0.20							c0.05
v/s Ratio Perm	0.09		0.05	0.05							0.26	0.21
v/c Ratio	0.24	0.35	0.10	0.17	0.63						0.66	0.55
Uniform Delay, d1	11.6	12.4	10.9	16.8	20.0						17.4	12.9
Progression Factor	1.28	1.19	1.51	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	0.7	0.4	1.5	2.9						1.9	1.0
Delay (s)	15.2	15.5	16.8	18.3	22.9						19.4	13.9
Level of Service	B	B	B	B	C						B	B
Approach Delay (s)		15.6			22.7			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	3	8	43	44	47	10	56	5	35	1118	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2762		1593	2909		1577	3127		1472	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.13	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2762		1593	2909		224	3127		1103	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	9	47	48	51	11	61	5	38	1215	310
RTOR Reduction (vph)	0	9	0	0	40	0	0	3	0	0	0	85
Lane Group Flow (vph)	14	3	0	47	59	0	11	63	0	38	1215	225
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Effective Green, g (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Actuated g/C Ratio	0.08	0.25		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	702		68	639		110	1541		543	1569	741
v/s Ratio Prot	0.01	0.00		c0.03	c0.02			0.02			c0.38	0.02
v/s Ratio Perm							0.05			0.03		0.15
v/c Ratio	0.11	0.00		0.69	0.09		0.10	0.04		0.07	0.77	0.30
Uniform Delay, d1	30.1	19.5		33.0	21.7		9.5	9.2		9.3	14.6	7.8
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0		26.1	0.1		1.8	0.1		0.2	3.8	0.2
Delay (s)	30.5	19.5		59.2	21.8		16.2	13.8		9.6	18.4	8.1
Level of Service	C	B		E	C		B	B		A	B	A
Approach Delay (s)		25.4			33.8			14.1			16.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	387	415	0	87	17	73	316	50	19	1064	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.97		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.89	1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3059		1563	3036		1425	3185	1239
Flt Permitted		1.00	1.00		1.00		0.16	1.00		0.52	1.00	1.00
Satd. Flow (perm)		1676	1326		3059		255	3036		777	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	421	451	0	95	18	79	343	54	21	1157	129
RTOR Reduction (vph)	0	0	24	0	12	0	0	18	0	0	0	65
Lane Group Flow (vph)	0	421	427	0	101	0	79	379	0	21	1157	64
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Effective Green, g (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Actuated g/C Ratio		0.36	0.36		0.36		0.49	0.49		0.49	0.49	0.49
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		598	473		1092		126	1500		384	1574	612
v/s Ratio Prot		0.25			0.03			0.12			c0.36	
v/s Ratio Perm			c0.32				0.31			0.03		0.05
v/c Ratio		0.70	0.90		0.09		0.63	0.25		0.05	0.74	0.10
Uniform Delay, d1		19.3	21.4		15.0		13.0	10.2		9.2	14.1	9.4
Progression Factor		1.00	1.00		1.15		1.42	1.45		1.00	1.00	1.00
Incremental Delay, d2		6.8	23.2		0.2		18.3	0.3		0.3	3.1	0.3
Delay (s)		26.1	44.5		17.3		36.8	15.2		9.5	17.2	9.8
Level of Service		C	D		B		D	B		A	B	A
Approach Delay (s)		35.6			17.3			18.8			16.3	
Approach LOS		D			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	544	72	0	359	38	51	341	126	0	488	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	0.90
Flpb, ped/bikes		1.00	1.00		1.00	1.00	0.99	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1142		1676	1320	1584	2883			1616	1237
Flt Permitted		1.00	1.00		1.00	1.00	0.26	1.00			1.00	1.00
Satd. Flow (perm)		1676	1142		1676	1320	432	2883			1616	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	591	78	0	390	41	55	371	137	0	530	135
RTOR Reduction (vph)	0	0	49	0	0	26	0	16	0	0	0	87
Lane Group Flow (vph)	0	591	29	0	390	15	55	492	0	0	530	48
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		26.1	26.1		26.1	26.1	33.5	33.5			24.8	24.8
Effective Green, g (s)		26.1	26.1		26.1	26.1	33.5	33.5			24.8	24.8
Actuated g/C Ratio		0.37	0.37		0.37	0.37	0.48	0.48			0.35	0.35
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		624	425		624	492	261	1379			572	438
v/s Ratio Prot		c0.35			0.23		0.01	c0.17			c0.33	
v/s Ratio Perm			0.03			0.01	0.09					0.04
v/c Ratio		0.95	0.07		0.62	0.03	0.21	0.36			0.93	0.11
Uniform Delay, d1		21.3	14.1		17.9	13.9	19.2	11.5			21.7	15.2
Progression Factor		0.80	2.17		1.01	1.00	1.79	1.45			0.46	0.31
Incremental Delay, d2		23.4	0.3		3.9	0.1	0.4	0.2			16.8	0.1
Delay (s)		40.5	30.9		22.1	14.0	34.8	16.8			26.8	4.8
Level of Service		D	C		C	B	C	B			C	A
Approach Delay (s)		39.4			21.3			18.6			22.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	347	304	104	332	0	0	0	0	26	1088	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.92	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1472	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.36	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	560	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	377	330	113	361	0	0	0	0	28	1183	92
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	377	315	113	361	0	0	0	0	28	1183	49
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	185	555					721	1706	362
v/s Ratio Prot		0.22			0.22						c0.37	
v/s Ratio Perm			c0.27	0.20						0.02		0.07
v/c Ratio		0.68	0.81	0.61	0.65					0.04	0.69	0.14
Uniform Delay, d1		20.2	21.4	19.6	19.9					7.7	12.0	8.1
Progression Factor		0.86	0.91	1.00	1.00					0.28	0.29	0.00
Incremental Delay, d2		4.1	10.6	14.1	5.8					0.1	1.9	0.6
Delay (s)		21.6	30.1	33.7	25.8					2.3	5.5	0.7
Level of Service		C	C	C	C					A	A	A
Approach Delay (s)		25.5			27.7			0.0			5.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	22	54	18	58	1057	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1519	3185	3185	993
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	322	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	59	20	63	1149	177
RTOR Reduction (vph)	0	9	0	0	0	46
Lane Group Flow (vph)	24	50	20	63	1149	131
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	202	2006	2006	625
v/s Ratio Prot				0.02	c0.36	
v/s Ratio Perm	0.02	c0.02	0.06			0.13
v/c Ratio	0.07	0.10	0.10	0.03	0.57	0.21
Uniform Delay, d1	21.0	21.2	5.1	4.9	7.5	5.5
Progression Factor	1.00	1.00	1.00	1.00	0.12	0.00
Incremental Delay, d2	0.1	0.1	1.0	0.0	0.8	0.5
Delay (s)	21.1	21.3	6.1	4.9	1.7	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.2			5.2	1.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1378	160	56	433	0	0	1043	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3113		1570	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3113		220	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1498	174	61	471	0	0	1134	220
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	103	1659	0	61	471	0	0	1134	214
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1512		94	1365			1365	522
v/s Ratio Prot					c0.53			0.15			c0.36	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.14	1.10		0.65	0.35			0.83	0.41
Uniform Delay, d1				10.0	18.0		15.8	13.4			17.7	13.9
Progression Factor				2.13	1.93		0.96	0.90			0.99	0.91
Incremental Delay, d2				0.0	45.0		28.0	0.6			3.7	1.4
Delay (s)				21.3	79.8		43.2	12.7			21.3	14.0
Level of Service				C	E		D	B			C	B
Approach Delay (s)		0.0			76.4			16.2			20.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	1561	56	78	427	0	0	310	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3140			1616	1254
Flt Permitted				0.95	1.00	1.00		0.84			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2668			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	1697	61	85	464	0	0	337	165
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	78
Lane Group Flow (vph)	0	0	0	15	1697	25	0	549	0	0	337	87
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1238			750	582
v/s Ratio Prot					c0.53						c0.21	
v/s Ratio Perm				0.01		0.02		0.21				0.07
v/c Ratio				0.03	1.32	0.05		0.44			0.45	0.15
Uniform Delay, d1				12.6	20.9	12.7		12.6			12.7	10.8
Progression Factor				1.90	1.75	6.28		0.75			0.28	0.13
Incremental Delay, d2				0.0	147.9	0.1		0.2			1.1	0.3
Delay (s)				24.0	184.4	80.0		9.7			4.7	1.7
Level of Service				C	F	F		A			A	A
Approach Delay (s)		0.0			179.5			9.7			3.7	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	115.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↑↑						↑↑↑	↱
Volume (vph)	0	0	0	428	1312	0	0	0	0	0	1010	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	465	1426	0	0	0	0	0	1098	177
RTOR Reduction (vph)	0	0	0	20	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	445	1426	0	0	0	0	0	1098	161
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.45						c0.24	
v/s Ratio Perm				0.31								0.13
v/c Ratio				0.71	1.04						0.55	0.30
Uniform Delay, d1				16.3	19.9						14.8	12.9
Progression Factor				1.00	1.00						0.77	0.81
Incremental Delay, d2				6.8	34.7						0.8	1.0
Delay (s)				23.1	54.6						12.1	11.5
Level of Service				C	D						B	B
Approach Delay (s)		0.0			46.8			0.0			12.0	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	559	1252	0	0	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	608	1361	0	0	41	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	608	1361	0	0	41	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.20				
v/s Ratio Perm					c0.01	
v/c Ratio	0.35	0.24			0.22	
Uniform Delay, d1	8.1	1.0			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.5	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.4	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	840	163	0	0	0	0	495	98	44	198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4412		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4412		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	913	177	0	0	0	0	538	107	48	215	0
RTOR Reduction (vph)	0	0	107	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	210	913	70	0	0	0	0	606	0	48	215	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1575		158	780	
v/s Ratio Prot		0.16						c0.14		0.02	c0.13	
v/s Ratio Perm	c0.19		0.05									
v/c Ratio	0.48	0.40	0.13					0.38		0.30	0.28	
Uniform Delay, d1	15.9	15.3	13.6					16.8		32.0	11.5	
Progression Factor	1.20	1.14	2.03					1.16		1.00	1.00	
Incremental Delay, d2	3.8	0.5	0.5					0.7		1.1	0.9	
Delay (s)	22.9	18.1	28.2					20.1		33.1	12.3	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		20.2			0.0			20.1			16.1	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	727	133	0	0	0	0	427	70	140	1009	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.93	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5467						3041		1478	3185	
Flt Permitted		0.99						1.00		0.40	1.00	
Satd. Flow (perm)		5467						3041		626	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	790	145	0	0	0	0	464	76	152	1097	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	1059	0	0	0	0	0	521	0	152	1097	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2421						1346		277	1410	
v/s Ratio Prot								0.17			c0.34	
v/s Ratio Perm		0.19								0.24		
v/c Ratio		0.44						0.39		0.55	0.78	
Uniform Delay, d1		13.5						13.1		14.4	16.6	
Progression Factor		1.14						1.71		0.92	1.00	
Incremental Delay, d2		0.5						0.8		4.8	2.7	
Delay (s)		15.9						23.2		18.0	19.2	
Level of Service		B						C		B	B	
Approach Delay (s)		15.9			0.0			23.2			19.1	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	747	71	0	0	0	0	432	87	0	398	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5392						2939			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5392						2939			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	812	77	0	0	0	0	470	95	0	433	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	957	0	0	0	0	0	541	0	0	433	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2696						1037			570	
v/s Ratio Prot								0.18			c0.27	
v/s Ratio Perm		0.18										
v/c Ratio		0.35						0.52			0.76	
Uniform Delay, d1		10.6						18.0			20.0	
Progression Factor		1.80						1.26			0.89	
Incremental Delay, d2		0.3						1.7			8.8	
Delay (s)		19.5						24.3			26.5	
Level of Service		B						C			C	
Approach Delay (s)		19.5			0.0			24.3			26.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	619	159	0	0	0	0	0	0	118	1147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5387									4507	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5387									4507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	673	173	0	0	0	0	0	0	128	1247	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	841	0	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2708									1641	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.31									0.83	
Uniform Delay, d1		10.3									20.2	
Progression Factor		1.55									0.88	
Incremental Delay, d2		0.3									4.0	
Delay (s)		16.2									21.7	
Level of Service		B									C	
Approach Delay (s)		16.2			0.0			0.0			21.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	359	1157	199	0	0	0	0	723	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	390	1258	216	0	0	0	0	786	193
RTOR Reduction (vph)	0	0	0	55	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	249	1505	0	0	0	0	0	786	175
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.17	
v/s Ratio Perm				c0.28	0.27							c0.18
v/c Ratio				0.65	0.62						0.40	0.42
Uniform Delay, d1				15.8	15.6						13.8	14.0
Progression Factor				1.07	0.92						1.00	1.00
Incremental Delay, d2				5.9	0.9						0.6	3.1
Delay (s)				22.8	15.2						14.4	17.1
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.4			0.0			14.9	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1219	105	352	591	0	0	0	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5536		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5536		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1325	114	383	642	0	0	0	193
RTOR Reduction (vph)	0	0	0	0	20	0	283	0	0	0	0	178
Lane Group Flow (vph)	0	0	0	0	1419	0	100	642	0	0	0	15
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.14				
v/s Ratio Perm												c0.01
v/c Ratio					0.95		0.12	0.29				0.08
Uniform Delay, d1					25.1		19.8	11.0				29.9
Progression Factor					1.58		1.58	1.05				1.00
Incremental Delay, d2					12.0		0.3	0.3				0.2
Delay (s)					51.6		31.5	11.9				30.1
Level of Service					D		C	B				C
Approach Delay (s)		0.0			51.6			19.2			30.1	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	80	1226	85	56	401	0	0	915	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5589		1509	3185			3185	960
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1004	5589		294	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	87	1333	92	61	436	0	0	995	243
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	87	1410	0	61	436	0	0	995	226
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		131	1419			1419	427
v/s Ratio Prot					c0.25			0.14			c0.31	
v/s Ratio Perm				0.09			0.21					0.24
v/c Ratio				0.21	0.61		0.47	0.31			0.70	0.53
Uniform Delay, d1				13.1	16.1		13.6	12.5			15.6	14.1
Progression Factor				0.28	0.36		1.01	0.89			0.49	0.33
Incremental Delay, d2				1.0	1.0		11.4	0.6			1.9	3.1
Delay (s)				4.6	6.9		25.1	11.6			9.6	7.7
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.7			13.2			9.3	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	21	1214	67	40	530	0	0	308	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3174			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2901			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	1320	73	43	576	0	0	335	100
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1405	0	0	619	0	0	335	83
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1264			704	429
v/s Ratio Prot											0.21	
v/s Ratio Perm					0.25			c0.21				0.08
v/c Ratio					0.59			0.49			0.48	0.19
Uniform Delay, d1					15.3			14.2			14.1	12.2
Progression Factor					0.69			0.51			0.35	0.21
Incremental Delay, d2					1.0			1.3			1.6	0.7
Delay (s)					11.5			8.5			6.6	3.3
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.5			8.5			5.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	105	784	0	0	0	0	0	1221	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	114	852	0	0	0	0	0	1327	326
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	0	0	0	953	0	0	0	0	0	1327	281
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.29	
v/s Ratio Perm					0.17							0.20
v/c Ratio					0.38						0.67	0.45
Uniform Delay, d1					13.5						15.7	13.9
Progression Factor					1.00						1.11	1.11
Incremental Delay, d2					0.5						1.3	1.8
Delay (s)					14.0						18.8	17.2
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1230	227	0	0	0	0	0	0	125	1057	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5608	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5608	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1337	247	0	0	0	0	0	0	136	1149	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1337	230	0	0	0	0	0	0	0	1270	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2435	
v/s Ratio Prot		c0.23										
v/s Ratio Perm			0.23								0.23	
v/c Ratio		0.54	0.53								0.52	
Uniform Delay, d1		14.7	14.6								14.5	
Progression Factor		1.00	1.00								1.65	
Incremental Delay, d2		0.8	4.6								0.7	
Delay (s)		15.5	19.2								24.7	
Level of Service		B	B								C	
Approach Delay (s)		16.1			0.0			0.0			24.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	962	0	0	0	0	0	963	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5223						6307				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5223						6307				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	420	1046	0	0	0	0	0	1047	191	0	0	0
RTOR Reduction (vph)	24	24	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	257	1161	0	0	0	0	0	1214	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2253						2730				
v/s Ratio Prot								c0.19				
v/s Ratio Perm	c0.28	0.22										
v/c Ratio	0.64	0.52						0.44				
Uniform Delay, d1	15.6	14.5						13.9				
Progression Factor	0.22	0.20						1.92				
Incremental Delay, d2	6.6	0.7						0.5				
Delay (s)	10.0	3.6						27.3				
Level of Service	A	A						C				
Approach Delay (s)		4.8			0.0			27.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	708	177	0	0	0	0	324	88	140	815	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5594						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.52	1.00	
Satd. Flow (perm)		5594						3185	1425	868	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	770	192	0	0	0	0	352	96	152	886	0
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	917	0	0	0	0	0	352	44	152	886	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	396	2092	
v/s Ratio Prot		c0.16						0.11			c0.19	
v/s Ratio Perm									0.03	0.18		
v/c Ratio		0.36						0.24	0.07	0.38	0.42	
Uniform Delay, d1		12.3						11.6	10.6	12.5	12.8	
Progression Factor		0.49						0.49	0.33	0.83	0.86	
Incremental Delay, d2		0.3						0.4	0.2	2.1	0.5	
Delay (s)		6.4						6.1	3.7	12.5	11.4	
Level of Service		A						A	A	B	B	
Approach Delay (s)		6.4			0.0			5.5			11.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	780	59	0	0	0	0	498	60	0	324	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5502						3095			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5502						3095			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	848	64	0	0	0	0	541	65	0	352	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	972	0	0	0	0	0	602	0	0	352	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1965						1534			801	
v/s Ratio Prot								0.19			c0.22	
v/s Ratio Perm		0.18										
v/c Ratio		0.49						0.39			0.44	
Uniform Delay, d1		17.6						11.1			11.4	
Progression Factor		0.46						1.79			2.32	
Incremental Delay, d2		0.9						0.7			1.6	
Delay (s)		8.9						20.5			28.0	
Level of Service		A						C			C	
Approach Delay (s)		8.9			0.0			20.5			28.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	772	71	0	0	0	0	0	0	94	1111	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	839	77	0	0	0	0	0	0	102	1208	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	902	0	0	0	0	0	0	0	0	1295	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.28	
v/c Ratio		0.37									0.65	
Uniform Delay, d1		13.4									15.6	
Progression Factor		0.18									0.65	
Incremental Delay, d2		0.4									1.3	
Delay (s)		2.7									11.3	
Level of Service		A									B	
Approach Delay (s)		2.7			0.0			0.0			11.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	246	0	0	389	112	315	1278	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.16			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	226			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	226			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	267	0	0	423	122	342	1389	141	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	114	0	0	98	0	0	0
Lane Group Flow (vph)	95	267	0	0	423	8	342	1389	43	0	0	0
Confl. Peds. (#/hr)									1280			
Confl. Bikes (#/hr)									24			
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Effective Green, g (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.45			0.33	0.06	0.31	0.31	0.31			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	211	863			1301	89	489	1405	69			
v/s Ratio Prot	c0.03	c0.02			c0.02	0.01		c0.30				
v/s Ratio Perm		0.15			0.11		0.21		0.19			
v/c Ratio	0.45	0.31			0.33	0.09	0.70	0.99	0.63			
Uniform Delay, d1	31.3	12.1			17.7	30.9	21.4	24.1	20.8			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.2			0.1	0.4	8.1	21.4	36.2			
Delay (s)	32.9	12.3			17.8	31.3	29.5	45.6	57.0			
Level of Service	C	B			B	C	C	D	E			
Approach Delay (s)		17.7			20.8			43.5			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	257	167	83	386	0	0	0	0	155	808	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.97						0.92	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3052						5053	
Flt Permitted		1.00	1.00		0.83						0.99	
Satd. Flow (perm)		1676	971		2563						5053	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	279	182	90	420	0	0	0	0	168	878	104
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	279	170	0	510	0	0	0	0	0	1132	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1198						2144	
v/s Ratio Prot		0.17										
v/s Ratio Perm			0.18		c0.20						0.22	
v/c Ratio		0.36	0.38		0.43						0.53	
Uniform Delay, d1		15.3	15.5		15.9						19.2	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.3	2.4		1.1						0.9	
Delay (s)		16.6	17.8		17.0						20.1	
Level of Service		B	B		B						C	
Approach Delay (s)		17.1			17.0			0.0			20.1	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	285	51	0	445	92	53	284	63	25	214	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.92			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2750			2964	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.90	
Satd. Flow (perm)		1616	949		3185	775		2437			2688	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	310	55	0	484	100	58	309	68	27	233	25
RTOR Reduction (vph)	0	0	28	0	0	25	0	22	0	0	1	0
Lane Group Flow (vph)	0	310	27	0	484	75	0	413	0	0	284	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1044			1152	
v/s Ratio Prot		c0.19			0.15							
v/s Ratio Perm			0.03			0.10		c0.17			0.11	
v/c Ratio		0.40	0.06		0.31	0.20		0.40			0.25	
Uniform Delay, d1		11.5	9.5		10.9	10.2		13.8			12.8	
Progression Factor		1.00	1.00		0.13	0.03		1.21			1.00	
Incremental Delay, d2		1.5	0.2		0.4	0.9		1.0			0.5	
Delay (s)		13.0	9.8		1.8	1.2		17.7			13.3	
Level of Service		B	A		A	A		B			B	
Approach Delay (s)		12.5			1.7			17.7			13.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	294	89	48	455	0	0	0	0	119	731	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.50	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	834	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	320	97	52	495	0	0	0	0	129	795	82
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	320	80	52	495	0	0	0	0	129	795	43
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	357	718					513	1369	445
v/s Ratio Prot		0.19			c0.30						c0.25	
v/s Ratio Perm			0.08	0.06						0.11		0.04
v/c Ratio		0.45	0.20	0.15	0.69					0.25	0.58	0.10
Uniform Delay, d1		14.1	12.5	12.2	16.2					12.8	15.2	11.9
Progression Factor		0.82	0.87	1.67	1.67					0.79	0.64	0.90
Incremental Delay, d2		1.9	1.0	0.7	4.3					1.0	1.6	0.4
Delay (s)		13.5	11.8	21.0	31.5					11.1	11.2	11.0
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		13.1			30.5			0.0			11.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	458	0	0	399	172	75	969	67	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.97				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5419				
Flt Permitted	0.34	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	578	1676			1676	976		5419				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	498	0	0	434	187	82	1053	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	14	0	0	0	0
Lane Group Flow (vph)	33	498	0	0	434	170	0	1194	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	27.3	27.3			27.3	27.3		33.2				
Effective Green, g (s)	27.3	27.3			27.3	27.3		33.2				
Actuated g/C Ratio	0.39	0.39			0.39	0.39		0.47				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	225	653			653	380		2570				
v/s Ratio Prot		c0.30			0.26							
v/s Ratio Perm	0.06					0.17		0.22				
v/c Ratio	0.15	0.76			0.66	0.45		0.46				
Uniform Delay, d1	13.8	18.5			17.6	15.8		12.4				
Progression Factor	0.68	0.73			1.34	1.48		0.78				
Incremental Delay, d2	1.3	7.9			0.5	0.3		0.5				
Delay (s)	10.6	21.5			24.0	23.7		10.1				
Level of Service	B	C			C	C		B				
Approach Delay (s)		20.9			23.9			10.1			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	269	49	21	479	44	0	347	55	0	806	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2892			2944	
Flt Permitted	0.95	1.00	1.00	0.58	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	929	974	1676	961		2892			2944	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	292	53	23	521	48	0	377	60	0	876	133
RTOR Reduction (vph)	0	0	6	0	0	34	0	18	0	0	17	0
Lane Group Flow (vph)	64	292	47	23	521	14	0	419	0	0	992	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Effective Green, g (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Actuated g/C Ratio	0.19	0.51	0.51	0.29	0.29	0.29		0.40			0.40	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	295	861	477	278	478	274		1156			1177	
v/s Ratio Prot	0.04	c0.17			c0.31			0.14			c0.34	
v/s Ratio Perm			0.05	0.02		0.02						
v/c Ratio	0.22	0.34	0.10	0.08	1.09	0.05		0.36			0.84	
Uniform Delay, d1	24.2	10.0	8.7	18.3	25.0	18.1		14.7			19.0	
Progression Factor	1.50	0.85	1.07	1.30	1.28	2.34		1.83			1.80	
Incremental Delay, d2	1.1	0.7	0.3	0.5	63.7	0.3		0.9			6.9	
Delay (s)	37.4	9.2	9.6	24.2	95.6	42.8		27.8			41.0	
Level of Service	D	A	A	C	F	D		C			D	
Approach Delay (s)		13.7			88.6			27.8			41.0	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱		↰↑↱			↑	↱
Volume (vph)	16	255	27	10	441	22	7	536	49	0	342	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	0.47
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3011			1616	643
Flt Permitted	0.32	1.00	1.00	0.54	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	541	1676	621	902	1676	964		2862			1616	643
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	277	29	11	479	24	8	583	53	0	372	85
RTOR Reduction (vph)	0	0	16	0	0	14	0	10	0	0	0	30
Lane Group Flow (vph)	17	277	13	11	479	10	0	634	0	0	372	55
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	custom
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					6
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	0.42
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Grp Cap (vph)	224	696	269	374	696	400		1242			701	267
v/s Ratio Prot		0.17			c0.29						c0.23	
v/s Ratio Perm	0.03		0.02	0.01		0.01		0.22				0.08
v/c Ratio	0.08	0.40	0.05	0.03	0.69	0.02		0.51			0.53	0.20
Uniform Delay, d1	12.3	14.3	11.4	12.1	16.7	12.1		14.4			14.6	13.1
Progression Factor	0.87	0.86	1.91	1.59	1.27	3.39		0.43			0.74	2.91
Incremental Delay, d2	0.6	1.6	0.3	0.1	4.8	0.1		1.4			2.7	1.6
Delay (s)	11.3	13.9	22.2	19.4	26.1	41.1		7.6			13.5	39.6
Level of Service	B	B	C	B	C	D		A			B	D
Approach Delay (s)		14.5			26.6			7.6			18.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	259	69	62	383	0	0	0	0	44	912	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1270	1676						4499	987
Flt Permitted		1.00	1.00	0.55	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	735	1676						4499	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	282	75	67	416	0	0	0	0	48	991	130
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	282	49	67	416	0	0	0	0	0	1039	54
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	307	701						1876	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.09							0.23	0.05
v/c Ratio		0.40	0.12	0.22	0.59						0.55	0.13
Uniform Delay, d1		14.2	12.5	13.0	15.7						15.5	12.6
Progression Factor		0.41	0.10	1.00	1.00						0.19	0.08
Incremental Delay, d2		1.6	0.6	1.6	3.7						0.9	0.5
Delay (s)		7.4	1.8	14.7	19.4						3.8	1.5
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.2			18.8			0.0			3.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1247	148	314	1619	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1355	161	341	1760	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	90	120	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1355	71	221	1760	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	2489				
v/s Ratio Prot					c0.23			c0.26				
v/s Ratio Perm						0.06	0.20					
v/c Ratio					0.61	0.16	0.55	0.71				
Uniform Delay, d1					22.2	18.1	22.6	24.4				
Progression Factor					1.00	1.00	0.39	0.57				
Incremental Delay, d2					1.3	0.8	2.3	0.8				
Delay (s)					23.5	18.9	11.1	14.5				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			23.0			14.0			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	888	64	56	395	0	0	662	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4486		1500	3185			3185	1154
Flt Permitted				0.95	1.00		0.33	1.00			1.00	1.00
Satd. Flow (perm)				1346	4486		522	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	965	70	61	429	0	0	720	164
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	93	1023	0	61	429	0	0	720	161
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1538		298	1820			1820	659
v/s Ratio Prot					c0.23			0.13			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.20	0.67		0.20	0.24			0.40	0.24
Uniform Delay, d1				16.2	19.6		7.3	7.4			8.3	7.5
Progression Factor				0.30	0.26		0.26	0.28			0.10	0.08
Incremental Delay, d2				0.9	2.0		1.4	0.3			0.4	0.5
Delay (s)				5.7	7.1		3.3	2.3			1.2	1.1
Level of Service				A	A		A	A			A	A
Approach Delay (s)		0.0			7.0			2.5			1.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	27	865	41	66	555	0	0	320	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5680			3168			1616	1144
Flt Permitted					1.00			0.88			1.00	1.00
Satd. Flow (perm)					5680			2801			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	29	940	45	72	603	0	0	348	83
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	53
Lane Group Flow (vph)	0	0	0	0	1004	0	0	675	0	0	348	30
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1785			1543			593	420
v/s Ratio Prot								c0.04			c0.22	
v/s Ratio Perm					0.18			0.19				0.03
v/c Ratio					0.56			0.44			0.59	0.07
Uniform Delay, d1					20.0			9.7			17.9	14.4
Progression Factor					0.80			1.32			1.26	5.24
Incremental Delay, d2					1.2			0.8			3.8	0.3
Delay (s)					17.1			13.7			26.3	75.8
Level of Service					B			B			C	E
Approach Delay (s)		0.0			17.1			13.7			35.8	
Approach LOS		A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	633	0	0	0	0	0	724	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5621						4577	1321
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5621						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	688	0	0	0	0	0	787	321
RTOR Reduction (vph)	0	0	0	0	32	0	0	0	0	0	0	55
Lane Group Flow (vph)	0	0	0	0	742	0	0	0	0	0	787	266
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2192						2190	632
v/s Ratio Prot											0.17	
v/s Ratio Perm					0.13							c0.20
v/c Ratio					0.34						0.36	0.42
Uniform Delay, d1					15.0						11.5	11.9
Progression Factor					1.00						0.30	0.14
Incremental Delay, d2					0.4						0.4	1.8
Delay (s)					15.4						3.9	3.4
Level of Service					B						A	A
Approach Delay (s)		0.0			15.4			0.0			3.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	483	1252	0	0	0	0	0	2031	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	999	5272						4577	1025			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	999	5272						4577	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	1361	0	0	0	0	0	2208	172	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	344	1506	0	0	0	0	0	2208	159	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1675						2583	578			
v/s Ratio Prot								c0.48				
v/s Ratio Perm	c0.34	0.29							0.16			
v/c Ratio	1.08	0.90						0.85	0.28			
Uniform Delay, d1	30.7	29.3						16.5	10.1			
Progression Factor	1.00	1.00						1.83	2.07			
Incremental Delay, d2	74.8	8.1						2.9	0.9			
Delay (s)	105.5	37.4						33.2	21.8			
Level of Service	F	D						C	C			
Approach Delay (s)		50.5			0.0			32.3			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1430	175	0	0	0	0	0	0	183	647	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5673								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5673								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1554	190	0	0	0	0	0	0	199	703	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1720	0	0	0	0	0	0	0	187	703	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2206								785	2845	
v/s Ratio Prot		c0.30									c0.12	
v/s Ratio Perm										0.12		
v/c Ratio		0.78								0.24	0.25	
Uniform Delay, d1		24.1								13.1	13.2	
Progression Factor		1.58								0.58	0.63	
Incremental Delay, d2		1.9								0.6	0.2	
Delay (s)		40.1								8.2	8.4	
Level of Service		D								A	A	
Approach Delay (s)		40.1			0.0			0.0			8.4	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	980	57	0	0	0	0	352	91	54	204	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.94			1.00	
Flpb, ped/bikes		0.97						1.00			0.97	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5476						2911			3071	
Flt Permitted		0.99						1.00			0.81	
Satd. Flow (perm)		5476						2911			2520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	1065	62	0	0	0	0	383	99	59	222	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	1288	0	0	0	0	0	464	0	0	281	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2659						1247			1080	
v/s Ratio Prot								c0.16				
v/s Ratio Perm		0.24									0.11	
v/c Ratio		0.48						0.37			0.26	
Uniform Delay, d1		12.1						13.6			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.6						0.9			0.6	
Delay (s)		12.7						14.4			19.8	
Level of Service		B						B			B	
Approach Delay (s)		12.7			0.0			14.4			19.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1217	235	0	0	0	0	0	0	177	894	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1323	255	0	0	0	0	0	0	192	972	0
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1323	228	0	0	0	0	0	0	170	972	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.29									c0.21	
v/s Ratio Perm			0.18							0.11		
v/c Ratio		0.66	0.41							0.27	0.51	
Uniform Delay, d1		15.6	13.5							13.4	15.1	
Progression Factor		1.31	1.35							0.33	0.43	
Incremental Delay, d2		1.7	2.1							1.0	0.9	
Delay (s)		22.0	20.3							5.4	7.4	
Level of Service		C	C							A	A	
Approach Delay (s)		21.7			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1146	0	0	0	0	0	1158	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4469						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4469						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1246	0	0	0	0	0	1259	82	0	0	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1490	0	0	0	0	0	1259	67	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1602						2308	678			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.33							0.05			
v/c Ratio		0.93						0.55	0.10			
Uniform Delay, d1		21.6						11.9	9.1			
Progression Factor		0.42						1.82	2.26			
Incremental Delay, d2		9.1						0.5	0.2			
Delay (s)		18.1						22.1	20.6			
Level of Service		B						C	C			
Approach Delay (s)		18.1			0.0			22.0			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	963	51	0	0	0	0	439	70	156	431	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4447						3043		1593	3185	
Flt Permitted		1.00						1.00		0.39	1.00	
Satd. Flow (perm)		4447						3043		660	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	1047	55	0	0	0	0	477	76	170	468	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1150	0	0	0	0	0	548	0	170	468	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1905						1478		320	1547	
v/s Ratio Prot								0.18			0.15	
v/s Ratio Perm		0.26								c0.26		
v/c Ratio		0.60						0.37		0.53	0.30	
Uniform Delay, d1		15.4						11.3		12.5	10.9	
Progression Factor		1.65						1.88		1.90	2.00	
Incremental Delay, d2		0.6						0.7		5.9	0.5	
Delay (s)		26.0						21.9		29.6	22.2	
Level of Service		C						C		C	C	
Approach Delay (s)		26.0			0.0			21.9			24.2	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1044	61	0	0	0	0	544	82	0	341	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.97			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4410						3042			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4410						3042			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1135	66	0	0	0	0	591	89	0	371	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	61	1192	0	0	0	0	0	678	0	0	371	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1839						1325			704	
v/s Ratio Prot		c0.27						0.22			c0.23	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.65						0.51			0.53	
Uniform Delay, d1	12.5	16.3						14.3			14.5	
Progression Factor	0.34	0.29						0.31			0.38	
Incremental Delay, d2	0.4	1.5						1.2			2.3	
Delay (s)	4.6	6.2						5.6			7.8	
Level of Service	A	A						A			A	
Approach Delay (s)		6.2			0.0			5.6			7.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	791	61	0	0	0	0	721	88	109	609	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1545	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.30	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	487	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	860	66	0	0	0	0	784	96	118	662	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	111	914	0	0	0	0	0	784	79	118	662	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	244	1597	
v/s Ratio Prot		c0.20						c0.25			0.21	
v/s Ratio Perm	0.08								0.06	0.24		
v/c Ratio	0.22	0.58						0.49	0.13	0.48	0.41	
Uniform Delay, d1	15.8	18.3						11.5	9.3	11.5	11.0	
Progression Factor	1.02	1.11						0.26	0.08	1.00	1.00	
Incremental Delay, d2	0.8	1.2						0.8	0.3	6.7	0.8	
Delay (s)	16.8	21.5						3.8	1.0	18.2	11.8	
Level of Service	B	C						A	A	B	B	
Approach Delay (s)		21.0			0.0			3.5			12.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1110	103	63	852	175	228	1620	167	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1586	4577	1380	1578	4577	1177	1449	4577	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	379	4577	1380	488	4577	1177	1449	4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	1207	112	68	926	190	248	1761	182	0	0	0
RTOR Reduction (vph)	0	0	44	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	240	1207	68	68	926	77	248	1761	147	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	197	1251	832	73	691	177	859	2715	798			
v/s Ratio Prot	c0.09	0.26	0.03		0.20		0.10	c0.38				
v/s Ratio Perm	c0.24		0.02	0.14		0.07	0.08		0.11			
v/c Ratio	1.22	0.96	0.08	0.93	1.34	0.44	0.29	0.65	0.18			
Uniform Delay, d1	31.0	32.3	7.4	37.7	38.2	34.7	9.0	12.1	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.65	1.58	2.03			
Incremental Delay, d2	135.3	18.3	0.0	87.4	162.7	7.6	0.1	0.9	0.4			
Delay (s)	166.3	50.6	7.5	125.2	200.9	42.3	14.9	19.9	17.3			
Level of Service	F	D	A	F	F	D	B	B	B			
Approach Delay (s)		65.3			171.1			19.1			0.0	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	70.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	909	100	42	824	0	0	0	0	78	462	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.18	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	304	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	988	109	46	896	0	0	0	0	85	502	121
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	988	47	46	896	0	0	0	0	0	587	82
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	130	1365						2429	604
v/s Ratio Prot		c0.31			0.28							
v/s Ratio Perm			0.03	0.15							0.10	0.06
v/c Ratio		0.72	0.08	0.35	0.66						0.24	0.14
Uniform Delay, d1		16.6	11.8	13.5	15.9						12.9	12.3
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		3.4	0.2	7.4	2.5						0.2	0.5
Delay (s)		19.9	12.1	20.9	18.4						13.2	12.8
Level of Service		B	B	C	B						B	B
Approach Delay (s)		19.2			18.5			0.0			13.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	979	58	17	703	74	79	279	38	30	146	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	0.94	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1496	3128		1593	3043			2999			2809	
Flt Permitted	0.26	1.00		0.15	1.00			0.81			0.87	
Satd. Flow (perm)	406	3128		257	3043			2462			2462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	1064	63	18	764	80	86	303	41	33	159	96
RTOR Reduction (vph)	0	4	0	0	8	0	0	8	0	0	30	0
Lane Group Flow (vph)	158	1123	0	18	836	0	0	422	0	0	258	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	203	1570		129	1527			989			989	
v/s Ratio Prot		0.36			0.27							
v/s Ratio Perm	c0.39			0.07				c0.17			0.10	
v/c Ratio	0.78	0.71		0.14	0.55			0.43			0.26	
Uniform Delay, d1	20.4	19.3		13.3	17.1			21.6			20.0	
Progression Factor	1.00	1.00		0.58	0.51			1.00			1.00	
Incremental Delay, d2	24.9	2.8		2.1	1.3			1.3			0.6	
Delay (s)	45.3	22.2		9.8	10.1			22.9			20.6	
Level of Service	D	C		A	B			C			C	
Approach Delay (s)		25.0			10.1			22.9			20.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	742	97	51	589	0	0	0	0	199	673	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		350	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	807	105	55	640	0	0	0	0	216	732	151
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	902	0	55	640	0	0	0	0	216	732	68
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		157	1433					716	2059	641
v/s Ratio Prot		c0.29			0.20						c0.16	
v/s Ratio Perm				0.16						0.14		0.05
v/c Ratio		0.64		0.35	0.45					0.30	0.36	0.11
Uniform Delay, d1		21.3		18.0	18.9					17.5	18.0	15.9
Progression Factor		0.31		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.6		6.1	1.0					1.1	0.5	0.3
Delay (s)		8.2		24.0	19.9					18.6	18.5	16.2
Level of Service		A		C	B					B	B	B
Approach Delay (s)		8.2			20.3			0.0			18.2	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	856	0	0	578	86	99	1332	70	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.32	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	530	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	930	0	0	628	93	108	1448	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	44	0	0	0
Lane Group Flow (vph)	154	930	0	0	717	0	0	1556	32	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	243	1460			1432			1824	570			
v/s Ratio Prot		c0.29			0.23							
v/s Ratio Perm	0.29							0.34	0.02			
v/c Ratio	0.63	0.64			0.50			0.85	0.06			
Uniform Delay, d1	14.5	14.5			13.3			19.1	12.9			
Progression Factor	1.00	1.00			0.68			0.55	0.80			
Incremental Delay, d2	12.0	2.1			1.2			3.9	0.1			
Delay (s)	26.4	16.6			10.2			14.4	10.4			
Level of Service	C	B			B			B	B			
Approach Delay (s)		18.0			10.2			14.2			0.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	744	51	53	603	71	44	379	32	49	363	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3155		1593	3135		1593	3148		1593	3185	1425
Flt Permitted	0.30	1.00		0.24	1.00		0.48	1.00		0.44	1.00	1.00
Satd. Flow (perm)	506	3155		405	3135		805	3148		744	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	809	55	58	655	77	48	412	35	53	395	85
RTOR Reduction (vph)	0	7	0	0	13	0	0	9	0	0	0	49
Lane Group Flow (vph)	78	857	0	58	719	0	48	438	0	53	395	36
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	242	1509		193	1500		345	1349		318	1365	610
v/s Ratio Prot		c0.27			0.23			c0.14			0.12	
v/s Ratio Perm	0.15			0.14			0.06			0.07		0.03
v/c Ratio	0.32	0.57		0.30	0.48		0.14	0.32		0.17	0.29	0.06
Uniform Delay, d1	11.3	13.1		11.1	12.3		12.2	13.3		12.3	13.0	11.7
Progression Factor	1.85	1.74		1.02	1.08		1.46	1.49		0.46	0.52	0.38
Incremental Delay, d2	2.8	1.3		3.6	1.0		0.8	0.6		1.1	0.5	0.2
Delay (s)	23.6	23.9		14.9	14.3		18.6	20.4		6.8	7.3	4.6
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		23.9			14.3			20.2			6.8	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	751	43	51	600	34	48	582	70	0	293	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	0.90
Flpb, ped/bikes	0.97	1.00		0.97	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1547	3135		1549	3143			3160	1330		1616	1229
Flt Permitted	0.32	1.00		0.24	1.00			0.90	1.00		1.00	1.00
Satd. Flow (perm)	527	3135		384	3143			2865	1330		1616	1229
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	816	47	55	652	37	52	633	76	0	318	107
RTOR Reduction (vph)	0	6	0	0	6	0	0	0	32	0	0	52
Lane Group Flow (vph)	46	857	0	55	683	0	0	685	44	0	318	55
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	225	1343		164	1347			1227	570		692	526
v/s Ratio Prot		c0.27			0.22						0.20	
v/s Ratio Perm	0.09			0.14				c0.24	0.03			0.04
v/c Ratio	0.20	0.64		0.34	0.51			0.56	0.08		0.46	0.10
Uniform Delay, d1	12.5	15.7		13.3	14.6			15.0	11.8		14.2	12.0
Progression Factor	1.52	1.56		1.49	1.55			0.45	0.27		1.58	2.96
Incremental Delay, d2	1.8	2.0		5.3	1.3			1.6	0.2		1.9	0.3
Delay (s)	20.8	26.6		25.1	24.0			8.4	3.4		24.4	35.7
Level of Service	C	C		C	C			A	A		C	D
Approach Delay (s)		26.3			24.1			7.9			27.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	593	83	29	380	40	61	719	78	76	480	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3127		1593	3140		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.25	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3127		624	3140		422	3185	1425	425	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	645	90	32	413	43	66	782	85	83	522	135
RTOR Reduction (vph)	0	15	0	0	11	0	0	0	52	0	0	83
Lane Group Flow (vph)	122	720	0	32	445	0	66	782	33	83	522	52
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1460		211	1063		162	1228	549	163	646	549
v/s Ratio Prot	c0.08	c0.23			0.14			0.25			c0.31	
v/s Ratio Perm				0.05			0.16		0.02	0.20		0.04
v/c Ratio	0.98	0.49		0.15	0.42		0.41	0.64	0.06	0.51	0.81	0.09
Uniform Delay, d1	32.2	12.9		16.1	17.8		15.7	17.5	13.5	16.4	19.2	13.7
Progression Factor	0.42	1.13		1.00	1.00		0.65	0.64	0.44	1.41	1.42	4.08
Incremental Delay, d2	64.5	1.0		1.5	1.2		6.7	2.3	0.2	10.1	9.7	0.3
Delay (s)	77.9	15.5		17.7	19.1		16.8	13.5	6.1	33.3	37.0	56.3
Level of Service	E	B		B	B		B	B	A	C	D	E
Approach Delay (s)		24.4			19.0			13.0			40.1	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	23	23	51	34	72	37	1909	9	9	164	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1425	1593	3137	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1425	165	3137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	25	25	55	37	78	40	2075	10	10	178	20
RTOR Reduction (vph)	0	0	20	0	0	73	0	0	4	0	7	0
Lane Group Flow (vph)	30	25	5	55	37	5	40	2075	6	10	191	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Effective Green, g (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Actuated g/C Ratio	0.17	0.15	0.21	0.08	0.06	0.06	0.06	0.57	0.57	0.45	0.45	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	256	304	125	198	88	95	2598	809	74	1418	
v/s Ratio Prot	0.01	c0.01	0.00	c0.03	0.01		0.03	c0.45			0.06	
v/s Ratio Perm			0.00			0.00			0.00	0.06		
v/c Ratio	0.06	0.10	0.02	0.44	0.19	0.06	0.42	0.80	0.01	0.14	0.13	
Uniform Delay, d1	31.3	32.7	28.0	39.6	40.0	39.7	40.8	15.4	8.4	14.4	14.4	
Progression Factor	1.00	1.00	1.00	0.77	0.76	1.00	1.00	1.00	1.00	1.19	1.24	
Incremental Delay, d2	0.0	0.2	0.0	2.5	0.5	0.3	3.0	2.7	0.0	3.6	0.2	
Delay (s)	31.4	32.9	28.0	32.8	31.1	40.0	43.8	18.1	8.5	20.8	18.0	
Level of Service	C	C	C	C	C	D	D	B	A	C	B	
Approach Delay (s)		30.8			35.7			18.5			18.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	9	49	232	0	0	0	0	0	433	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1450	1593	3185						4577	1425
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1450	1593	3185						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	10	53	252	0	0	0	0	0	471	90
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	0	0	4	53	252	0	0	0	0	0	471	36
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			35.4	5.1	44.0						36.1	36.1
Effective Green, g (s)			35.4	5.1	44.0						36.1	36.1
Actuated g/C Ratio			0.39	0.06	0.49						0.40	0.40
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			570	90	1557						1835	571
v/s Ratio Prot				c0.03	c0.08						c0.10	
v/s Ratio Perm			0.00									0.03
v/c Ratio			0.01	0.59	0.16						0.26	0.06
Uniform Delay, d1			16.6	41.4	12.8						18.0	16.6
Progression Factor			1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2			0.0	9.5	0.2						0.3	0.2
Delay (s)			16.6	50.9	13.0						18.3	16.8
Level of Service			B	D	B						B	B
Approach Delay (s)		16.6			19.6			0.0			18.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	222	102	19	219	0	0	158	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.96			1.00			0.97	
Flt Protected					0.99			1.00			1.00	
Satd. Flow (prot)					3019			3172			3095	
Flt Permitted					0.99			0.93			1.00	
Satd. Flow (perm)					3019			2958			3095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	50	241	111	21	238	0	0	172	36
RTOR Reduction (vph)	0	0	0	0	57	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	345	0	0	259	0	0	194	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					17.2			43.6			43.6	
Effective Green, g (s)					17.2			43.6			43.6	
Actuated g/C Ratio					0.25			0.62			0.62	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					741			1842			1927	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.11			c0.09				
v/c Ratio					0.47			0.14			0.10	
Uniform Delay, d1					22.5			5.5			5.3	
Progression Factor					1.14			1.00			1.00	
Incremental Delay, d2					2.1			0.2			0.1	
Delay (s)					27.7			5.6			5.4	
Level of Service					C			A			A	
Approach Delay (s)		0.0			27.7			5.6			5.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	81	236	0	0	0	0	0	675	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.89
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	3185						4577	1265
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	3185						4577	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	88	257	0	0	0	0	0	734	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	0	0	0	88	257	0	0	0	0	0	734	31
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	1146						2314	639
v/s Ratio Prot					c0.08						c0.16	
v/s Ratio Perm				0.06								0.02
v/c Ratio				0.17	0.22						0.32	0.05
Uniform Delay, d1				15.3	15.6						10.2	8.8
Progression Factor				0.50	0.52						1.00	1.00
Incremental Delay, d2				0.7	0.4						0.4	0.1
Delay (s)				8.4	8.5						10.5	8.9
Level of Service				A	A						B	A
Approach Delay (s)		0.0			8.5			0.0			10.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	227	64	78	1420	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3185	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3185	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	247	70	85	1543	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	247	54	0	1614	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1192	533		2243				
v/s Ratio Prot					c0.08							
v/s Ratio Perm						0.04		0.35				
v/c Ratio					0.21	0.10		0.72				
Uniform Delay, d1					14.9	14.2		14.0				
Progression Factor					1.59	1.86		1.00				
Incremental Delay, d2					0.4	0.4		2.0				
Delay (s)					24.0	26.9		16.0				
Level of Service					C	C		B				
Approach Delay (s)		0.0			24.6			16.0			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	25	213	37	27	405	0	0	457	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.93
Flpb, ped/bikes				0.93	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1488	3099		1549	3185			3185	1328
Flt Permitted				0.95	1.00		0.45	1.00			1.00	1.00
Satd. Flow (perm)				1488	3099		738	3185			3185	1328
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	27	232	40	29	440	0	0	497	43
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	27	252	0	29	440	0	0	497	26
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				21.0	21.0		43.0	43.0			43.0	43.0
Effective Green, g (s)				21.0	21.0		43.0	43.0			43.0	43.0
Actuated g/C Ratio				0.30	0.30		0.61	0.61			0.61	0.61
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				446	929		453	1956			1956	815
v/s Ratio Prot					c0.08			0.14			c0.16	
v/s Ratio Perm				0.02			0.04					0.02
v/c Ratio				0.06	0.27		0.06	0.22			0.25	0.03
Uniform Delay, d1				17.5	18.7		5.4	6.0			6.2	5.3
Progression Factor				0.54	0.46		1.00	1.00			0.70	0.33
Incremental Delay, d2				0.3	0.7		0.3	0.3			0.3	0.1
Delay (s)				9.7	9.4		5.7	6.3			4.6	1.8
Level of Service				A	A		A	A			A	A
Approach Delay (s)		0.0			9.4			6.3			4.4	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	178	33	70	725	0	0	385	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.82
Flpb, ped/bikes					0.93	1.00	0.92	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					2934	984	1470	3185			1616	1122
Flt Permitted					0.99	1.00	0.42	1.00			1.00	1.00
Satd. Flow (perm)					2934	984	656	3185			1616	1122
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	193	36	76	788	0	0	418	80
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	36
Lane Group Flow (vph)	0	0	0	0	236	13	76	788	0	0	418	45
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					1089	365	323	1569			796	552
v/s Ratio Prot								0.25			c0.26	
v/s Ratio Perm					0.08	0.01	0.12					0.04
v/c Ratio					0.22	0.04	0.24	0.50			0.53	0.08
Uniform Delay, d1					15.0	14.0	10.2	12.0			12.1	9.4
Progression Factor					1.40	1.87	1.00	1.00			1.26	2.27
Incremental Delay, d2					0.4	0.2	1.7	1.2			2.3	0.3
Delay (s)					21.5	26.3	11.9	13.1			17.6	21.5
Level of Service					C	C	B	B			B	C
Approach Delay (s)		0.0			22.2			13.0			18.2	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	162	46	60	840	0	0	469	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3071		1593	3185			3110	
Flt Permitted					0.99		0.39	1.00			1.00	
Satd. Flow (perm)					3071		658	3185			3110	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	176	50	65	913	0	0	510	95
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	0	245	0	65	913	0	0	583	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					22.0		42.0	42.0			42.0	
Effective Green, g (s)					22.0		42.0	42.0			42.0	
Actuated g/C Ratio					0.31		0.60	0.60			0.60	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					965		394	1911			1866	
v/s Ratio Prot								c0.29			0.19	
v/s Ratio Perm					0.08		0.10					
v/c Ratio					0.25		0.16	0.48			0.31	
Uniform Delay, d1					17.9		6.2	7.9			6.9	
Progression Factor					1.00		1.00	1.00			1.59	
Incremental Delay, d2					0.6		0.9	0.9			0.3	
Delay (s)					18.5		7.1	8.7			11.2	
Level of Service					B		A	A			B	
Approach Delay (s)		0.0			18.5			8.6			11.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	729	197	191	697	101	205	537	214	116	312	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	0.99	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1507	3185	1097	1584	4383		1541	3185	1229	1484	3045	
Flt Permitted	0.31	1.00	1.00	0.19	1.00		0.44	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	499	3185	1097	317	4383		712	3185	1229	675	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	792	214	208	758	110	223	584	233	126	339	54
RTOR Reduction (vph)	0	0	141	0	21	0	0	0	15	0	14	0
Lane Group Flow (vph)	211	792	73	208	847	0	223	584	218	126	379	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1079	371	241	1972		350	1362	621	228	1031	
v/s Ratio Prot		0.25		c0.07	0.19		c0.04	0.18	0.03		0.12	
v/s Ratio Perm	c0.42		0.07	0.32			c0.24		0.15	0.19		
v/c Ratio	1.25	0.73	0.20	0.86	0.43		0.64	0.43	0.35	0.55	0.37	
Uniform Delay, d1	29.8	26.2	21.1	18.6	16.9		19.7	18.0	13.4	24.2	22.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	151.4	4.4	1.2	25.8	0.7		3.8	1.0	0.3	9.3	1.0	
Delay (s)	181.1	30.6	22.2	44.4	17.6		23.5	19.0	13.7	33.5	23.5	
Level of Service	F	C	C	D	B		C	B	B	C	C	
Approach Delay (s)		55.2			22.7			18.8			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	677	127	230	838	459	27	547	122	48	668	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1165	3090	3185	1230	1472	3185	1425	1539	3185	1132
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	290	3185	1165	3090	3185	1230	253	3185	1425	398	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	736	138	250	911	499	29	595	133	52	726	142
RTOR Reduction (vph)	0	0	94	0	0	40	0	0	118	0	0	55
Lane Group Flow (vph)	260	736	44	250	911	459	29	595	15	52	726	87
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	44.1	32.1	32.1	12.9	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	44.1	32.1	32.1	12.9	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.13	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	283	1022	373	398	1369	528	61	780	142	97	780	413
v/s Ratio Prot	c0.11	0.23		0.08	0.29			0.19	0.01		c0.23	0.03
v/s Ratio Perm	c0.29		0.04			c0.37	0.11			0.13		0.05
v/c Ratio	0.92	0.72	0.12	0.63	0.67	0.87	0.48	0.76	0.11	0.54	0.93	0.21
Uniform Delay, d1	20.7	30.0	24.0	41.3	22.8	25.9	32.3	35.1	40.9	32.8	36.9	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.6	4.4	0.6	3.1	1.2	14.1	24.3	7.0	0.3	19.6	19.2	0.3
Delay (s)	53.3	34.4	24.6	44.4	24.0	40.0	56.5	42.0	41.3	52.4	56.1	22.1
Level of Service	D	C	C	D	C	D	E	D	D	D	E	C
Approach Delay (s)		37.5			31.9			42.4			50.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	786	40	64	906	603	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2381
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2381
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	854	43	70	985	655	951
RTOR Reduction (vph)	0	25	0	0	0	17
Lane Group Flow (vph)	854	18	70	985	655	934
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	37.2	37.2	15.1	55.8	24.4	39.5
Effective Green, g (s)	37.2	37.2	15.1	55.8	24.4	39.5
Actuated g/C Ratio	0.41	0.41	0.17	0.62	0.27	0.44
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1316	433	267	1974	837	1044
v/s Ratio Prot	c0.27		0.04	0.31	0.21	c0.15
v/s Ratio Perm		0.02				0.24
v/c Ratio	0.65	0.04	0.26	0.50	0.78	0.89
Uniform Delay, d1	21.2	15.8	32.6	9.4	30.3	23.3
Progression Factor	1.00	1.00	0.64	1.98	1.00	1.00
Incremental Delay, d2	2.5	0.2	0.4	0.7	4.8	10.0
Delay (s)	23.7	15.9	21.1	19.3	35.2	33.3
Level of Service	C	B	C	B	D	C
Approach Delay (s)	23.3			19.5	34.1	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	988	31	33	610	61	120	560	43	85	783	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	3185	1143	1535	3185	1196	1593	3132		1576	3185	976
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.95	1.00		0.39	1.00	1.00
Satd. Flow (perm)	323	3185	1143	320	3185	1196	1593	3132		646	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1074	34	36	663	66	130	609	47	92	851	157
RTOR Reduction (vph)	0	0	20	0	0	49	0	6	0	0	0	108
Lane Group Flow (vph)	259	1074	14	36	663	17	130	650	0	92	851	49
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	36.8	36.8	36.8	23.7	23.7	23.7	11.6	34.8		32.8	28.0	28.0
Effective Green, g (s)	36.8	36.8	36.8	23.7	23.7	23.7	11.6	34.8		32.8	28.0	28.0
Actuated g/C Ratio	0.41	0.41	0.41	0.26	0.26	0.26	0.13	0.39		0.36	0.31	0.31
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	273	1302	467	84	838	314	205	1211		285	990	303
v/s Ratio Prot	c0.11	0.34			0.21		c0.08	0.21		0.02	c0.27	
v/s Ratio Perm	c0.28		0.01	0.11		0.01				0.10		0.05
v/c Ratio	0.95	0.82	0.03	0.43	0.79	0.06	0.63	0.54		0.32	0.86	0.16
Uniform Delay, d1	20.9	23.7	15.9	27.5	30.8	24.8	37.2	21.4		19.3	29.2	22.5
Progression Factor	1.09	1.09	1.00	0.91	0.98	1.00	0.69	1.67		1.00	1.00	1.00
Incremental Delay, d2	30.1	3.9	0.1	12.9	6.4	0.3	5.3	0.4		0.7	7.6	0.3
Delay (s)	52.9	29.8	16.0	38.0	36.7	25.1	31.0	36.0		20.0	36.7	22.7
Level of Service	D	C	B	D	D	C	C	D		B	D	C
Approach Delay (s)		33.9			35.7			35.2			33.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1036	79	43	676	76	58	548	121	78	407	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1573	3185	1071	1512	3185	1050	1531	4288		1497	2935	
Flt Permitted	0.25	1.00	1.00	0.25	1.00	1.00	0.28	1.00		0.28	1.00	
Satd. Flow (perm)	413	3185	1071	402	3185	1050	449	4288		442	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1126	86	47	735	83	63	596	132	85	442	180
RTOR Reduction (vph)	0	0	32	0	0	48	0	28	0	0	49	0
Lane Group Flow (vph)	245	1126	54	47	735	35	63	700	0	85	573	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1886	634	169	1344	443	144	1381		142	945	
v/s Ratio Prot	0.08	c0.35			0.23			0.16			c0.20	
v/s Ratio Perm	c0.28		0.05	0.12		0.03	0.14			0.19		
v/c Ratio	0.61	0.60	0.08	0.28	0.55	0.08	0.44	0.51		0.60	0.61	
Uniform Delay, d1	10.6	11.6	7.9	17.0	19.5	15.5	24.1	24.7		25.6	25.7	
Progression Factor	1.45	1.66	2.29	0.56	0.61	0.72	1.09	1.06		1.00	1.00	
Incremental Delay, d2	2.0	1.1	0.2	3.6	1.4	0.3	9.2	1.3		17.3	2.9	
Delay (s)	17.3	20.3	18.3	13.2	13.3	11.6	35.3	27.5		42.9	28.6	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		19.6			13.1			28.2			30.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1049	50	35	637	5	0	0	0	84	456	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1571	3185	1027	1514	3177						4449	1264
Flt Permitted	0.27	1.00	1.00	0.22	1.00						0.99	1.00
Satd. Flow (perm)	454	3185	1027	346	3177						4449	1264
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1140	54	38	692	5	0	0	0	91	496	177
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	0	0	0	27
Lane Group Flow (vph)	107	1140	29	38	696	0	0	0	0	0	587	150
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Effective Green, g (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	342	1691	545	140	1291						1557	557
v/s Ratio Prot	0.03	c0.36			0.22							0.02
v/s Ratio Perm	0.14		0.03	0.11							0.13	0.09
v/c Ratio	0.31	0.67	0.05	0.27	0.54						0.38	0.27
Uniform Delay, d1	11.5	15.4	10.2	17.8	20.3						21.9	15.9
Progression Factor	1.17	1.02	2.10	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	1.8	0.1	4.7	1.6						0.7	0.3
Delay (s)	13.9	17.5	21.5	22.5	21.9						22.6	16.2
Level of Service	B	B	C	C	C						C	B
Approach Delay (s)		17.3			21.9			0.0			21.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	9	24	27	43	97	19	403	16	11	887	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2613		1593	2505		1576	3149		1471	3185	1341
Flt Permitted	0.95	1.00		0.95	1.00		0.22	1.00		0.48	1.00	1.00
Satd. Flow (perm)	1593	2613		1593	2505		371	3149		736	3185	1341
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	10	26	29	47	105	21	438	17	12	964	95
RTOR Reduction (vph)	0	18	0	0	84	0	0	2	0	0	0	25
Lane Group Flow (vph)	107	18	0	29	68	0	21	453	0	12	964	70
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Effective Green, g (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Actuated g/C Ratio	0.11	0.29		0.02	0.20		0.52	0.52		0.52	0.52	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	760		35	512		194	1647		385	1666	847
v/s Ratio Prot	c0.07	0.01		0.02	c0.03			0.14			c0.30	0.01
v/s Ratio Perm							0.06			0.02		0.04
v/c Ratio	0.62	0.02		0.83	0.13		0.11	0.27		0.03	0.58	0.08
Uniform Delay, d1	38.3	22.8		43.8	29.3		10.8	11.9		10.4	14.7	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.14	1.26		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.0		84.5	0.1		1.1	0.4		0.2	1.5	0.0
Delay (s)	44.8	22.8		128.3	29.4		13.4	15.4		10.5	16.1	6.5
Level of Service	D	C		F	C		B	B		B	B	A
Approach Delay (s)		39.2			45.2			15.3			15.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	658	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.95	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3157		1569	3116		1508	3185	1300
Flt Permitted		1.00	1.00		1.00		0.18	1.00		0.26	1.00	1.00
Satd. Flow (perm)		1676	1277		3157		290	3116		411	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	182	0	323	13	86	715	47	34	937	34
RTOR Reduction (vph)	0	0	15	0	3	0	0	5	0	0	0	21
Lane Group Flow (vph)	0	432	167	0	333	0	86	757	0	34	937	13
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1543		114	1232		162	1259	514
v/s Ratio Prot		c0.26			0.11			0.24			0.29	
v/s Ratio Perm			0.13				c0.30			0.08		0.01
v/c Ratio		0.53	0.27		0.22		0.75	0.61		0.21	0.74	0.03
Uniform Delay, d1		15.8	13.5		13.1		23.4	21.7		17.9	23.3	16.6
Progression Factor		1.00	1.00		0.77		0.90	0.88		0.44	0.67	0.33
Incremental Delay, d2		2.4	1.1		0.3		34.1	2.1		1.9	2.6	0.1
Delay (s)		18.3	14.6		10.3		55.1	21.3		9.8	18.3	5.6
Level of Service		B	B		B		E	C		A	B	A
Approach Delay (s)		17.2			10.3			24.7			17.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰	↑↱			↑	↱
Volume (vph)	0	566	77	0	465	40	107	466	80	0	428	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	0.88
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1616	1212
Flt Permitted		1.00	1.00		1.00	1.00	0.25	1.00			1.00	1.00
Satd. Flow (perm)		1676	1013		1676	1346	422	3025			1616	1212
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	615	84	0	505	43	116	507	87	0	465	47
RTOR Reduction (vph)	0	0	45	0	0	23	0	17	0	0	0	33
Lane Group Flow (vph)	0	615	39	0	505	20	116	577	0	0	465	14
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		41.8	41.8		41.8	41.8	37.8	37.8			27.7	27.7
Effective Green, g (s)		41.8	41.8		41.8	41.8	37.8	37.8			27.7	27.7
Actuated g/C Ratio		0.46	0.46		0.46	0.46	0.42	0.42			0.31	0.31
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		778	470		778	625	238	1270			497	373
v/s Ratio Prot		c0.37			0.30		0.03	c0.19			c0.29	
v/s Ratio Perm			0.04			0.01	0.18					0.01
v/c Ratio		0.79	0.08		0.65	0.03	0.49	0.45			0.94	0.04
Uniform Delay, d1		20.4	13.4		18.5	13.1	30.3	18.7			30.3	21.8
Progression Factor		0.67	0.07		0.24	2.49	0.84	1.01			0.88	3.28
Incremental Delay, d2		7.6	0.3		2.9	0.1	1.5	0.2			22.7	0.0
Delay (s)		21.3	1.2		7.3	32.7	27.0	19.1			49.3	71.6
Level of Service		C	A		A	C	C	B			D	E
Approach Delay (s)		18.9			9.3			20.4			51.3	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	463	169	54	509	0	0	0	0	16	493	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1499	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.31	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	483	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	503	184	59	553	0	0	0	0	17	536	27
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	503	165	59	553	0	0	0	0	17	536	12
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	215	748					614	1433	275
v/s Ratio Prot		0.30			c0.33						c0.17	
v/s Ratio Perm			0.15	0.12						0.01		0.02
v/c Ratio		0.67	0.33	0.27	0.74					0.03	0.37	0.04
Uniform Delay, d1		19.7	16.2	15.7	20.6					13.8	16.4	13.9
Progression Factor		1.28	1.56	1.00	1.00					0.22	0.20	0.00
Incremental Delay, d2		3.2	1.2	3.1	6.5					0.1	0.7	0.3
Delay (s)		28.5	26.3	18.8	27.0					3.1	4.0	0.3
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		27.9			26.2			0.0			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	154	114	23	278	852	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.89	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1420	3185	3185	748
Flt Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	417	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	124	25	302	926	82
RTOR Reduction (vph)	0	46	0	0	0	22
Lane Group Flow (vph)	167	78	25	302	926	60
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.5	19.5	60.8	60.8	60.8	60.8
Effective Green, g (s)	19.5	19.5	60.8	60.8	60.8	60.8
Actuated g/C Ratio	0.22	0.22	0.68	0.68	0.68	0.68
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	408	281	2151	2151	505
v/s Ratio Prot				0.09	c0.29	
v/s Ratio Perm	c0.12	0.04	0.06			0.08
v/c Ratio	0.54	0.19	0.09	0.14	0.43	0.12
Uniform Delay, d1	31.3	28.8	5.0	5.2	6.7	5.1
Progression Factor	1.00	1.00	1.00	1.00	2.36	4.51
Incremental Delay, d2	2.0	0.2	0.6	0.1	0.5	0.4
Delay (s)	33.3	29.0	5.7	5.4	16.3	23.6
Level of Service	C	C	A	A	B	C
Approach Delay (s)	31.5			5.4	16.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1368	165	56	440	0	0	1054	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3092		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3092		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1487	179	61	478	0	0	1146	215
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	103	1656	0	61	478	0	0	1146	202
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1752		74	1167			1167	426
v/s Ratio Prot					c0.54			0.15			c0.36	
v/s Ratio Perm				0.07			0.30					0.17
v/c Ratio				0.13	0.94		0.82	0.41			0.98	0.47
Uniform Delay, d1				9.1	18.2		25.9	21.2			28.2	21.9
Progression Factor				1.27	0.95		1.30	1.33			1.31	1.49
Incremental Delay, d2				0.2	9.5		55.2	0.9			20.3	3.2
Delay (s)				11.8	26.8		88.8	29.2			57.3	35.8
Level of Service				B	C		F	C			E	D
Approach Delay (s)		0.0			25.9			35.9			53.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	232	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.95			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3004			1616	941
Flt Permitted				0.95	1.00	1.00		0.75			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2284			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	1276	85	145	454	0	0	252	92
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	0	41	1276	47	0	599	0	0	252	45
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		951			673	392
v/s Ratio Prot					c0.40						0.16	
v/s Ratio Perm				0.04		0.04		c0.26				0.05
v/c Ratio				0.09	0.84	0.09		0.63			0.37	0.12
Uniform Delay, d1				12.7	20.3	12.7		20.8			18.1	16.1
Progression Factor				0.95	1.19	1.61		0.28			1.00	1.23
Incremental Delay, d2				0.3	4.4	0.2		1.1			0.9	0.4
Delay (s)				12.4	28.5	20.6		7.0			19.2	20.1
Level of Service				B	C	C		A			B	C
Approach Delay (s)		0.0			27.5			7.0			19.4	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	267	842	0	0	0	0	0	765	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	290	915	0	0	0	0	0	832	301
RTOR Reduction (vph)	0	0	0	91	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	199	915	0	0	0	0	0	832	285
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.29						0.18	
v/s Ratio Perm				0.15								c0.25
v/c Ratio				0.42	0.80						0.34	0.47
Uniform Delay, d1				21.8	26.0						11.8	12.9
Progression Factor				1.00	1.00						1.46	1.54
Incremental Delay, d2				2.7	6.0						0.4	2.5
Delay (s)				24.6	32.1						17.6	22.3
Level of Service				C	C						B	C
Approach Delay (s)		0.0			30.3			0.0			18.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	1111	0	0	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1208	0	0	123	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	84	1208	0	0	123	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	55.1	74.6			8.9	
Effective Green, g (s)	55.1	74.6			8.9	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1891	5628			305	
v/s Ratio Prot	0.03	c0.18				
v/s Ratio Perm					c0.04	
v/c Ratio	0.04	0.21			0.40	
Uniform Delay, d1	7.0	1.6			38.1	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.0	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.0	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	939	134	0	0	0	0	1240	303	85	199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.98		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4374		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4374		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1021	146	0	0	0	0	1348	329	92	216	0
RTOR Reduction (vph)	0	0	97	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	100	1021	49	0	0	0	0	1648	0	92	216	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Effective Green, g (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Actuated g/C Ratio	0.34	0.34	0.34					0.45		0.06	0.55	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	377	1941	438					1953		192	927	
v/s Ratio Prot		c0.18						c0.38		c0.03	0.13	
v/s Ratio Perm	0.09		0.04									
v/c Ratio	0.27	0.53	0.11					0.84		0.48	0.23	
Uniform Delay, d1	21.7	24.1	20.6					22.1		40.8	10.3	
Progression Factor	1.02	1.03	1.36					0.47		1.00	1.00	
Incremental Delay, d2	1.7	1.0	0.5					4.0		1.9	0.6	
Delay (s)	23.9	25.7	28.5					14.5		42.7	10.9	
Level of Service	C	C	C					B		D	B	
Approach Delay (s)		25.9			0.0			14.5			20.4	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1292	111	0	0	0	0	695	89	87	869	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.94	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5641						3028		1496	3185	
Flt Permitted		1.00						1.00		0.25	1.00	
Satd. Flow (perm)		5641						3028		389	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1404	121	0	0	0	0	755	97	95	945	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1539	0	0	0	0	0	849	0	95	945	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2381						1480		190	1557	
v/s Ratio Prot								0.28			c0.30	
v/s Ratio Perm		0.27								0.24		
v/c Ratio		0.65						0.57		0.50	0.61	
Uniform Delay, d1		20.7						16.3		15.6	16.7	
Progression Factor		0.77						0.65		0.26	0.13	
Incremental Delay, d2		1.2						1.5		3.7	0.7	
Delay (s)		17.2						12.1		7.7	2.8	
Level of Service		B						B		A	A	
Approach Delay (s)		17.2			0.0			12.1			3.2	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	323	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5374						2736			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5374						2736			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1339	77	0	0	0	0	451	171	0	351	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1556	0	0	0	0	0	619	0	0	351	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2567						1115			658	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.29										
v/c Ratio		0.61						0.56			0.53	
Uniform Delay, d1		17.3						20.4			20.2	
Progression Factor		0.39						0.97			1.13	
Incremental Delay, d2		0.8						1.9			3.0	
Delay (s)		7.6						21.7			25.8	
Level of Service		A						C			C	
Approach Delay (s)		7.6			0.0			21.7			25.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1304	189	0	0	0	0	0	0	286	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.95	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5449									4311	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5449									4311	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1417	205	0	0	0	0	0	0	311	1002	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1594	0	0	0	0	0	0	0	0	1301	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1892	
v/s Ratio Prot		c0.29										
v/s Ratio Perm											0.30	
v/c Ratio		0.64									0.69	
Uniform Delay, d1		18.7									20.3	
Progression Factor		1.37									0.53	
Incremental Delay, d2		1.1									2.0	
Delay (s)		26.7									12.7	
Level of Service		C									B	
Approach Delay (s)		26.7			0.0			0.0			12.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	376	1274	247	0	0	0	0	777	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5489						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5489						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	409	1385	268	0	0	0	0	845	246
RTOR Reduction (vph)	0	0	0	48	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	291	1679	0	0	0	0	0	845	233
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2439						2034	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.39	0.31							c0.25
v/c Ratio				0.87	0.69						0.42	0.56
Uniform Delay, d1				22.7	20.0						17.0	18.5
Progression Factor				1.32	1.25						1.00	1.00
Incremental Delay, d2				23.7	1.5						0.6	5.4
Delay (s)				53.6	26.6						17.7	23.9
Level of Service				D	C						B	C
Approach Delay (s)		0.0			31.0			0.0			19.1	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	934	77	557	1197	0	0	0	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5522		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5522		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1015	84	605	1301	0	0	0	383
RTOR Reduction (vph)	0	0	0	0	11	0	438	0	0	0	0	360
Lane Group Flow (vph)	0	0	0	0	1088	0	167	1301	0	0	0	23
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2018		851	2013				153
v/s Ratio Prot					c0.20		0.05	c0.28				
v/s Ratio Perm												c0.01
v/c Ratio					0.54		0.20	0.65				0.15
Uniform Delay, d1					22.6		25.0	19.7				40.0
Progression Factor					1.06		4.44	1.58				1.00
Incremental Delay, d2					0.9		0.4	1.2				0.5
Delay (s)					24.9		111.3	32.4				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			24.9			57.4			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	779	136	71	666	0	0	792	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.93	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1474	3185			3185	936
Flt Permitted				0.95	1.00		0.27	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		423	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	847	148	77	724	0	0	861	163
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	90	960	0	77	724	0	0	861	152
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		235	1776			1776	522
v/s Ratio Prot					c0.18			0.23			c0.27	
v/s Ratio Perm				0.10			0.18					0.16
v/c Ratio				0.31	0.54		0.33	0.41			0.48	0.29
Uniform Delay, d1				22.3	24.4		10.8	11.4			12.1	10.5
Progression Factor				0.32	0.30		1.15	1.15			1.97	2.10
Incremental Delay, d2				2.6	1.1		3.4	0.6			0.8	1.1
Delay (s)				9.8	8.3		15.7	13.7			24.6	23.2
Level of Service				A	A		B	B			C	C
Approach Delay (s)		0.0			8.4			13.9			24.3	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	862	61	43	412	0	0	335	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5404			3110			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5404			2774			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	937	66	47	448	0	0	364	64
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1034	0	0	495	0	0	364	52
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1402			816	404
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.19			0.18				0.07
v/c Ratio					0.49			0.35			0.45	0.13
Uniform Delay, d1					20.8			13.4			14.2	11.8
Progression Factor					0.50			1.47			1.83	2.15
Incremental Delay, d2					0.8			0.6			1.5	0.6
Delay (s)					11.1			20.3			27.5	25.9
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.1			20.3			27.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	136	647	0	0	0	0	0	855	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	148	703	0	0	0	0	0	929	202
RTOR Reduction (vph)	0	0	0	0	43	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	0	0	808	0	0	0	0	0	929	152
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.20	
v/s Ratio Perm					0.14							0.11
v/c Ratio					0.36						0.40	0.21
Uniform Delay, d1					19.4						13.8	12.3
Progression Factor					1.00						0.46	0.26
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.8						6.7	3.7
Level of Service					B						A	A
Approach Delay (s)		0.0			19.8			0.0			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1485	154	0	0	0	0	0	0	183	1049	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.95	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5462	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1614	167	0	0	0	0	0	0	199	1140	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1614	148	0	0	0	0	0	0	0	1327	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2451	
v/s Ratio Prot		c0.28										
v/s Ratio Perm			0.16								0.24	
v/c Ratio		0.63	0.36								0.54	
Uniform Delay, d1		19.1	16.4								18.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	2.4								0.7	
Delay (s)		20.2	18.8								21.5	
Level of Service		C	B								C	
Approach Delay (s)		20.1			0.0			0.0			21.5	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	553	1085	0	0	0	0	0	1354	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5049						6395				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5049						6395				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	601	1179	0	0	0	0	0	1472	208	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	331	1425	0	0	0	0	0	1663	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2255						2863				
v/s Ratio Prot								c0.26				
v/s Ratio Perm	c0.39	0.28										
v/c Ratio	0.88	0.63						0.58				
Uniform Delay, d1	22.7	19.2						18.5				
Progression Factor	0.47	0.39						0.79				
Incremental Delay, d2	20.3	1.1						0.7				
Delay (s)	31.1	8.6						15.3				
Level of Service	C	A						B				
Approach Delay (s)		12.9			0.0			15.3			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	136	0	0	0	0	721	101	87	743	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.29	1.00	
Satd. Flow (perm)		5664						3185	1425	483	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1096	148	0	0	0	0	784	110	95	808	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	0	1217	0	0	0	0	0	784	99	95	808	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	262	2491	
v/s Ratio Prot		c0.21						c0.25			0.18	
v/s Ratio Perm									0.07	0.20		
v/c Ratio		0.55						0.45	0.13	0.36	0.32	
Uniform Delay, d1		21.4						12.4	10.0	11.6	11.3	
Progression Factor		0.28						0.44	0.44	0.36	0.40	
Incremental Delay, d2		0.8						0.7	0.3	3.5	0.3	
Delay (s)		6.9						6.2	4.8	7.7	4.9	
Level of Service		A						A	A	A	A	
Approach Delay (s)		6.9			0.0			6.0			5.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	941	116	0	0	0	0	466	95	0	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5150						2906			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5150						2906			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	1023	126	0	0	0	0	507	103	0	407	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1280	0	0	0	0	0	605	0	0	407	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1281			712	
v/s Ratio Prot								0.21			c0.25	
v/s Ratio Perm		0.25										
v/c Ratio		0.56						0.47			0.57	
Uniform Delay, d1		18.5						17.8			18.8	
Progression Factor		0.29						1.54			1.05	
Incremental Delay, d2		0.9						1.1			3.0	
Delay (s)		6.2						28.4			22.8	
Level of Service		A						C			C	
Approach Delay (s)		6.2			0.0			28.4			22.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	976	121	0	0	0	0	0	0	206	858	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4533	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1061	132	0	0	0	0	0	0	224	933	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	0	25	0
Lane Group Flow (vph)	0	1169	0	0	0	0	0	0	0	0	1132	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2039	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.25	
v/c Ratio		0.46									0.56	
Uniform Delay, d1		17.3									18.1	
Progression Factor		0.19									0.88	
Incremental Delay, d2		0.5									1.0	
Delay (s)		3.8									17.0	
Level of Service		A									B	
Approach Delay (s)		3.8			0.0			0.0			17.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	246	0	0	420	133	259	1322	106	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.09			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	130			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	130			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	267	0	0	457	145	282	1437	115	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	73	0	0	0
Lane Group Flow (vph)	102	267	0	0	457	13	282	1437	42	0	0	0
Confl. Peds. (#/hr)									1647			
Confl. Bikes (#/hr)									34			
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Effective Green, g (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.45			0.33	0.09	0.36	0.36	0.36			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	240	827			1242	128	580	1668	47			
v/s Ratio Prot	c0.03	0.03			c0.03	0.01		0.31				
v/s Ratio Perm		0.14			0.11		0.18		c0.32			
v/c Ratio	0.42	0.32			0.37	0.10	0.49	0.86	0.89			
Uniform Delay, d1	39.6	15.9			23.1	37.6	22.1	26.5	26.9			
Progression Factor	1.00	1.00			0.40	0.97	0.91	0.79	1.00			
Incremental Delay, d2	1.2	0.2			0.2	0.3	1.5	3.3	68.5			
Delay (s)	40.8	16.2			9.3	36.9	21.7	24.4	95.4			
Level of Service	D	B			A	D	C	C	F			
Approach Delay (s)		23.0			16.0			28.4			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	283	177	71	396	0	0	0	0	41	1248	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3068						5512	
Flt Permitted		1.00	1.00		0.85						1.00	
Satd. Flow (perm)		1676	932		2614						5512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	308	192	77	430	0	0	0	0	45	1357	76
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	308	180	0	507	0	0	0	0	0	1469	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1222						2339	
v/s Ratio Prot		0.18										
v/s Ratio Perm			0.19		c0.19						0.27	
v/c Ratio		0.39	0.41		0.41						0.63	
Uniform Delay, d1		15.6	15.8		15.8						20.3	
Progression Factor		0.67	0.63		0.27						1.00	
Incremental Delay, d2		1.4	2.8		1.0						1.3	
Delay (s)		11.8	12.7		5.2						21.6	
Level of Service		B	B		A						C	
Approach Delay (s)		12.1			5.2			0.0			21.6	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	316	57	0	424	75	66	301	64	37	314	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2715			3021	
Flt Permitted		1.00	1.00		1.00	1.00		0.83			0.88	
Satd. Flow (perm)		1616	762		3185	650		2280			2664	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	343	62	0	461	82	72	327	70	40	341	14
RTOR Reduction (vph)	0	0	9	0	0	11	0	5	0	0	1	0
Lane Group Flow (vph)	0	343	54	0	461	71	0	464	0	0	394	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		988			1154	
v/s Ratio Prot		c0.21			0.14							
v/s Ratio Perm			0.07			0.11		c0.20			0.15	
v/c Ratio		0.42	0.14		0.29	0.22		0.47			0.34	
Uniform Delay, d1		14.3	12.1		13.2	12.6		18.1			17.0	
Progression Factor		0.46	0.40		1.19	1.29		1.03			1.00	
Incremental Delay, d2		1.5	0.7		0.4	1.3		1.5			0.8	
Delay (s)		8.2	5.6		16.0	17.6		20.2			17.8	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		7.8			16.2			20.2			17.8	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	337	68	38	432	0	0	0	0	191	1147	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.81	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1293	1676					933	3185	959
Flt Permitted		1.00	1.00	0.44	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	596	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	366	74	41	470	0	0	0	0	208	1247	49
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	366	61	41	470	0	0	0	0	208	1247	36
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	264	744					415	1419	427
v/s Ratio Prot		0.22			c0.28						c0.39	
v/s Ratio Perm			0.07	0.07						0.22		0.04
v/c Ratio		0.49	0.17	0.16	0.63					0.50	0.88	0.08
Uniform Delay, d1		17.8	15.0	14.9	19.3					17.8	22.7	14.4
Progression Factor		1.38	1.46	0.39	0.34					2.08	1.96	2.81
Incremental Delay, d2		2.1	0.9	1.0	3.3					3.9	7.3	0.3
Delay (s)		26.6	22.8	6.8	9.9					40.9	52.0	40.8
Level of Service		C	C	A	A					D	D	D
Approach Delay (s)		26.0			9.6			0.0			50.1	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	553	0	0	450	150	107	1156	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5232				
Flt Permitted	0.38	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	630	1676			1676	803		5232				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	601	0	0	489	163	116	1257	101	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	46	601	0	0	489	153	0	1462	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	338	899			899	430		1871				
v/s Ratio Prot		c0.36			0.29							
v/s Ratio Perm	0.07					0.19		0.28				
v/c Ratio	0.14	0.67			0.54	0.36		0.78				
Uniform Delay, d1	10.4	15.1			13.6	11.9		25.8				
Progression Factor	0.67	0.62			1.45	1.52		0.81				
Incremental Delay, d2	0.8	3.6			1.2	1.2		0.3				
Delay (s)	7.7	12.9			21.1	19.4		21.2				
Level of Service	A	B			C	B		C				
Approach Delay (s)		12.5			20.6			21.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	410	59	20	424	105	0	654	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.89	
Flpb, ped/bikes	1.00	1.00	1.00	0.77	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	801	1220	1676	799		3001			2759	
Flt Permitted	0.95	1.00	1.00	0.50	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	801	648	1676	799		3001			2759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	446	64	22	461	114	0	711	53	0	896	196
RTOR Reduction (vph)	0	0	4	0	0	57	0	5	0	0	21	0
Lane Group Flow (vph)	83	446	60	22	461	57	0	759	0	0	1071	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Effective Green, g (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.33	0.33	0.33		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	177	800	382	216	558	266		1367			1256	
v/s Ratio Prot	0.05	c0.27			c0.27			0.25			c0.39	
v/s Ratio Perm			0.08	0.03		0.07						
v/c Ratio	0.47	0.56	0.16	0.10	0.83	0.22		0.56			0.85	
Uniform Delay, d1	37.5	16.7	13.3	20.7	27.6	21.5		17.9			21.8	
Progression Factor	0.62	1.06	0.82	1.55	1.53	2.63		1.40			1.32	
Incremental Delay, d2	6.3	2.0	0.6	0.8	10.8	1.5		1.5			7.2	
Delay (s)	29.7	19.7	11.5	32.8	53.0	58.2		26.5			36.0	
Level of Service	C	B	B	C	D	E		C			D	
Approach Delay (s)		20.2			53.3			26.5			36.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	453	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	0.33
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1368	1676	439	1593	1676	881		2964			1616	448
Flt Permitted	0.36	1.00	1.00	0.38	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	516	1676	439	636	1676	881		2810			1616	448
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	425	39	12	447	61	10	660	60	0	492	132
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	13
Lane Group Flow (vph)	26	425	21	12	447	43	0	726	0	0	492	119
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					4
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	0.44
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Grp Cap (vph)	229	746	195	283	746	392		1230			707	196
v/s Ratio Prot		0.25			c0.27						c0.30	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.26				0.27
v/c Ratio	0.11	0.57	0.11	0.04	0.60	0.11		0.59			0.70	0.61
Uniform Delay, d1	14.6	18.5	14.5	14.1	18.9	14.5		19.2			20.5	19.4
Progression Factor	1.00	1.19	1.73	0.87	1.09	1.26		0.75			0.45	0.37
Incremental Delay, d2	0.8	2.6	0.9	0.2	3.1	0.5		1.5			5.0	11.8
Delay (s)	15.5	24.7	26.1	12.5	23.6	18.8		15.9			14.1	18.9
Level of Service	B	C	C	B	C	B		B			B	B
Approach Delay (s)		24.3			22.8			15.9			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	69	56	365	0	0	0	0	62	759	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1362	1676						4383	618
Flt Permitted		1.00	1.00	0.37	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	530	1676						4383	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	75	61	397	0	0	0	0	67	825	135
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	432	55	61	397	0	0	0	0	0	892	60
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	225	713						1957	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.06	0.12							0.20	0.10
v/c Ratio		0.61	0.15	0.27	0.56						0.46	0.22
Uniform Delay, d1		20.0	15.9	16.8	19.5						17.3	15.3
Progression Factor		1.65	2.11	1.00	1.00						1.44	4.72
Incremental Delay, d2		3.2	0.8	2.9	3.1						0.6	1.5
Delay (s)		36.2	34.3	19.7	22.6						25.6	73.6
Level of Service		D	C	B	C						C	E
Approach Delay (s)		35.9			22.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1790	330	235	2083	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1946	359	255	2264	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	118	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1946	243	137	2264	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					32.7	32.7	35.0	35.0				
Effective Green, g (s)					32.7	32.7	35.0	35.0				
Actuated g/C Ratio					0.36	0.36	0.39	0.39				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2095	406	619	2640				
v/s Ratio Prot					c0.34			c0.33				
v/s Ratio Perm						0.22	0.09					
v/c Ratio					0.93	0.60	0.22	0.86				
Uniform Delay, d1					27.5	23.3	18.4	25.2				
Progression Factor					1.00	1.00	1.01	1.02				
Incremental Delay, d2					8.8	6.4	0.8	3.6				
Delay (s)					36.3	29.7	19.3	29.2				
Level of Service					D	C	B	C				
Approach Delay (s)		0.0			35.3			28.2			0.0	
Approach LOS		A			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	1043	102	64	656	0	0	799	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.97		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.93	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4399		1487	3185			3185	975
Flt Permitted				0.95	1.00		0.25	1.00			1.00	1.00
Satd. Flow (perm)				1160	4399		397	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	1134	111	70	713	0	0	868	174
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	89	1232	0	70	713	0	0	868	172
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1710		216	1734			1734	530
v/s Ratio Prot					c0.28			0.22			c0.27	
v/s Ratio Perm				0.08			0.18					0.18
v/c Ratio				0.20	0.72		0.32	0.41			0.50	0.32
Uniform Delay, d1				18.2	23.3		11.3	12.0			12.8	11.3
Progression Factor				2.03	1.95		0.83	0.75			1.12	1.15
Incremental Delay, d2				0.9	2.4		3.7	0.7			0.7	1.0
Delay (s)				37.8	47.9		13.1	9.7			15.0	14.1
Level of Service				D	D		B	A			B	B
Approach Delay (s)		0.0			47.2			10.0			14.9	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	69	994	64	81	619	0	0	424	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5582			3167			1616	936
Flt Permitted					1.00			0.69			1.00	1.00
Satd. Flow (perm)					5582			2184			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	75	1080	70	88	673	0	0	461	74
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	0	0	0	1215	0	0	761	0	0	461	23
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2356			1106			497	288
v/s Ratio Prot								c0.07			c0.29	
v/s Ratio Perm					0.22			0.25				0.02
v/c Ratio					0.52			0.69			0.93	0.08
Uniform Delay, d1					19.2			19.0			30.2	22.1
Progression Factor					1.89			1.41			1.65	4.61
Incremental Delay, d2					0.7			3.1			21.3	0.4
Delay (s)					37.0			29.9			71.2	102.3
Level of Service					D			C			E	F
Approach Delay (s)		0.0			37.0			29.9			75.5	
Approach LOS		A			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	114	926	0	0	0	0	0	679	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5539						4577	1283
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5539						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	124	1007	0	0	0	0	0	738	205
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	1107	0	0	0	0	0	738	186
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2234						2263	634
v/s Ratio Prot											c0.16	
v/s Ratio Perm					0.20							0.14
v/c Ratio					0.50						0.33	0.29
Uniform Delay, d1					20.0						13.7	13.5
Progression Factor					1.00						1.67	1.86
Incremental Delay, d2					0.8						0.4	1.1
Delay (s)					20.8						23.2	26.1
Level of Service					C						C	C
Approach Delay (s)		0.0			20.8			0.0			23.8	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	1125	0	0	0	0	0	1363	163	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5411						4577	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5411						4577	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	1223	0	0	0	0	0	1482	177	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	195	1230	0	0	0	0	0	1482	162	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2080						2278	476			
v/s Ratio Prot								c0.32				
v/s Ratio Perm	0.18	0.23							0.17			
v/c Ratio	0.47	0.59						0.65	0.34			
Uniform Delay, d1	20.8	22.1						16.8	13.7			
Progression Factor	1.00	1.00						1.21	1.42			
Incremental Delay, d2	3.7	1.2						1.1	1.4			
Delay (s)	24.4	23.3						21.4	20.8			
Level of Service	C	C						C	C			
Approach Delay (s)		23.5			0.0			21.3			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	969	167	0	0	0	0	0	0	159	1274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5640								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5640								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1053	182	0	0	0	0	0	0	173	1385	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	14	0	0
Lane Group Flow (vph)	0	1220	0	0	0	0	0	0	0	159	1385	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2193								785	2845	
v/s Ratio Prot		c0.22									c0.24	
v/s Ratio Perm										0.10		
v/c Ratio		0.56								0.20	0.49	
Uniform Delay, d1		21.4								12.8	15.2	
Progression Factor		1.87								0.60	0.84	
Incremental Delay, d2		0.9								0.5	0.5	
Delay (s)		41.1								8.2	13.3	
Level of Service		D								A	B	
Approach Delay (s)		41.1			0.0			0.0			12.7	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	935	40	0	0	0	0	518	87	91	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.95						1.00			0.98	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5361						2961			3090	
Flt Permitted		0.99						1.00			0.74	
Satd. Flow (perm)		5361						2961			2294	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	1016	43	0	0	0	0	563	95	99	407	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1237	0	0	0	0	0	656	0	0	506	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1906						1710			1325	
v/s Ratio Prot								c0.22				
v/s Ratio Perm		0.23									0.22	
v/c Ratio		0.65						0.38			0.38	
Uniform Delay, d1		24.3						10.3			10.3	
Progression Factor		0.95						1.00			0.43	
Incremental Delay, d2		1.5						0.7			0.8	
Delay (s)		24.6						11.0			5.3	
Level of Service		C						B			A	
Approach Delay (s)		24.6			0.0			11.0			5.3	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1160	228	0	0	0	0	0	0	214	1688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1261	248	0	0	0	0	0	0	233	1835	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1261	235	0	0	0	0	0	0	218	1835	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.28									c0.40	
v/s Ratio Perm			0.20							0.15		
v/c Ratio		0.70	0.50							0.30	0.82	
Uniform Delay, d1		22.7	20.5							13.7	19.5	
Progression Factor		0.69	0.63							0.84	0.67	
Incremental Delay, d2		2.0	3.4							0.9	2.9	
Delay (s)		17.7	16.2							12.4	15.9	
Level of Service		B	B							B	B	
Approach Delay (s)		17.5			0.0			0.0			15.5	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	442	2072	0	0	0	0	0	1921	295	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4408						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4408						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	2252	0	0	0	0	0	2088	321	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	2719	0	0	0	0	0	2088	309	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1768						2252	635			
v/s Ratio Prot								c0.46				
v/s Ratio Perm		0.62							0.24			
v/c Ratio		1.54						0.93	0.49			
Uniform Delay, d1		26.9						21.3	15.3			
Progression Factor		1.19						0.68	0.59			
Incremental Delay, d2		244.9						7.8	2.5			
Delay (s)		277.1						22.3	11.5			
Level of Service		F						C	B			
Approach Delay (s)		277.1			0.0			20.9			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	157.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	1108	46	0	0	0	0	605	65	101	845	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.92	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4447						3047		1458	3185	
Flt Permitted		1.00						1.00		0.32	1.00	
Satd. Flow (perm)		4447						3047		494	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1204	50	0	0	0	0	658	71	110	918	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1286	0	0	0	0	0	729	0	110	918	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1581						1760		285	1840	
v/s Ratio Prot								0.24			c0.29	
v/s Ratio Perm		0.29								0.22		
v/c Ratio		0.81						0.41		0.39	0.50	
Uniform Delay, d1		26.3						10.5		10.3	11.3	
Progression Factor		1.59						0.23		0.33	0.32	
Incremental Delay, d2		0.4						0.6		3.6	0.9	
Delay (s)		42.2						3.0		7.0	4.5	
Level of Service		D						A		A	A	
Approach Delay (s)		42.2			0.0			3.0			4.8	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	525	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.95						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4311						3002			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4311						3002			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	1149	107	0	0	0	0	658	87	0	571	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	184	1244	0	0	0	0	0	742	0	0	571	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1877						1350			727	
v/s Ratio Prot		c0.29						0.25			c0.35	
v/s Ratio Perm	0.17											
v/c Ratio	0.39	0.66						0.55			0.79	
Uniform Delay, d1	17.3	20.2						18.1			21.1	
Progression Factor	0.58	0.69						0.70			0.41	
Incremental Delay, d2	1.6	1.2						1.4			4.7	
Delay (s)	11.7	15.1						14.2			13.3	
Level of Service	B	B						B			B	
Approach Delay (s)		14.7			0.0			14.2			13.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	754	57	0	0	0	0	1060	87	70	738	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4430						3185	1110	1553	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1221	4430						3185	1110	279	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	820	62	0	0	0	0	1152	95	76	802	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	316	873	0	0	0	0	0	1152	83	76	802	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1466						1772	617	155	1772	
v/s Ratio Prot		0.20						c0.36			0.25	
v/s Ratio Perm	c0.26								0.07	0.27		
v/c Ratio	0.78	0.60						0.65	0.13	0.49	0.45	
Uniform Delay, d1	27.2	25.1						13.9	9.6	12.2	11.8	
Progression Factor	1.75	1.81						1.52	1.89	1.00	1.00	
Incremental Delay, d2	10.8	1.3						1.5	0.4	10.7	0.8	
Delay (s)	58.2	46.8						22.6	18.5	22.8	12.7	
Level of Service	E	D						C	B	C	B	
Approach Delay (s)		49.8			0.0			22.3			13.5	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	829	200	95	1377	209	240	1294	171	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.85	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.94	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1217	1492	4577	950	1164	4577	1246			
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1217	478	4577	950	1164	4577	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	901	217	103	1497	227	261	1407	186	0	0	0
RTOR Reduction (vph)	0	0	85	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	182	901	132	103	1497	127	261	1407	142	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	741	120	1149	238	561	2207	600			
v/s Ratio Prot	c0.07	0.20	0.04		c0.33		0.10	c0.31				
v/s Ratio Perm	0.25		0.07	0.22		0.13	0.12		0.11			
v/c Ratio	0.84	0.51	0.18	0.86	1.30	0.54	0.47	0.64	0.24			
Uniform Delay, d1	22.4	21.2	7.7	32.2	33.7	29.2	15.6	17.4	13.6			
Progression Factor	1.00	1.00	1.00	1.05	0.99	1.17	0.60	0.75	0.35			
Incremental Delay, d2	24.6	1.1	0.1	39.8	140.9	6.0	0.4	1.0	0.6			
Delay (s)	47.1	22.3	7.8	73.7	174.4	40.2	9.7	14.1	5.3			
Level of Service	D	C	A	E	F	D	A	B	A			
Approach Delay (s)		23.4			152.1			12.6			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	66.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	823	58	49	1133	0	0	0	0	61	1087	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5752	1425
Flt Permitted		1.00	1.00	0.23	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	389	3185						5752	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	895	63	53	1232	0	0	0	0	66	1182	400
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	895	48	53	1232	0	0	0	0	0	1248	380
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	185	1521						2345	581
v/s Ratio Prot		0.28			c0.39							
v/s Ratio Perm			0.03	0.14							0.22	c0.27
v/c Ratio		0.59	0.07	0.29	0.81						0.53	0.65
Uniform Delay, d1		17.1	12.7	14.2	20.0						20.2	21.5
Progression Factor		0.39	0.16	1.00	1.00						1.85	1.88
Incremental Delay, d2		1.5	0.2	3.9	4.8						0.8	5.1
Delay (s)		8.2	2.2	18.1	24.8						38.1	45.6
Level of Service		A	A	B	C						D	D
Approach Delay (s)		7.8			24.5			0.0			40.0	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	828	39	28	908	64	88	420	47	27	272	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		0.95	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3120		1517	3078			3031			2885	
Flt Permitted	0.18	1.00		0.22	1.00			0.77			0.89	
Satd. Flow (perm)	296	3120		348	3078			2362			2569	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	900	42	30	987	70	96	457	51	29	296	112
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	128	939	0	30	1052	0	0	597	0	0	428	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	148	1566		174	1545			949			1032	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm	c0.43			0.09				c0.25			0.17	
v/c Ratio	0.86	0.60		0.17	0.68			0.63			0.41	
Uniform Delay, d1	21.9	17.7		13.6	18.8			23.9			21.5	
Progression Factor	1.00	1.00		0.49	0.59			1.00			1.00	
Incremental Delay, d2	44.8	1.7		1.5	1.8			3.2			1.2	
Delay (s)	66.7	19.4		8.2	12.9			27.1			22.7	
Level of Service	E	B		A	B			C			C	
Approach Delay (s)		25.1			12.8			27.1			22.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	790	98	93	1079	0	0	0	0	97	1339	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3132		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3132		351	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	859	107	101	1173	0	0	0	0	105	1455	264
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	963	0	101	1173	0	0	0	0	105	1455	236
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1566		175	1592					637	1830	570
v/s Ratio Prot		0.31			c0.37						c0.32	
v/s Ratio Perm				0.29						0.07		0.17
v/c Ratio		0.61		0.58	0.74					0.16	0.80	0.41
Uniform Delay, d1		18.0		17.6	19.8					19.3	26.4	21.6
Progression Factor		0.84		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.5		13.1	3.1					0.6	3.7	2.2
Delay (s)		16.7		30.7	22.9					19.8	30.1	23.8
Level of Service		B		C	C					B	C	C
Approach Delay (s)		16.7			23.5			0.0			28.6	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	748	0	0	1041	67	134	886	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3136			4528	1327			
Flt Permitted	0.14	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	230	3185			3136			4528	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	813	0	0	1132	73	146	963	45	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	28	0	0	0
Lane Group Flow (vph)	157	813	0	0	1200	0	0	1109	17	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	117	1631			1606			1710	501			
v/s Ratio Prot		0.26			0.38							
v/s Ratio Perm	c0.68							0.24	0.01			
v/c Ratio	1.34	0.50			0.75			0.65	0.03			
Uniform Delay, d1	21.9	14.4			17.3			23.1	17.6			
Progression Factor	1.00	1.00			0.66			0.56	0.32			
Incremental Delay, d2	200.2	1.1			3.2			1.7	0.1			
Delay (s)	222.2	15.5			14.6			14.6	5.7			
Level of Service	F	B			B			B	A			
Approach Delay (s)		48.9			14.6			14.2			0.0	
Approach LOS		D			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	636	51	37	529	63	41	534	51	37	764	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.95	1.00		0.98	1.00		0.96	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1543	3106		1508	3102		1557	3106		1532	3185	1230
Flt Permitted	0.37	1.00		0.32	1.00		0.17	1.00		0.27	1.00	1.00
Satd. Flow (perm)	597	3106		507	3102		271	3106		439	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	691	55	40	575	68	45	580	55	40	830	153
RTOR Reduction (vph)	0	7	0	0	10	0	0	8	0	0	0	87
Lane Group Flow (vph)	67	739	0	40	633	0	45	627	0	40	830	66
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	348	1811		295	1809		93	1069		151	1097	423
v/s Ratio Prot		c0.24			0.20			0.20			c0.26	
v/s Ratio Perm	0.11			0.08			0.17			0.09		0.05
v/c Ratio	0.19	0.41		0.14	0.35		0.48	0.59		0.26	0.76	0.16
Uniform Delay, d1	8.8	10.3		8.5	9.8		23.2	24.2		21.3	26.2	20.4
Progression Factor	2.19	2.06		0.56	0.48		0.47	0.44		1.55	1.55	3.17
Incremental Delay, d2	1.1	0.6		0.9	0.5		15.8	2.2		3.8	4.4	0.7
Delay (s)	20.4	21.8		5.7	5.2		26.8	12.9		36.8	45.0	65.5
Level of Service	C	C		A	A		C	B		D	D	E
Approach Delay (s)		21.6			5.3			13.8			47.7	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	487	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.98			1.00	0.89		1.00	0.83
Flpb, ped/bikes	0.93	1.00		0.93	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1481	3037		1478	3050			3166	1263		1616	1136
Flt Permitted	0.37	1.00		0.29	1.00			0.83	1.00		1.00	1.00
Satd. Flow (perm)	575	3037		446	3050			2646	1263		1616	1136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	672	82	83	527	73	41	599	76	0	529	128
RTOR Reduction (vph)	0	10	0	0	12	0	0	0	31	0	0	39
Lane Group Flow (vph)	74	744	0	83	588	0	0	640	45	0	529	89
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	261	1383		203	1389			1146	547		700	492
v/s Ratio Prot		c0.24			0.19						c0.33	
v/s Ratio Perm	0.13			0.19				0.24	0.04			0.08
v/c Ratio	0.28	0.54		0.41	0.42			0.56	0.08		0.76	0.18
Uniform Delay, d1	15.3	17.7		16.4	16.5			19.1	15.0		21.5	15.7
Progression Factor	0.70	0.73		1.55	1.60			0.50	0.30		1.16	1.47
Incremental Delay, d2	2.5	1.4		4.7	0.7			1.8	0.3		4.7	0.5
Delay (s)	13.3	14.3		30.1	27.2			11.3	4.8		29.7	23.6
Level of Service	B	B		C	C			B	A		C	C
Approach Delay (s)		14.2			27.6			10.6			28.5	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	506	91	80	591	112	55	727	101	47	647	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3112		1593	3109		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.41	1.00		0.11	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3112		679	3109		176	3185	1425	426	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	550	99	87	642	122	60	790	110	51	703	242
RTOR Reduction (vph)	0	16	0	0	17	0	0	0	57	0	0	140
Lane Group Flow (vph)	175	633	0	87	747	0	60	790	53	51	703	102
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1441		224	1025		74	1344	601	179	707	601
v/s Ratio Prot	c0.11	0.20			c0.24			0.25			c0.42	
v/s Ratio Perm				0.13			0.34		0.04	0.12		0.07
v/c Ratio	1.17	0.44		0.39	0.73		0.81	0.59	0.09	0.28	0.99	0.17
Uniform Delay, d1	40.8	16.3		23.2	26.6		22.8	20.0	15.6	17.1	25.9	16.2
Progression Factor	0.90	1.14		1.00	1.00		1.13	1.11	1.86	0.54	0.68	0.69
Incremental Delay, d2	121.9	0.9		5.0	4.5		58.0	1.8	0.3	3.7	31.3	0.6
Delay (s)	158.7	19.4		28.2	31.1		83.9	23.9	29.2	12.9	48.9	11.8
Level of Service	F	B		C	C		F	C	C	B	D	B
Approach Delay (s)		49.0			30.8			28.3			38.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	33	48	188	388	317	6	1562	0	8	274	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577		1593	3136	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577		196	3136	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	36	52	204	422	345	7	1698	0	9	298	34
RTOR Reduction (vph)	0	0	40	0	0	130	0	0	0	0	8	0
Lane Group Flow (vph)	76	36	12	204	422	215	7	1698	0	9	324	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	7.7	16.7	20.5	12.3	21.3	21.3	3.8	43.0		34.2	34.2	
Effective Green, g (s)	7.7	16.7	20.5	12.3	21.3	21.3	3.8	43.0		34.2	34.2	
Actuated g/C Ratio	0.09	0.19	0.23	0.14	0.24	0.24	0.04	0.48		0.38	0.38	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	264	310	324	217	753	337	67	2186		74	1191	
v/s Ratio Prot	c0.02	0.02	0.00	c0.13	0.13		0.00	c0.37			0.10	
v/s Ratio Perm			0.01			c0.15				0.05		
v/c Ratio	0.29	0.12	0.04	0.94	0.56	0.64	0.10	0.78		0.12	0.27	
Uniform Delay, d1	38.6	30.5	27.1	38.5	30.2	30.9	41.5	19.5		18.1	19.3	
Progression Factor	1.00	1.00	1.00	0.76	0.85	0.78	1.00	1.00		0.66	0.65	
Incremental Delay, d2	0.6	0.2	0.0	43.8	0.9	3.9	0.7	2.8		3.1	0.5	
Delay (s)	39.2	30.7	27.1	72.9	26.5	28.1	42.2	22.3		15.2	13.0	
Level of Service	D	C	C	E	C	C	D	C		B	B	
Approach Delay (s)		33.5			36.8			22.4			13.1	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	45	74	474	0	0	0	0	0	1056	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes			0.88	1.00	1.00						1.00	0.94
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1274	1593	3185						4577	1338
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1274	1593	3185						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	49	80	515	0	0	0	0	0	1148	222
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	123
Lane Group Flow (vph)	0	0	15	80	515	0	0	0	0	0	1148	99
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			27.8	8.7	40.0						40.1	40.1
Effective Green, g (s)			27.8	8.7	40.0						40.1	40.1
Actuated g/C Ratio			0.31	0.10	0.44						0.45	0.45
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			393	153	1415						2039	596
v/s Ratio Prot				c0.05	c0.16						c0.25	
v/s Ratio Perm			0.01									0.07
v/c Ratio			0.04	0.52	0.36						0.56	0.17
Uniform Delay, d1			21.8	38.7	16.6						18.5	14.9
Progression Factor			1.00	0.95	0.89						0.61	1.32
Incremental Delay, d2			0.2	2.9	0.7						1.0	0.5
Delay (s)			21.9	39.7	15.5						12.3	20.3
Level of Service			C	D	B						B	C
Approach Delay (s)		21.9			18.8			0.0			13.6	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	462	127	25	205	0	0	281	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					1.00			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					3069			3165			3090	
Flt Permitted					1.00			0.89			1.00	
Satd. Flow (perm)					3069			2845			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	45	502	138	27	223	0	0	305	63
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	0	660	0	0	250	0	0	349	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					41.2			39.6			39.6	
Effective Green, g (s)					41.2			39.6			39.6	
Actuated g/C Ratio					0.46			0.44			0.44	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					1404			1251			1359	
v/s Ratio Prot											c0.11	
v/s Ratio Perm					0.22			0.09				
v/c Ratio					0.47			0.20			0.26	
Uniform Delay, d1					16.9			15.5			15.9	
Progression Factor					1.60			1.00			1.00	
Incremental Delay, d2					1.1			0.4			0.5	
Delay (s)					28.1			15.8			16.4	
Level of Service					C			B			B	
Approach Delay (s)		0.0			28.1			15.8			16.4	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	486	0	0	0	0	0	1460	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.90
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	3185						4577	1279
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	3185						4577	1279
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	528	0	0	0	0	0	1587	185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	0	0	168	528	0	0	0	0	0	1587	93
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	1245						2308	645
v/s Ratio Prot					c0.17						c0.35	
v/s Ratio Perm				0.12								0.07
v/c Ratio				0.30	0.42						0.69	0.14
Uniform Delay, d1				18.9	20.0						16.9	11.9
Progression Factor				0.73	0.77						1.00	1.00
Incremental Delay, d2				1.2	1.0						1.7	0.5
Delay (s)				15.1	16.4						18.6	12.4
Level of Service				B	B						B	B
Approach Delay (s)		0.0			16.1			0.0			18.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	532	120	129	929	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					3185	1313		4539				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					3185	1313		4539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	578	130	140	1010	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	46	0	20	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	578	84	0	1130	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1245	513		2289				
v/s Ratio Prot					c0.18							
v/s Ratio Perm						0.06		0.25				
v/c Ratio					0.46	0.16		0.49				
Uniform Delay, d1					20.4	17.8		14.7				
Progression Factor					0.90	1.22		1.00				
Incremental Delay, d2					1.1	0.6		0.8				
Delay (s)					19.5	22.4		15.5				
Level of Service					B	C		B				
Approach Delay (s)		0.0			20.0			15.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	628	73	19	520	0	0	818	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.94
Flpb, ped/bikes				0.95	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1511	3102		1578	3185			3185	1336
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1511	3102		318	3185			3185	1336
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	683	79	21	565	0	0	889	73
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	42
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				46.0	46.0		38.0	38.0			38.0	38.0
Effective Green, g (s)				46.0	46.0		38.0	38.0			38.0	38.0
Actuated g/C Ratio				0.51	0.51		0.42	0.42			0.42	0.42
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				772	1585		134	1344			1344	564
v/s Ratio Prot					c0.24			0.18			c0.28	
v/s Ratio Perm				0.06			0.07					0.03
v/c Ratio				0.12	0.47		0.16	0.42			0.66	0.07
Uniform Delay, d1				11.5	14.2		16.1	18.3			20.8	15.5
Progression Factor				1.48	1.43		1.00	1.00			1.53	2.80
Incremental Delay, d2				0.3	1.0		2.5	1.0			1.9	0.2
Delay (s)				17.3	21.2		18.6	19.2			33.7	43.6
Level of Service				B	C		B	B			C	D
Approach Delay (s)		0.0			20.8			19.2			34.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	513	50	64	661	0	0	631	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.82
Flpb, ped/bikes					0.97	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3093	998	1593	3185			1616	1133
Flt Permitted					1.00	1.00	0.19	1.00			1.00	1.00
Satd. Flow (perm)					3093	998	319	3185			1616	1133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	558	54	70	718	0	0	686	104
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	0	599	28	70	718	0	0	686	83
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					1237	399	157	1574			799	560
v/s Ratio Prot								0.23			c0.42	
v/s Ratio Perm					0.19	0.03	0.22					0.07
v/c Ratio					0.48	0.07	0.45	0.46			0.86	0.15
Uniform Delay, d1					20.1	16.7	14.8	14.9			20.0	12.4
Progression Factor					0.62	0.42	1.00	1.00			0.79	1.13
Incremental Delay, d2					1.2	0.3	8.9	1.0			9.5	0.4
Delay (s)					13.7	7.3	23.7	15.8			25.2	14.5
Level of Service					B	A	C	B			C	B
Approach Delay (s)		0.0			13.1			16.5			23.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	356	92	49	750	0	0	751	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3079		1593	3185			3130	
Flt Permitted					0.99		0.27	1.00			1.00	
Satd. Flow (perm)					3079		453	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	387	100	53	815	0	0	816	107
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	557	0	53	815	0	0	912	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					23.0		61.0	61.0			61.0	
Effective Green, g (s)					23.0		61.0	61.0			61.0	
Actuated g/C Ratio					0.26		0.68	0.68			0.68	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					786		307	2158			2121	
v/s Ratio Prot								0.26			c0.29	
v/s Ratio Perm					0.18		0.12					
v/c Ratio					0.71		0.17	0.38			0.43	
Uniform Delay, d1					30.4		5.3	6.3			6.6	
Progression Factor					1.00		1.00	1.00			1.54	
Incremental Delay, d2					5.3		1.2	0.5			0.3	
Delay (s)					35.8		6.5	6.8			10.5	
Level of Service					D		A	A			B	
Approach Delay (s)		0.0			35.8			6.8			10.5	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	592	489	222	420	49	63	109	63	171	680	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1445	3185	1232	1578	4414		1587	3185	1219	1339	3083	
Flt Permitted	0.45	1.00	1.00	0.27	1.00		0.18	1.00	1.00	0.68	1.00	
Satd. Flow (perm)	691	3185	1232	453	4414		308	3185	1219	955	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	643	532	241	457	53	68	118	68	186	739	86
RTOR Reduction (vph)	0	0	188	0	21	0	0	0	20	0	12	0
Lane Group Flow (vph)	98	643	344	241	489	0	68	118	48	186	813	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Effective Green, g (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.49	0.49		0.35	0.35	0.48	0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1028	397	361	2162		163	1123	581	255	823	
v/s Ratio Prot		0.20		c0.08	0.11		c0.02	0.04	0.01		c0.26	
v/s Ratio Perm	0.14		c0.28	0.24			0.13		0.03	0.19		
v/c Ratio	0.44	0.63	0.87	0.67	0.23		0.42	0.11	0.08	0.73	0.99	
Uniform Delay, d1	18.7	20.1	22.3	11.5	10.2		16.8	15.2	10.0	23.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	2.9	21.6	4.6	0.2		1.7	0.2	0.1	16.7	28.6	
Delay (s)	24.9	23.0	43.8	16.2	10.5		18.5	15.4	10.0	40.1	54.2	
Level of Service	C	C	D	B	B		B	B	B	D	D	
Approach Delay (s)		31.8			12.3			14.8			51.6	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	525	162	184	534	237	17	67	29	141	1098	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1536	3185	1050	3090	3185	1091	1593	3185	1149	1219	3185	1170
Flt Permitted	0.40	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	650	3185	1050	3090	3185	1091	227	3185	1149	907	3185	1170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	571	176	200	580	258	18	73	32	153	1193	176
RTOR Reduction (vph)	0	0	78	0	0	123	0	0	16	0	0	46
Lane Group Flow (vph)	142	571	98	200	580	135	18	73	16	153	1193	130
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Effective Green, g (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Actuated g/C Ratio	0.47	0.38	0.38	0.12	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	390	1217	401	381	1316	450	74	1043	518	297	1043	491
v/s Ratio Prot	0.03	0.18		c0.06	c0.18			0.02	0.00		c0.37	0.02
v/s Ratio Perm	0.14		0.09			0.12	0.08		0.01	0.17		0.09
v/c Ratio	0.36	0.47	0.24	0.52	0.44	0.30	0.24	0.07	0.03	0.52	1.14	0.27
Uniform Delay, d1	13.7	20.9	18.9	37.0	18.9	17.7	22.1	20.8	13.7	24.5	30.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.3	1.4	1.3	1.1	1.7	7.6	0.1	0.0	6.3	76.4	0.3
Delay (s)	14.3	22.2	20.4	38.3	20.0	19.4	29.7	20.9	13.8	30.7	106.6	17.3
Level of Service	B	C	C	D	C	B	C	C	B	C	F	B
Approach Delay (s)		20.6			23.4			20.4			88.7	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	533	158	156	734	221	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2084
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2084
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	579	172	170	798	240	303
RTOR Reduction (vph)	0	103	0	0	0	37
Lane Group Flow (vph)	579	69	170	798	240	266
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	28.0	28.0	11.5	43.0	17.2	28.7
Effective Green, g (s)	28.0	28.0	11.5	43.0	17.2	28.7
Actuated g/C Ratio	0.40	0.40	0.16	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274	472	261	1956	759	854
v/s Ratio Prot	c0.18		c0.11	0.25	c0.08	0.05
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.45	0.15	0.65	0.41	0.32	0.31
Uniform Delay, d1	15.4	13.4	27.4	6.9	21.6	14.0
Progression Factor	1.00	1.00	1.09	1.89	1.00	1.00
Incremental Delay, d2	1.2	0.6	3.9	0.4	0.2	0.2
Delay (s)	16.6	14.0	33.8	13.6	21.8	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.0			17.1	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	559	99	57	816	82	49	200	64	58	1041	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.94	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1458	3185	1116	1497	2996		1551	3185	927
Flt Permitted	0.16	1.00	1.00	0.42	1.00	1.00	0.18	1.00		0.52	1.00	1.00
Satd. Flow (perm)	271	3185	1132	647	3185	1116	281	2996		842	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	608	108	62	887	89	53	217	70	63	1132	148
RTOR Reduction (vph)	0	0	51	0	0	62	0	42	0	0	0	81
Lane Group Flow (vph)	66	608	57	62	887	27	53	245	0	63	1132	67
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Effective Green, g (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Actuated g/C Ratio	0.39	0.39	0.39	0.31	0.31	0.31	0.37	0.37		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	163	1255	446	199	982	344	103	1104		412	1446	421
v/s Ratio Prot	0.02	c0.19			c0.28			0.08		0.01	c0.36	
v/s Ratio Perm	0.14		0.05	0.10		0.02	0.19			0.06		0.07
v/c Ratio	0.40	0.48	0.13	0.31	0.90	0.08	0.51	0.22		0.15	0.78	0.16
Uniform Delay, d1	15.1	15.9	13.5	18.5	23.2	17.2	17.2	15.2		10.9	16.2	11.2
Progression Factor	1.00	0.70	0.57	0.99	1.03	4.13	2.11	2.65		1.00	1.00	1.00
Incremental Delay, d2	1.5	1.2	0.6	3.3	11.2	0.4	4.2	0.1		0.2	2.8	0.2
Delay (s)	16.6	12.3	8.3	21.6	35.3	71.2	40.5	40.4		11.1	19.0	11.4
Level of Service	B	B	A	C	D	E	D	D		B	B	B
Approach Delay (s)		12.1			37.5			40.4			17.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	519	79	53	695	148	30	327	52	54	519	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.93	1.00	1.00	0.98	1.00		0.89	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	1199	1484	3185	1181	1560	4358		1423	2957	
Flt Permitted	0.26	1.00	1.00	0.44	1.00	1.00	0.18	1.00		0.49	1.00	
Satd. Flow (perm)	429	3185	1199	688	3185	1181	298	4358		738	2957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	564	86	58	755	161	33	355	57	59	564	240
RTOR Reduction (vph)	0	0	20	0	0	88	0	31	0	0	67	0
Lane Group Flow (vph)	111	564	66	58	755	73	33	381	0	59	737	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	1833	690	311	1442	534	93	1369		231	929	
v/s Ratio Prot	c0.03	0.18			c0.24			0.09			c0.25	
v/s Ratio Perm	0.16		0.06	0.08		0.06	0.11			0.08		
v/c Ratio	0.33	0.31	0.10	0.19	0.52	0.14	0.35	0.28		0.26	0.79	
Uniform Delay, d1	7.7	7.7	6.7	11.4	13.7	11.2	18.5	18.0		17.9	21.9	
Progression Factor	0.95	1.17	1.17	1.13	1.19	2.86	1.98	2.20		1.00	1.00	
Incremental Delay, d2	0.5	0.4	0.3	1.1	1.1	0.4	10.0	0.5		2.7	6.9	
Delay (s)	7.8	9.4	8.1	14.0	17.4	32.4	46.7	40.2		20.5	28.8	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		9.0			19.7			40.7			28.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	467	74	37	593	6	0	0	0	77	1009	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1575	3185	1249	1503	3174						4544	1255
Flt Permitted	0.26	1.00	1.00	0.47	1.00						1.00	1.00
Satd. Flow (perm)	438	3185	1249	736	3174						4544	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	508	80	40	645	7	0	0	0	84	1097	345
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	72	508	59	40	651	0	0	0	0	0	1181	327
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	296	1446	567	239	1033						1785	600
v/s Ratio Prot	0.02	0.16			c0.20							c0.05
v/s Ratio Perm	0.09		0.05	0.05							0.26	0.21
v/c Ratio	0.24	0.35	0.10	0.17	0.63						0.66	0.55
Uniform Delay, d1	11.6	12.4	10.9	16.8	20.0						17.4	12.9
Progression Factor	1.54	1.48	1.90	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	0.7	0.4	1.5	2.9						1.9	1.0
Delay (s)	18.2	18.9	21.2	18.3	22.9						19.4	13.9
Level of Service	B	B	C	B	C						B	B
Approach Delay (s)		19.1			22.7			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	729	197	191	697	101	205	537	214	116	312	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	0.99	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1507	3185	1097	1584	4383		1541	3185	1229	1484	3045	
Flt Permitted	0.31	1.00	1.00	0.19	1.00		0.44	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	499	3185	1097	317	4383		712	3185	1229	675	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	792	214	208	758	110	223	584	233	126	339	54
RTOR Reduction (vph)	0	0	141	0	21	0	0	0	15	0	14	0
Lane Group Flow (vph)	211	792	73	208	847	0	223	584	218	126	379	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1079	371	241	1972		350	1362	621	228	1031	
v/s Ratio Prot		0.25		c0.07	0.19		c0.04	0.18	0.03		0.12	
v/s Ratio Perm	c0.42		0.07	0.32			c0.24		0.15	0.19		
v/c Ratio	1.25	0.73	0.20	0.86	0.43		0.64	0.43	0.35	0.55	0.37	
Uniform Delay, d1	29.8	26.2	21.1	18.6	16.9		19.7	18.0	13.4	24.2	22.5	
Progression Factor	1.00	1.00	1.00	1.84	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	151.4	4.4	1.2	20.6	0.5		3.8	1.0	0.3	9.3	1.0	
Delay (s)	181.1	30.6	22.2	54.7	13.4		23.5	19.0	13.7	33.5	23.5	
Level of Service	F	C	C	D	B		C	B	B	C	C	
Approach Delay (s)		55.2			21.4			18.8			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	677	127	191	838	459	27	547	83	48	668	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1190	3090	3185	1248	1470	3185	1315	1540	3185	1121
Flt Permitted	0.19	1.00	1.00	0.95	1.00	1.00	0.25	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	311	3185	1190	3090	3185	1248	381	3185	1315	533	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	736	138	208	911	499	29	595	90	52	726	142
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	19	0	0	17
Lane Group Flow (vph)	260	736	90	208	911	451	29	595	71	52	726	125
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Effective Green, g (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	1263	472	302	1256	492	129	1079	574	180	1079	491
v/s Ratio Prot	c0.09	0.23		0.07	0.29			0.19	0.01		c0.23	0.03
v/s Ratio Perm	c0.37		0.08			0.36	0.08		0.04	0.10		0.09
v/c Ratio	0.92	0.58	0.19	0.69	0.73	0.92	0.22	0.55	0.12	0.29	0.67	0.25
Uniform Delay, d1	16.0	21.3	17.7	39.3	23.1	25.8	21.3	24.2	15.1	21.8	25.5	16.0
Progression Factor	2.24	0.78	0.89	0.82	1.09	1.08	1.00	1.02	0.94	1.00	1.00	1.00
Incremental Delay, d2	28.1	1.5	0.7	5.5	3.2	21.7	3.9	2.0	0.1	4.0	3.4	0.3
Delay (s)	63.8	18.2	16.5	37.6	28.3	49.7	25.2	26.7	14.2	25.8	28.8	16.2
Level of Service	E	B	B	D	C	D	C	C	B	C	C	B
Approach Delay (s)		28.4			36.1			25.1			26.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	747	40	64	867	603	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2381
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2381
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	812	43	70	942	655	951
RTOR Reduction (vph)	0	25	0	0	0	20
Lane Group Flow (vph)	812	18	70	942	655	931
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	37.2	37.2	15.1	55.8	24.4	39.5
Effective Green, g (s)	37.2	37.2	15.1	55.8	24.4	39.5
Actuated g/C Ratio	0.41	0.41	0.17	0.62	0.27	0.44
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1316	433	267	1974	837	1044
v/s Ratio Prot	c0.25		0.04	0.30	0.21	c0.15
v/s Ratio Perm		0.02				0.24
v/c Ratio	0.62	0.04	0.26	0.48	0.78	0.89
Uniform Delay, d1	20.8	15.8	32.6	9.2	30.3	23.3
Progression Factor	1.66	3.08	0.78	2.02	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.4	0.7	4.8	9.8
Delay (s)	36.4	48.7	25.8	19.4	35.2	33.1
Level of Service	D	D	C	B	D	C
Approach Delay (s)	37.0			19.8	33.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	949	31	33	610	61	81	560	82	85	783	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.91	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	3185	1143	1521	3185	1196	1450	3090		1587	3185	976
Flt Permitted	0.20	1.00	1.00	0.28	1.00	1.00	0.30	1.00		0.22	1.00	1.00
Satd. Flow (perm)	340	3185	1143	444	3185	1196	461	3090		367	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1032	34	36	663	66	88	609	89	92	851	157
RTOR Reduction (vph)	0	0	18	0	0	48	0	14	0	0	0	91
Lane Group Flow (vph)	259	1032	16	36	663	18	88	684	0	92	851	66
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	41.8	41.8	41.8	24.6	24.6	24.6	28.2	28.2		37.6	37.6	37.6
Effective Green, g (s)	41.8	41.8	41.8	24.6	24.6	24.6	28.2	28.2		37.6	37.6	37.6
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31		0.42	0.42	0.42
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	354	1479	530	121	870	326	144	968		240	1330	407
v/s Ratio Prot	c0.12	0.32			0.21			c0.22		0.03	c0.27	
v/s Ratio Perm	c0.22		0.01	0.08		0.02	0.19			0.13		0.07
v/c Ratio	0.73	0.70	0.03	0.30	0.76	0.06	0.61	0.71		0.38	0.64	0.16
Uniform Delay, d1	17.1	19.1	13.1	25.9	30.0	24.1	26.2	27.3		17.4	20.8	16.4
Progression Factor	1.10	1.14	0.83	0.89	0.97	4.34	1.49	1.44		1.00	1.00	1.00
Incremental Delay, d2	5.0	1.8	0.1	5.2	5.3	0.3	6.3	2.0		1.0	1.0	0.2
Delay (s)	23.8	23.6	11.0	28.2	34.3	104.9	45.5	41.3		18.4	21.8	16.5
Level of Service	C	C	B	C	C	F	D	D		B	C	B
Approach Delay (s)		23.3			40.1			41.8			20.8	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1036	79	43	676	76	58	548	121	78	407	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1573	3185	1071	1512	3185	1050	1531	4288		1497	2935	
Flt Permitted	0.25	1.00	1.00	0.25	1.00	1.00	0.28	1.00		0.28	1.00	
Satd. Flow (perm)	413	3185	1071	402	3185	1050	449	4288		442	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1126	86	47	735	83	63	596	132	85	442	180
RTOR Reduction (vph)	0	0	32	0	0	48	0	28	0	0	49	0
Lane Group Flow (vph)	245	1126	54	47	735	35	63	700	0	85	573	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1886	634	169	1344	443	144	1381		142	945	
v/s Ratio Prot	0.08	c0.35			0.23			0.16			c0.20	
v/s Ratio Perm	c0.28		0.05	0.12		0.03	0.14			0.19		
v/c Ratio	0.61	0.60	0.08	0.28	0.55	0.08	0.44	0.51		0.60	0.61	
Uniform Delay, d1	10.6	11.6	7.9	17.0	19.5	15.5	24.1	24.7		25.6	25.7	
Progression Factor	1.58	1.70	2.58	0.56	0.61	0.72	1.09	1.06		1.00	1.00	
Incremental Delay, d2	2.2	1.2	0.2	3.6	1.4	0.3	9.2	1.3		17.3	2.9	
Delay (s)	18.9	20.9	20.6	13.2	13.3	11.6	35.3	27.5		42.9	28.6	
Level of Service	B	C	C	B	B	B	D	C		D	C	
Approach Delay (s)		20.6			13.1			28.2			30.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1049	50	35	637	5	0	0	0	84	456	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1571	3185	1027	1514	3177						4449	1264
Flt Permitted	0.27	1.00	1.00	0.22	1.00						0.99	1.00
Satd. Flow (perm)	454	3185	1027	346	3177						4449	1264
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1140	54	38	692	5	0	0	0	91	496	177
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	0	0	0	27
Lane Group Flow (vph)	107	1140	29	38	696	0	0	0	0	0	587	150
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Effective Green, g (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	342	1691	545	140	1291						1557	557
v/s Ratio Prot	0.03	c0.36			0.22							0.02
v/s Ratio Perm	0.14		0.03	0.11							0.13	0.09
v/c Ratio	0.31	0.67	0.05	0.27	0.54						0.38	0.27
Uniform Delay, d1	11.5	15.4	10.2	17.8	20.3						21.9	15.9
Progression Factor	1.15	1.00	2.04	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	1.8	0.1	4.7	1.6						0.7	0.3
Delay (s)	13.6	17.1	20.9	22.5	21.9						22.6	16.2
Level of Service	B	B	C	C	C						C	B
Approach Delay (s)		17.0			21.9			0.0			21.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix E
Existing (2014/2015) With 9th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	592	489	222	420	49	63	109	63	171	680	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1445	3185	1232	1578	4414		1587	3185	1219	1339	3083	
Flt Permitted	0.45	1.00	1.00	0.27	1.00		0.18	1.00	1.00	0.68	1.00	
Satd. Flow (perm)	691	3185	1232	453	4414		308	3185	1219	955	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	643	532	241	457	53	68	118	68	186	739	86
RTOR Reduction (vph)	0	0	188	0	21	0	0	0	20	0	12	0
Lane Group Flow (vph)	98	643	344	241	489	0	68	118	48	186	813	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Effective Green, g (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.49	0.49		0.35	0.35	0.48	0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1028	397	361	2162		163	1123	581	255	823	
v/s Ratio Prot		0.20		c0.08	0.11		c0.02	0.04	0.01		c0.26	
v/s Ratio Perm	0.14		c0.28	0.24			0.13		0.03	0.19		
v/c Ratio	0.44	0.63	0.87	0.67	0.23		0.42	0.11	0.08	0.73	0.99	
Uniform Delay, d1	18.7	20.1	22.3	11.5	10.2		16.8	15.2	10.0	23.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	2.9	21.6	4.6	0.2		1.7	0.2	0.1	16.7	28.6	
Delay (s)	24.9	23.0	43.8	16.2	10.5		18.5	15.4	10.0	40.1	54.2	
Level of Service	C	C	D	B	B		B	B	B	D	D	
Approach Delay (s)		31.8			12.3			14.8			51.6	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	525	162	223	534	237	17	67	68	141	1098	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1536	3185	1010	3090	3185	1055	1593	3185	1425	1177	3185	1126
Flt Permitted	0.37	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	606	3185	1010	3090	3185	1055	197	3185	1425	876	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	571	176	242	580	258	18	73	74	153	1193	176
RTOR Reduction (vph)	0	0	132	0	0	106	0	0	67	0	0	51
Lane Group Flow (vph)	142	571	44	242	580	152	18	73	7	153	1193	125
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	789	250	330	1226	406	66	1082	142	297	1082	461
v/s Ratio Prot	0.04	c0.18		c0.08	c0.18			0.02	0.01		c0.37	0.02
v/s Ratio Perm	0.14		0.04			0.14	0.09			0.17		0.09
v/c Ratio	0.55	0.72	0.17	0.73	0.47	0.37	0.27	0.07	0.05	0.52	1.10	0.27
Uniform Delay, d1	25.7	34.5	29.6	43.3	23.1	22.1	24.0	22.3	40.7	26.4	33.0	19.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	5.7	1.5	8.2	0.3	0.6	9.9	0.1	0.2	6.3	59.9	0.3
Delay (s)	28.3	40.2	31.1	51.4	23.4	22.7	33.9	22.4	40.9	32.7	92.9	19.9
Level of Service	C	D	C	D	C	C	C	C	D	C	F	B
Approach Delay (s)		36.5			29.5			31.9			78.4	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	572	158	156	773	221	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2084
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2084
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	622	172	170	840	240	303
RTOR Reduction (vph)	0	103	0	0	0	30
Lane Group Flow (vph)	622	69	170	840	240	274
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	28.0	28.0	11.5	43.0	17.2	28.7
Effective Green, g (s)	28.0	28.0	11.5	43.0	17.2	28.7
Actuated g/C Ratio	0.40	0.40	0.16	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274	472	261	1956	759	854
v/s Ratio Prot	c0.20		c0.11	0.26	0.08	c0.05
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.49	0.15	0.65	0.43	0.32	0.32
Uniform Delay, d1	15.7	13.4	27.4	7.1	21.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.6	5.7	0.7	0.2	0.2
Delay (s)	17.0	14.0	33.1	7.8	21.8	14.2
Level of Service	B	B	C	A	C	B
Approach Delay (s)	16.4			12.0	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	598	99	57	816	82	88	200	25	58	1041	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00		0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1432	3185	1034	1593	3091		1521	3185	885
Flt Permitted	0.13	1.00	1.00	0.39	1.00	1.00	0.95	1.00		0.60	1.00	1.00
Satd. Flow (perm)	222	3185	1053	590	3185	1034	1593	3091		961	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	650	108	62	887	89	96	217	27	63	1132	148
RTOR Reduction (vph)	0	0	67	0	0	62	0	10	0	0	0	86
Lane Group Flow (vph)	66	650	41	62	887	27	96	234	0	63	1132	62
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	8.9	38.2		37.3	33.3	33.3
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	8.9	38.2		37.3	33.3	33.3
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	178	962	312	157	1311		423	1178	327
v/s Ratio Prot	0.02	c0.20			c0.28		c0.06	0.08		0.01	c0.36	
v/s Ratio Perm	0.15		0.04	0.11		0.03				0.06		0.07
v/c Ratio	0.46	0.54	0.10	0.35	0.92	0.09	0.61	0.18		0.15	0.96	0.19
Uniform Delay, d1	20.5	21.7	18.0	24.5	30.4	22.5	38.9	16.1		16.1	27.7	19.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.3	1.7	0.5	5.3	15.4	0.5	6.9	0.1		0.2	17.6	0.3
Delay (s)	22.7	23.4	18.5	29.8	45.8	23.0	45.8	16.2		16.3	45.3	19.5
Level of Service	C	C	B	C	D	C	D	B		B	D	B
Approach Delay (s)		22.7			42.9			24.5			41.1	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	519	79	53	695	148	30	327	52	54	519	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.93	1.00	1.00	0.98	1.00		0.89	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	1199	1484	3185	1181	1560	4358		1423	2957	
Flt Permitted	0.26	1.00	1.00	0.44	1.00	1.00	0.18	1.00		0.49	1.00	
Satd. Flow (perm)	429	3185	1199	688	3185	1181	298	4358		738	2957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	564	86	58	755	161	33	355	57	59	564	240
RTOR Reduction (vph)	0	0	20	0	0	88	0	31	0	0	67	0
Lane Group Flow (vph)	111	564	66	58	755	73	33	381	0	59	737	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	1833	690	311	1442	534	93	1369		231	929	
v/s Ratio Prot	c0.03	0.18			c0.24			0.09			c0.25	
v/s Ratio Perm	0.16		0.06	0.08		0.06	0.11			0.08		
v/c Ratio	0.33	0.31	0.10	0.19	0.52	0.14	0.35	0.28		0.26	0.79	
Uniform Delay, d1	7.7	7.7	6.7	11.4	13.7	11.2	18.5	18.0		17.9	21.9	
Progression Factor	1.00	1.00	1.00	1.13	1.19	2.86	1.98	2.20		1.00	1.00	
Incremental Delay, d2	0.6	0.4	0.3	1.1	1.1	0.4	10.0	0.5		2.7	6.9	
Delay (s)	8.2	8.1	6.9	14.0	17.4	32.4	46.7	40.2		20.5	28.8	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		8.0			19.7			40.7			28.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	467	74	37	593	6	0	0	0	77	1009	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1575	3185	1249	1503	3174						4544	1255
Flt Permitted	0.26	1.00	1.00	0.47	1.00						1.00	1.00
Satd. Flow (perm)	438	3185	1249	736	3174						4544	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	508	80	40	645	7	0	0	0	84	1097	345
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	72	508	59	40	651	0	0	0	0	0	1181	327
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	296	1446	567	239	1033						1785	600
v/s Ratio Prot	0.02	0.16			c0.20							c0.05
v/s Ratio Perm	0.09		0.05	0.05							0.26	0.21
v/c Ratio	0.24	0.35	0.10	0.17	0.63						0.66	0.55
Uniform Delay, d1	11.6	12.4	10.9	16.8	20.0						17.4	12.9
Progression Factor	1.28	1.19	1.51	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	0.7	0.4	1.5	2.9						1.9	1.0
Delay (s)	15.2	15.5	16.8	18.3	22.9						19.4	13.9
Level of Service	B	B	B	B	C						B	B
Approach Delay (s)		15.6			22.7			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	3	8	43	44	47	10	56	5	35	1118	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2762		1593	2909		1577	3127		1472	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.13	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2762		1593	2909		224	3127		1103	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	3	9	47	48	51	11	61	5	38	1215	310
RTOR Reduction (vph)	0	9	0	0	40	0	0	3	0	0	0	85
Lane Group Flow (vph)	14	3	0	47	59	0	11	63	0	38	1215	225
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Effective Green, g (s)	5.4	17.8		3.0	15.4		34.5	34.5		34.5	34.5	39.9
Actuated g/C Ratio	0.08	0.25		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	702		68	639		110	1541		543	1569	741
v/s Ratio Prot	0.01	0.00		c0.03	c0.02			0.02			c0.38	0.02
v/s Ratio Perm							0.05			0.03		0.15
v/c Ratio	0.11	0.00		0.69	0.09		0.10	0.04		0.07	0.77	0.30
Uniform Delay, d1	30.1	19.5		33.0	21.7		9.5	9.2		9.3	14.6	7.8
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0		26.1	0.1		1.8	0.1		0.2	3.8	0.2
Delay (s)	30.5	19.5		59.2	21.8		16.2	13.8		9.6	18.4	8.1
Level of Service	C	B		E	C		B	B		A	B	A
Approach Delay (s)		25.4			33.8			14.1			16.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	387	415	0	87	17	73	316	50	19	1064	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.97		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.89	1.00	1.00
Frt		1.00	0.85		0.98		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3059		1563	3036		1425	3185	1239
Flt Permitted		1.00	1.00		1.00		0.16	1.00		0.52	1.00	1.00
Satd. Flow (perm)		1676	1326		3059		255	3036		777	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	421	451	0	95	18	79	343	54	21	1157	129
RTOR Reduction (vph)	0	0	24	0	12	0	0	18	0	0	0	65
Lane Group Flow (vph)	0	421	427	0	101	0	79	379	0	21	1157	64
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Effective Green, g (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Actuated g/C Ratio		0.36	0.36		0.36		0.49	0.49		0.49	0.49	0.49
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		598	473		1092		126	1500		384	1574	612
v/s Ratio Prot		0.25			0.03			0.12			c0.36	
v/s Ratio Perm			c0.32				0.31			0.03		0.05
v/c Ratio		0.70	0.90		0.09		0.63	0.25		0.05	0.74	0.10
Uniform Delay, d1		19.3	21.4		15.0		13.0	10.2		9.2	14.1	9.4
Progression Factor		1.00	1.00		1.15		1.42	1.45		1.00	1.00	1.00
Incremental Delay, d2		6.8	23.2		0.2		18.3	0.3		0.3	3.1	0.3
Delay (s)		26.1	44.5		17.3		36.8	15.2		9.5	17.2	9.8
Level of Service		C	D		B		D	B		A	B	A
Approach Delay (s)		35.6			17.3			18.8			16.3	
Approach LOS		D			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	544	72	0	359	38	51	341	126	0	488	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	0.90
Flpb, ped/bikes		1.00	1.00		1.00	1.00	0.99	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1142		1676	1320	1584	2883			1616	1237
Flt Permitted		1.00	1.00		1.00	1.00	0.26	1.00			1.00	1.00
Satd. Flow (perm)		1676	1142		1676	1320	432	2883			1616	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	591	78	0	390	41	55	371	137	0	530	135
RTOR Reduction (vph)	0	0	49	0	0	26	0	16	0	0	0	87
Lane Group Flow (vph)	0	591	29	0	390	15	55	492	0	0	530	48
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		26.1	26.1		26.1	26.1	33.5	33.5			24.8	24.8
Effective Green, g (s)		26.1	26.1		26.1	26.1	33.5	33.5			24.8	24.8
Actuated g/C Ratio		0.37	0.37		0.37	0.37	0.48	0.48			0.35	0.35
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		624	425		624	492	261	1379			572	438
v/s Ratio Prot		c0.35			0.23		0.01	c0.17			c0.33	
v/s Ratio Perm			0.03			0.01	0.09					0.04
v/c Ratio		0.95	0.07		0.62	0.03	0.21	0.36			0.93	0.11
Uniform Delay, d1		21.3	14.1		17.9	13.9	19.2	11.5			21.7	15.2
Progression Factor		0.80	2.17		1.01	1.00	1.79	1.45			0.46	0.31
Incremental Delay, d2		23.4	0.3		3.9	0.1	0.4	0.2			16.8	0.1
Delay (s)		40.5	30.9		22.1	14.0	34.8	16.8			26.8	4.8
Level of Service		D	C		C	B	C	B			C	A
Approach Delay (s)		39.4			21.3			18.6			22.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	347	304	104	332	0	0	0	0	26	1088	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.92	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1472	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.36	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	560	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	377	330	113	361	0	0	0	0	28	1183	92
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	377	315	113	361	0	0	0	0	28	1183	49
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	185	555					721	1706	362
v/s Ratio Prot		0.22			0.22						c0.37	
v/s Ratio Perm			c0.27	0.20						0.02		0.07
v/c Ratio		0.68	0.81	0.61	0.65					0.04	0.69	0.14
Uniform Delay, d1		20.2	21.4	19.6	19.9					7.7	12.0	8.1
Progression Factor		0.86	0.91	1.00	1.00					0.28	0.29	0.00
Incremental Delay, d2		4.1	10.6	14.1	5.8					0.1	1.9	0.6
Delay (s)		21.6	30.1	33.7	25.8					2.3	5.5	0.7
Level of Service		C	C	C	C					A	A	A
Approach Delay (s)		25.5			27.7			0.0			5.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	22	54	18	58	1057	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1519	3185	3185	993
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	322	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	59	20	63	1149	177
RTOR Reduction (vph)	0	9	0	0	0	46
Lane Group Flow (vph)	24	50	20	63	1149	131
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	202	2006	2006	625
v/s Ratio Prot				0.02	c0.36	
v/s Ratio Perm	0.02	c0.02	0.06			0.13
v/c Ratio	0.07	0.10	0.10	0.03	0.57	0.21
Uniform Delay, d1	21.0	21.2	5.1	4.9	7.5	5.5
Progression Factor	1.00	1.00	1.00	1.00	0.12	0.00
Incremental Delay, d2	0.1	0.1	1.0	0.0	0.8	0.5
Delay (s)	21.1	21.3	6.1	4.9	1.7	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.2			5.2	1.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1378	160	56	433	0	0	1043	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3113		1570	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3113		220	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1498	174	61	471	0	0	1134	220
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	103	1659	0	61	471	0	0	1134	214
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1512		94	1365			1365	522
v/s Ratio Prot					c0.53			0.15			c0.36	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.14	1.10		0.65	0.35			0.83	0.41
Uniform Delay, d1				10.0	18.0		15.8	13.4			17.7	13.9
Progression Factor				2.13	1.93		0.96	0.90			0.99	0.91
Incremental Delay, d2				0.0	45.0		28.0	0.6			3.7	1.4
Delay (s)				21.3	79.8		43.2	12.7			21.3	14.0
Level of Service				C	E		D	B			C	B
Approach Delay (s)		0.0			76.4			16.2			20.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	1561	56	78	427	0	0	310	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3140			1616	1254
Flt Permitted				0.95	1.00	1.00		0.84			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2668			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	1697	61	85	464	0	0	337	165
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	0	78
Lane Group Flow (vph)	0	0	0	15	1697	25	0	549	0	0	337	87
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1238			750	582
v/s Ratio Prot					c0.53						c0.21	
v/s Ratio Perm				0.01		0.02		0.21				0.07
v/c Ratio				0.03	1.32	0.05		0.44			0.45	0.15
Uniform Delay, d1				12.6	20.9	12.7		12.6			12.7	10.8
Progression Factor				1.90	1.75	6.28		0.75			0.28	0.13
Incremental Delay, d2				0.0	147.9	0.1		0.2			1.1	0.3
Delay (s)				24.0	184.4	80.0		9.7			4.7	1.7
Level of Service				C	F	F		A			A	A
Approach Delay (s)		0.0			179.5			9.7			3.7	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	115.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	428	1312	0	0	0	0	0	1010	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	465	1426	0	0	0	0	0	1098	177
RTOR Reduction (vph)	0	0	0	20	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	445	1426	0	0	0	0	0	1098	161
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.45						c0.24	
v/s Ratio Perm				0.31								0.13
v/c Ratio				0.71	1.04						0.55	0.30
Uniform Delay, d1				16.3	19.9						14.8	12.9
Progression Factor				1.00	1.00						0.77	0.81
Incremental Delay, d2				6.8	34.7						0.8	1.0
Delay (s)				23.1	54.6						12.1	11.5
Level of Service				C	D						B	B
Approach Delay (s)		0.0			46.8			0.0			12.0	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	559	1252	0	0	38	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	608	1361	0	0	41	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	608	1361	0	0	41	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.20				
v/s Ratio Perm					c0.01	
v/c Ratio	0.35	0.24			0.22	
Uniform Delay, d1	8.1	1.0			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.5	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.4	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	840	163	0	0	0	0	495	98	44	198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4412		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4412		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	913	177	0	0	0	0	538	107	48	215	0
RTOR Reduction (vph)	0	0	107	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	210	913	70	0	0	0	0	606	0	48	215	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1575		158	780	
v/s Ratio Prot		0.16						c0.14		0.02	c0.13	
v/s Ratio Perm	c0.19		0.05									
v/c Ratio	0.48	0.40	0.13					0.38		0.30	0.28	
Uniform Delay, d1	15.9	15.3	13.6					16.8		32.0	11.5	
Progression Factor	1.20	1.14	2.03					1.15		1.00	1.00	
Incremental Delay, d2	3.8	0.5	0.5					0.7		1.1	0.9	
Delay (s)	22.9	18.1	28.2					20.0		33.1	12.3	
Level of Service	C	B	C					B		C	B	
Approach Delay (s)		20.2			0.0			20.0			16.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	727	133	0	0	0	0	427	70	140	1009	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.93	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5467						3041		1478	3185	
Flt Permitted		0.99						1.00		0.40	1.00	
Satd. Flow (perm)		5467						3041		626	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	790	145	0	0	0	0	464	76	152	1097	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	1059	0	0	0	0	0	521	0	152	1097	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2421						1346		277	1410	
v/s Ratio Prot								0.17			c0.34	
v/s Ratio Perm		0.19								0.24		
v/c Ratio		0.44						0.39		0.55	0.78	
Uniform Delay, d1		13.5						13.1		14.4	16.6	
Progression Factor		1.14						1.71		0.92	1.00	
Incremental Delay, d2		0.5						0.8		4.8	2.7	
Delay (s)		15.9						23.2		18.0	19.2	
Level of Service		B						C		B	B	
Approach Delay (s)		15.9			0.0			23.2			19.1	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	747	71	0	0	0	0	432	87	0	398	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5392						2939			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5392						2939			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	812	77	0	0	0	0	470	95	0	433	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	0	957	0	0	0	0	0	541	0	0	433	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2696						1037			570	
v/s Ratio Prot								0.18			c0.27	
v/s Ratio Perm		0.18										
v/c Ratio		0.35						0.52			0.76	
Uniform Delay, d1		10.6						18.0			20.0	
Progression Factor		1.80						1.26			0.89	
Incremental Delay, d2		0.3						1.7			8.8	
Delay (s)		19.5						24.2			26.5	
Level of Service		B						C			C	
Approach Delay (s)		19.5			0.0			24.2			26.5	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	619	159	0	0	0	0	0	0	118	1147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5387									4507	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5387									4507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	673	173	0	0	0	0	0	0	128	1247	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	841	0	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2708									1641	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.31									0.83	
Uniform Delay, d1		10.3									20.2	
Progression Factor		1.55									0.88	
Incremental Delay, d2		0.3									4.0	
Delay (s)		16.2									21.7	
Level of Service		B									C	
Approach Delay (s)		16.2			0.0			0.0			21.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	359	1157	199	0	0	0	0	723	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	390	1258	216	0	0	0	0	786	193
RTOR Reduction (vph)	0	0	0	55	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	249	1505	0	0	0	0	0	786	175
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.17	
v/s Ratio Perm				c0.28	0.27							c0.18
v/c Ratio				0.65	0.62						0.40	0.42
Uniform Delay, d1				15.8	15.6						13.8	14.0
Progression Factor				1.06	0.92						1.00	1.00
Incremental Delay, d2				5.9	0.9						0.6	3.1
Delay (s)				22.7	15.1						14.4	17.1
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.4			0.0			14.9	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1219	105	352	591	0	0	0	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5536		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5536		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1325	114	383	642	0	0	0	193
RTOR Reduction (vph)	0	0	0	0	20	0	283	0	0	0	0	178
Lane Group Flow (vph)	0	0	0	0	1419	0	100	642	0	0	0	15
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.14				
v/s Ratio Perm												c0.01
v/c Ratio					0.95		0.12	0.29				0.08
Uniform Delay, d1					25.1		19.8	11.0				29.9
Progression Factor					1.58		1.44	0.97				1.00
Incremental Delay, d2					12.0		0.3	0.3				0.2
Delay (s)					51.6		28.8	11.0				30.1
Level of Service					D		C	B				C
Approach Delay (s)		0.0			51.6			17.7			30.1	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	80	1226	85	56	401	0	0	915	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5589		1509	3185			3185	960
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1004	5589		294	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	87	1333	92	61	436	0	0	995	243
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	87	1410	0	61	436	0	0	995	226
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		131	1419			1419	427
v/s Ratio Prot					c0.25			0.14			c0.31	
v/s Ratio Perm				0.09			0.21					0.24
v/c Ratio				0.21	0.61		0.47	0.31			0.70	0.53
Uniform Delay, d1				13.1	16.1		13.6	12.5			15.6	14.1
Progression Factor				0.28	0.36		1.04	0.95			0.49	0.33
Incremental Delay, d2				1.0	1.0		11.4	0.6			1.9	3.1
Delay (s)				4.6	6.9		25.5	12.4			9.6	7.7
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.7			14.0			9.3	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	21	1214	67	40	530	0	0	308	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3174			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2901			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	23	1320	73	43	576	0	0	335	100
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1405	0	0	619	0	0	335	83
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1264			704	429
v/s Ratio Prot											0.21	
v/s Ratio Perm					0.25			c0.21				0.08
v/c Ratio					0.59			0.49			0.48	0.19
Uniform Delay, d1					15.3			14.2			14.1	12.2
Progression Factor					0.69			0.51			0.35	0.21
Incremental Delay, d2					1.0			1.3			1.6	0.7
Delay (s)					11.5			8.5			6.6	3.3
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.5			8.5			5.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	105	784	0	0	0	0	0	1221	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	114	852	0	0	0	0	0	1327	326
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	0	0	0	953	0	0	0	0	0	1327	281
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.29	
v/s Ratio Perm					0.17							0.20
v/c Ratio					0.38						0.67	0.45
Uniform Delay, d1					13.5						15.7	13.9
Progression Factor					1.00						1.11	1.11
Incremental Delay, d2					0.5						1.3	1.8
Delay (s)					14.0						18.8	17.2
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1230	227	0	0	0	0	0	0	125	1057	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5608	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5608	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1337	247	0	0	0	0	0	0	136	1149	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1337	230	0	0	0	0	0	0	0	1270	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2435	
v/s Ratio Prot		c0.23										
v/s Ratio Perm			0.23								0.23	
v/c Ratio		0.54	0.53								0.52	
Uniform Delay, d1		14.7	14.6								14.5	
Progression Factor		1.00	1.00								1.65	
Incremental Delay, d2		0.8	4.6								0.7	
Delay (s)		15.5	19.2								24.7	
Level of Service		B	B								C	
Approach Delay (s)		16.1			0.0			0.0			24.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	962	0	0	0	0	0	963	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.95				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5223						6307				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5223						6307				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	420	1046	0	0	0	0	0	1047	191	0	0	0
RTOR Reduction (vph)	24	24	0	0	0	0	0	24	0	0	0	0
Lane Group Flow (vph)	257	1161	0	0	0	0	0	1214	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2253						2730				
v/s Ratio Prot								c0.19				
v/s Ratio Perm	c0.28	0.22										
v/c Ratio	0.64	0.52						0.44				
Uniform Delay, d1	15.6	14.5						13.9				
Progression Factor	0.22	0.20						1.61				
Incremental Delay, d2	6.6	0.7						0.5				
Delay (s)	10.0	3.6						22.9				
Level of Service	A	A						C				
Approach Delay (s)		4.8			0.0			22.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	708	177	0	0	0	0	324	88	140	815	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5594						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.52	1.00	
Satd. Flow (perm)		5594						3185	1425	868	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	770	192	0	0	0	0	352	96	152	886	0
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	52	0	0	0
Lane Group Flow (vph)	0	917	0	0	0	0	0	352	44	152	886	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	396	2092	
v/s Ratio Prot		c0.16						0.11			c0.19	
v/s Ratio Perm									0.03	0.18		
v/c Ratio		0.36						0.24	0.07	0.38	0.42	
Uniform Delay, d1		12.3						11.6	10.6	12.5	12.8	
Progression Factor		0.47						1.00	1.53	0.83	0.86	
Incremental Delay, d2		0.3						0.4	0.2	2.1	0.5	
Delay (s)		6.1						12.0	16.5	12.5	11.4	
Level of Service		A						B	B	B	B	
Approach Delay (s)		6.1			0.0			13.0			11.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	780	59	0	0	0	0	498	60	0	324	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5502						3095			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5502						3095			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	848	64	0	0	0	0	541	65	0	352	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	972	0	0	0	0	0	602	0	0	352	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1965						1534			801	
v/s Ratio Prot								0.19			c0.22	
v/s Ratio Perm		0.18										
v/c Ratio		0.49						0.39			0.44	
Uniform Delay, d1		17.6						11.1			11.4	
Progression Factor		0.45						1.80			2.32	
Incremental Delay, d2		0.9						0.7			1.6	
Delay (s)		8.8						20.5			28.0	
Level of Service		A						C			C	
Approach Delay (s)		8.8			0.0			20.5			28.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	772	71	0	0	0	0	0	0	94	1111	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	839	77	0	0	0	0	0	0	102	1208	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	902	0	0	0	0	0	0	0	0	1295	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.28	
v/c Ratio		0.37									0.65	
Uniform Delay, d1		13.4									15.6	
Progression Factor		0.18									0.65	
Incremental Delay, d2		0.4									1.3	
Delay (s)		2.7									11.3	
Level of Service		A									B	
Approach Delay (s)		2.7			0.0			0.0			11.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	246	0	0	389	112	315	1278	91	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.16			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	226			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	226			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	267	0	0	423	122	342	1389	99	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	114	0	0	69	0	0	0
Lane Group Flow (vph)	95	267	0	0	423	8	342	1389	30	0	0	0
Confl. Peds. (#/hr)									1280			
Confl. Bikes (#/hr)									24			
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Effective Green, g (s)	4.8	31.8			23.0	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.45			0.33	0.06	0.31	0.31	0.31			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	211	863			1301	89	489	1405	69			
v/s Ratio Prot	c0.03	c0.02			c0.02	0.01		c0.30				
v/s Ratio Perm		0.15			0.11		0.21		0.13			
v/c Ratio	0.45	0.31			0.33	0.09	0.70	0.99	0.44			
Uniform Delay, d1	31.3	12.1			17.7	30.9	21.4	24.1	19.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.2			0.1	0.4	8.1	21.4	19.1			
Delay (s)	32.9	12.3			17.8	31.3	29.5	45.6	38.5			
Level of Service	C	B			B	C	C	D	D			
Approach Delay (s)		17.7			20.8			42.2			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	218	167	83	386	0	0	0	0	155	808	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.96						0.92	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3041						5053	
Flt Permitted		1.00	1.00		0.84						0.99	
Satd. Flow (perm)		1676	971		2587						5053	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	237	182	90	420	0	0	0	0	168	878	104
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	237	170	0	510	0	0	0	0	0	1132	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1210						2144	
v/s Ratio Prot		0.14										
v/s Ratio Perm			0.18		c0.20						0.22	
v/c Ratio		0.30	0.38		0.42						0.53	
Uniform Delay, d1		14.8	15.5		15.9						19.2	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.0	2.4		1.1						0.9	
Delay (s)		15.8	17.8		17.0						20.1	
Level of Service		B	B		B						C	
Approach Delay (s)		16.7			17.0			0.0			20.1	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	246	51	0	445	92	53	284	63	25	214	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.92			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2750			2964	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.90	
Satd. Flow (perm)		1616	949		3185	775		2437			2688	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	267	55	0	484	100	58	309	68	27	233	25
RTOR Reduction (vph)	0	0	28	0	0	25	0	22	0	0	1	0
Lane Group Flow (vph)	0	267	27	0	484	75	0	413	0	0	284	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1044			1152	
v/s Ratio Prot		c0.17			0.15							
v/s Ratio Perm			0.03			0.10		c0.17			0.11	
v/c Ratio		0.34	0.06		0.31	0.20		0.40			0.25	
Uniform Delay, d1		11.1	9.5		10.9	10.2		13.8			12.8	
Progression Factor		1.00	1.00		0.13	0.03		1.22			1.00	
Incremental Delay, d2		1.2	0.2		0.4	0.9		1.0			0.5	
Delay (s)		12.3	9.8		1.8	1.2		17.8			13.3	
Level of Service		B	A		A	A		B			B	
Approach Delay (s)		11.8			1.7			17.8			13.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	255	89	48	455	0	0	0	0	119	731	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.54	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	913	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	277	97	52	495	0	0	0	0	129	795	82
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	277	80	52	495	0	0	0	0	129	795	43
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	391	718					513	1369	445
v/s Ratio Prot		0.17			c0.30						c0.25	
v/s Ratio Perm			0.08	0.06						0.11		0.04
v/c Ratio		0.39	0.20	0.13	0.69					0.25	0.58	0.10
Uniform Delay, d1		13.7	12.5	12.1	16.2					12.8	15.2	11.9
Progression Factor		0.78	0.76	1.74	1.74					0.79	0.64	0.90
Incremental Delay, d2		1.5	1.0	0.5	4.2					1.0	1.6	0.4
Delay (s)		12.1	10.6	21.7	32.5					11.1	11.2	11.0
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		11.7			31.4			0.0			11.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	419	0	0	399	172	75	969	67	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.97				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5419				
Flt Permitted	0.32	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	534	1676			1676	976		5419				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	455	0	0	434	187	82	1053	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	13	0	0	0	0
Lane Group Flow (vph)	33	455	0	0	434	169	0	1195	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	193	605			605	352		2724				
v/s Ratio Prot		c0.27			0.26							
v/s Ratio Perm	0.06					0.17		0.22				
v/c Ratio	0.17	0.75			0.72	0.48		0.44				
Uniform Delay, d1	15.2	19.6			19.3	17.3		11.1				
Progression Factor	0.74	0.76			1.34	1.48		0.47				
Incremental Delay, d2	1.9	8.2			4.8	3.1		0.4				
Delay (s)	13.1	23.1			30.7	28.7		5.6				
Level of Service	B	C			C	C		A				
Approach Delay (s)		22.4			30.1			5.6			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	269	49	21	479	44	0	386	55	0	806	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2918			2944	
Flt Permitted	0.25	1.00	1.00	0.48	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	417	1676	929	809	1676	961		2918			2944	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	292	53	23	521	48	0	420	60	0	876	133
RTOR Reduction (vph)	0	0	20	0	0	28	0	14	0	0	12	0
Lane Group Flow (vph)	22	292	33	23	521	20	0	467	0	0	997	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	172	694	384	335	694	398		1459			1472	
v/s Ratio Prot		0.17			c0.31			0.16			c0.34	
v/s Ratio Perm	0.05		0.04	0.03		0.02						
v/c Ratio	0.13	0.42	0.09	0.07	0.75	0.05		0.32			0.68	
Uniform Delay, d1	12.7	14.5	12.5	12.4	17.4	12.3		10.4			13.2	
Progression Factor	0.27	0.25	0.06	1.87	1.78	3.58		1.30			0.62	
Incremental Delay, d2	1.1	1.3	0.3	0.3	5.9	0.2		0.6			2.3	
Delay (s)	4.5	4.9	1.1	23.5	36.9	44.1		14.1			10.6	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.4			37.0			14.1			10.6	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	255	27	10	441	22	7	536	49	0	342	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	0.47
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3011			1616	643
Flt Permitted	0.32	1.00	1.00	0.54	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	541	1676	621	902	1676	964		2862			1616	643
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	277	29	11	479	24	8	583	53	0	372	85
RTOR Reduction (vph)	0	0	16	0	0	14	0	10	0	0	0	30
Lane Group Flow (vph)	17	277	13	11	479	10	0	634	0	0	372	55
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	custom
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					6
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	29.1
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	0.42
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	4.9
Lane Grp Cap (vph)	224	696	269	374	696	400		1242			701	267
v/s Ratio Prot		0.17			c0.29						c0.23	
v/s Ratio Perm	0.03		0.02	0.01		0.01		0.22				0.08
v/c Ratio	0.08	0.40	0.05	0.03	0.69	0.02		0.51			0.53	0.20
Uniform Delay, d1	12.3	14.3	11.4	12.1	16.7	12.1		14.4			14.6	13.1
Progression Factor	0.38	0.49	2.68	1.59	1.27	3.39		0.43			0.74	2.91
Incremental Delay, d2	0.6	1.6	0.3	0.1	4.8	0.1		1.4			2.7	1.6
Delay (s)	5.2	8.6	31.0	19.4	26.1	41.1		7.6			13.5	39.6
Level of Service	A	A	C	B	C	D		A			B	D
Approach Delay (s)		10.4			26.6			7.6			18.3	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	259	69	62	383	0	0	0	0	44	912	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1270	1676						4499	987
Flt Permitted		1.00	1.00	0.55	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	735	1676						4499	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	282	75	67	416	0	0	0	0	48	991	130
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	76
Lane Group Flow (vph)	0	282	49	67	416	0	0	0	0	0	1039	54
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	307	701						1876	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.09							0.23	0.05
v/c Ratio		0.40	0.12	0.22	0.59						0.55	0.13
Uniform Delay, d1		14.2	12.5	13.0	15.7						15.5	12.6
Progression Factor		0.40	0.10	1.00	1.00						0.19	0.08
Incremental Delay, d2		1.6	0.6	1.6	3.7						0.9	0.5
Delay (s)		7.4	1.8	14.7	19.4						3.8	1.5
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.2			18.8			0.0			3.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1247	148	314	1580	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1355	161	341	1717	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	90	120	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1355	71	221	1717	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	2489				
v/s Ratio Prot					c0.23			c0.25				
v/s Ratio Perm						0.06	0.20					
v/c Ratio					0.61	0.16	0.55	0.69				
Uniform Delay, d1					22.2	18.1	22.6	24.2				
Progression Factor					1.00	1.00	0.36	0.55				
Incremental Delay, d2					1.3	0.8	2.4	0.7				
Delay (s)					23.5	18.9	10.6	14.0				
Level of Service					C	B	B	B				
Approach Delay (s)		0.0			23.0			13.4			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	888	64	56	434	0	0	662	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4486		1500	3185			3185	1154
Flt Permitted				0.95	1.00		0.33	1.00			1.00	1.00
Satd. Flow (perm)				1346	4486		522	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	965	70	61	472	0	0	720	164
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	93	1023	0	61	472	0	0	720	161
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1538		298	1820			1820	659
v/s Ratio Prot					c0.23			0.15			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.20	0.67		0.20	0.26			0.40	0.24
Uniform Delay, d1				16.2	19.6		7.3	7.5			8.3	7.5
Progression Factor				0.30	0.26		0.38	0.41			1.23	1.31
Incremental Delay, d2				0.9	2.0		1.4	0.3			0.5	0.7
Delay (s)				5.7	7.1		4.2	3.4			10.7	10.4
Level of Service				A	A		A	A			B	B
Approach Delay (s)		0.0			7.0			3.5			10.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	27	865	41	66	555	0	0	320	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5680			3168			1616	1144
Flt Permitted					1.00			0.88			1.00	1.00
Satd. Flow (perm)					5680			2801			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	29	940	45	72	603	0	0	348	83
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	53
Lane Group Flow (vph)	0	0	0	0	1004	0	0	675	0	0	348	30
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1785			1543			593	420
v/s Ratio Prot								c0.04			c0.22	
v/s Ratio Perm					0.18			0.19				0.03
v/c Ratio					0.56			0.44			0.59	0.07
Uniform Delay, d1					20.0			9.7			17.9	14.4
Progression Factor					0.80			1.32			1.26	5.24
Incremental Delay, d2					1.2			0.8			3.8	0.3
Delay (s)					17.1			13.7			26.4	75.8
Level of Service					B			B			C	E
Approach Delay (s)		0.0			17.1			13.7			35.9	
Approach LOS		A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	633	0	0	0	0	0	724	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5621						4577	1321
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5621						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	688	0	0	0	0	0	787	321
RTOR Reduction (vph)	0	0	0	0	32	0	0	0	0	0	0	55
Lane Group Flow (vph)	0	0	0	0	742	0	0	0	0	0	787	266
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2192						2190	632
v/s Ratio Prot											0.17	
v/s Ratio Perm					0.13							c0.20
v/c Ratio					0.34						0.36	0.42
Uniform Delay, d1					15.0						11.5	11.9
Progression Factor					1.00						0.30	0.14
Incremental Delay, d2					0.4						0.4	1.8
Delay (s)					15.4						3.9	3.4
Level of Service					B						A	A
Approach Delay (s)		0.0			15.4			0.0			3.8	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	483	1252	0	0	0	0	0	1992	197	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	0.99						1.00	1.00			
Satd. Flow (prot)	999	5272						4577	1025			
Flt Permitted	0.95	0.99						1.00	1.00			
Satd. Flow (perm)	999	5272						4577	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	525	1361	0	0	0	0	0	2165	214	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	344	1506	0	0	0	0	0	2165	201	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1675						2583	578			
v/s Ratio Prot								c0.47				
v/s Ratio Perm	c0.34	0.29							0.20			
v/c Ratio	1.08	0.90						0.84	0.35			
Uniform Delay, d1	30.7	29.3						16.2	10.6			
Progression Factor	1.00	1.00						1.84	2.04			
Incremental Delay, d2	74.8	8.1						2.6	1.2			
Delay (s)	105.5	37.4						32.5	22.9			
Level of Service	F	D						C	C			
Approach Delay (s)		50.5			0.0			31.6			0.0	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1469	175	0	0	0	0	0	0	183	647	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5675								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5675								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1597	190	0	0	0	0	0	0	199	703	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1764	0	0	0	0	0	0	0	187	703	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2206								785	2845	
v/s Ratio Prot		c0.31									c0.12	
v/s Ratio Perm										0.12		
v/c Ratio		0.80								0.24	0.25	
Uniform Delay, d1		24.4								13.1	13.2	
Progression Factor		1.55								0.58	0.63	
Incremental Delay, d2		2.1								0.6	0.2	
Delay (s)		39.9								8.2	8.4	
Level of Service		D								A	A	
Approach Delay (s)		39.9			0.0			0.0			8.4	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	1019	57	0	0	0	0	352	91	54	204	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.94			1.00	
Flpb, ped/bikes		0.97						1.00			0.97	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5485						2911			3071	
Flt Permitted		0.99						1.00			0.81	
Satd. Flow (perm)		5485						2911			2520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	1108	62	0	0	0	0	383	99	59	222	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	1331	0	0	0	0	0	466	0	0	281	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2664						1247			1080	
v/s Ratio Prot								c0.16				
v/s Ratio Perm		0.24									0.11	
v/c Ratio		0.50						0.37			0.26	
Uniform Delay, d1		12.2						13.6			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.7						0.9			0.6	
Delay (s)		12.9						14.5			19.8	
Level of Service		B						B			B	
Approach Delay (s)		12.9			0.0			14.5			19.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1256	235	0	0	0	0	0	0	177	894	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1365	255	0	0	0	0	0	0	192	972	0
RTOR Reduction (vph)	0	0	27	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1365	228	0	0	0	0	0	0	170	972	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.30									c0.21	
v/s Ratio Perm			0.18							0.11		
v/c Ratio		0.68	0.41							0.27	0.51	
Uniform Delay, d1		15.8	13.5							13.4	15.1	
Progression Factor		1.31	1.35							0.33	0.43	
Incremental Delay, d2		1.8	2.1							1.0	0.9	
Delay (s)		22.5	20.4							5.4	7.5	
Level of Service		C	C							A	A	
Approach Delay (s)		22.2			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	247	1185	0	0	0	0	0	1158	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4472						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4472						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	1288	0	0	0	0	0	1259	82	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1541	0	0	0	0	0	1259	65	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		29.1						31.3	31.3			
Effective Green, g (s)		29.1						31.3	31.3			
Actuated g/C Ratio		0.42						0.45	0.45			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1859						2046	601			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.34							0.05			
v/c Ratio		0.83						0.62	0.11			
Uniform Delay, d1		18.2						14.8	11.2			
Progression Factor		0.50						1.68	2.11			
Incremental Delay, d2		3.5						0.8	0.2			
Delay (s)		12.5						25.5	23.9			
Level of Service		B						C	C			
Approach Delay (s)		12.5			0.0			25.4			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	963	51	0	0	0	0	439	70	156	431	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4420						3043		1593	3185	
Flt Permitted		1.00						1.00		0.39	1.00	
Satd. Flow (perm)		4420						3043		660	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1047	55	0	0	0	0	477	76	170	468	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1193	0	0	0	0	0	548	0	170	468	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1894						1478		320	1547	
v/s Ratio Prot								0.18			0.15	
v/s Ratio Perm		0.27								c0.26		
v/c Ratio		0.63						0.37		0.53	0.30	
Uniform Delay, d1		15.7						11.3		12.5	10.9	
Progression Factor		1.59						1.88		1.17	1.05	
Incremental Delay, d2		0.9						0.7		5.9	0.5	
Delay (s)		25.9						21.9		20.4	11.9	
Level of Service		C						C		C	B	
Approach Delay (s)		25.9			0.0			21.9			14.1	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	1044	61	0	0	0	0	544	82	0	341	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.97			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4410						3042			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4410						3042			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	1135	66	0	0	0	0	591	89	0	371	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	61	1192	0	0	0	0	0	678	0	0	371	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1839						1325			704	
v/s Ratio Prot		c0.27						0.22			c0.23	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.65						0.51			0.53	
Uniform Delay, d1	12.5	16.3						14.3			14.5	
Progression Factor	0.32	0.27						0.31			0.38	
Incremental Delay, d2	0.4	1.4						1.2			2.3	
Delay (s)	4.3	5.8						5.6			7.8	
Level of Service	A	A						A			A	
Approach Delay (s)		5.7			0.0			5.6			7.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	791	61	0	0	0	0	721	88	109	609	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1545	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.30	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	487	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	860	66	0	0	0	0	784	96	118	662	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	111	914	0	0	0	0	0	784	79	118	662	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	244	1597	
v/s Ratio Prot		c0.20						c0.25			0.21	
v/s Ratio Perm	0.08								0.06	0.24		
v/c Ratio	0.22	0.58						0.49	0.13	0.48	0.41	
Uniform Delay, d1	15.8	18.3						11.5	9.3	11.5	11.0	
Progression Factor	1.00	1.09						0.26	0.08	1.00	1.00	
Incremental Delay, d2	0.8	1.2						0.8	0.3	6.7	0.8	
Delay (s)	16.5	21.2						3.8	1.0	18.2	11.8	
Level of Service	B	C						A	A	B	B	
Approach Delay (s)		20.7			0.0			3.5			12.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	1110	103	63	852	175	228	1620	167	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1586	4577	1380	1578	4577	1177	1449	4577	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	379	4577	1380	488	4577	1177	1449	4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	240	1207	112	68	926	190	248	1761	182	0	0	0
RTOR Reduction (vph)	0	0	44	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	240	1207	68	68	926	77	248	1761	147	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.3	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	197	1251	832	73	691	177	859	2715	798			
v/s Ratio Prot	c0.09	0.26	0.03		0.20		0.10	c0.38				
v/s Ratio Perm	c0.24		0.02	0.14		0.07	0.08		0.11			
v/c Ratio	1.22	0.96	0.08	0.93	1.34	0.44	0.29	0.65	0.18			
Uniform Delay, d1	31.0	32.3	7.4	37.7	38.2	34.7	9.0	12.1	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.65	1.58	2.03			
Incremental Delay, d2	135.3	18.3	0.0	87.4	162.7	7.6	0.1	0.9	0.4			
Delay (s)	166.3	50.6	7.5	125.2	200.9	42.3	14.9	19.9	17.3			
Level of Service	F	D	A	F	F	D	B	B	B			
Approach Delay (s)		65.3			171.1			19.1			0.0	
Approach LOS		E			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	70.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	909	100	42	824	0	0	0	0	78	462	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.18	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	304	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	988	109	46	896	0	0	0	0	85	502	121
RTOR Reduction (vph)	0	0	62	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	988	47	46	896	0	0	0	0	0	587	82
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	130	1365						2429	604
v/s Ratio Prot		c0.31			0.28							
v/s Ratio Perm			0.03	0.15							0.10	0.06
v/c Ratio		0.72	0.08	0.35	0.66						0.24	0.14
Uniform Delay, d1		16.6	11.8	13.5	15.9						12.9	12.3
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		3.4	0.2	7.4	2.5						0.2	0.5
Delay (s)		19.9	12.1	20.9	18.4						13.2	12.8
Level of Service		B	B	C	B						B	B
Approach Delay (s)		19.2			18.5			0.0			13.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	145	979	58	17	703	74	79	279	38	30	146	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	0.94	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1496	3128		1593	3043			2999			2809	
Flt Permitted	0.26	1.00		0.15	1.00			0.81			0.87	
Satd. Flow (perm)	406	3128		257	3043			2462			2462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	1064	63	18	764	80	86	303	41	33	159	96
RTOR Reduction (vph)	0	4	0	0	8	0	0	8	0	0	30	0
Lane Group Flow (vph)	158	1123	0	18	836	0	0	422	0	0	258	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	203	1570		129	1527			989			989	
v/s Ratio Prot		0.36			0.27							
v/s Ratio Perm	c0.39			0.07				c0.17			0.10	
v/c Ratio	0.78	0.71		0.14	0.55			0.43			0.26	
Uniform Delay, d1	20.4	19.3		13.3	17.1			21.6			20.0	
Progression Factor	1.00	1.00		0.58	0.51			1.00			1.00	
Incremental Delay, d2	24.9	2.8		2.1	1.3			1.3			0.6	
Delay (s)	45.3	22.2		9.8	10.1			22.9			20.6	
Level of Service	D	C		A	B			C			C	
Approach Delay (s)		25.0			10.1			22.9			20.6	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	742	97	51	589	0	0	0	0	199	673	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		350	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	807	105	55	640	0	0	0	0	216	732	151
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	83
Lane Group Flow (vph)	0	902	0	55	640	0	0	0	0	216	732	68
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		157	1433					716	2059	641
v/s Ratio Prot		c0.29			0.20						c0.16	
v/s Ratio Perm				0.16						0.14		0.05
v/c Ratio		0.64		0.35	0.45					0.30	0.36	0.11
Uniform Delay, d1		21.3		18.0	18.9					17.5	18.0	15.9
Progression Factor		0.31		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.6		6.1	1.0					1.1	0.5	0.3
Delay (s)		8.2		24.0	19.9					18.6	18.5	16.2
Level of Service		A		C	B					B	B	B
Approach Delay (s)		8.2			20.3			0.0			18.2	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	142	856	0	0	578	86	99	1332	70	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.32	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	530	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	930	0	0	628	93	108	1448	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	44	0	0	0
Lane Group Flow (vph)	154	930	0	0	717	0	0	1556	32	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	243	1460			1432			1824	570			
v/s Ratio Prot		c0.29			0.23							
v/s Ratio Perm	0.29							0.34	0.02			
v/c Ratio	0.63	0.64			0.50			0.85	0.06			
Uniform Delay, d1	14.5	14.5			13.3			19.1	12.9			
Progression Factor	1.00	1.00			0.66			0.55	0.80			
Incremental Delay, d2	12.0	2.1			1.2			3.9	0.1			
Delay (s)	26.4	16.6			10.0			14.4	10.4			
Level of Service	C	B			A			B	B			
Approach Delay (s)		18.0			10.0			14.2			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	744	51	53	603	71	44	379	32	49	363	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3155		1593	3135		1593	3148		1593	3185	1425
Flt Permitted	0.30	1.00		0.24	1.00		0.48	1.00		0.44	1.00	1.00
Satd. Flow (perm)	506	3155		405	3135		805	3148		744	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	809	55	58	655	77	48	412	35	53	395	85
RTOR Reduction (vph)	0	7	0	0	13	0	0	9	0	0	0	49
Lane Group Flow (vph)	78	857	0	58	719	0	48	438	0	53	395	36
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	242	1509		193	1500		345	1349		318	1365	610
v/s Ratio Prot		c0.27			0.23			c0.14			0.12	
v/s Ratio Perm	0.15			0.14			0.06			0.07		0.03
v/c Ratio	0.32	0.57		0.30	0.48		0.14	0.32		0.17	0.29	0.06
Uniform Delay, d1	11.3	13.1		11.1	12.3		12.2	13.3		12.3	13.0	11.7
Progression Factor	1.85	1.74		1.02	1.08		1.46	1.49		0.42	0.46	0.37
Incremental Delay, d2	2.8	1.3		3.6	1.0		0.8	0.6		1.1	0.5	0.2
Delay (s)	23.6	23.9		14.9	14.3		18.6	20.4		6.3	6.5	4.6
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		23.9			14.4			20.2			6.2	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	751	43	51	600	34	48	582	70	0	293	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	0.90
Flpb, ped/bikes	0.97	1.00		0.97	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1547	3135		1549	3143			3160	1330		1616	1229
Flt Permitted	0.32	1.00		0.24	1.00			0.90	1.00		1.00	1.00
Satd. Flow (perm)	527	3135		384	3143			2865	1330		1616	1229
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	816	47	55	652	37	52	633	76	0	318	107
RTOR Reduction (vph)	0	6	0	0	6	0	0	0	32	0	0	52
Lane Group Flow (vph)	46	857	0	55	683	0	0	685	44	0	318	55
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	30.0
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	225	1343		164	1347			1227	570		692	526
v/s Ratio Prot		c0.27			0.22						0.20	
v/s Ratio Perm	0.09			0.14				c0.24	0.03			0.04
v/c Ratio	0.20	0.64		0.34	0.51			0.56	0.08		0.46	0.10
Uniform Delay, d1	12.5	15.7		13.3	14.6			15.0	11.8		14.2	12.0
Progression Factor	1.54	1.58		1.49	1.55			0.45	0.27		1.58	2.96
Incremental Delay, d2	1.8	2.0		5.3	1.3			1.6	0.2		1.9	0.3
Delay (s)	21.1	26.8		25.1	24.0			8.4	3.4		24.4	35.8
Level of Service	C	C		C	C			A	A		C	D
Approach Delay (s)		26.5			24.1			7.9			27.2	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	593	83	29	380	40	61	719	78	76	480	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3127		1593	3140		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.25	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3127		624	3140		422	3185	1425	425	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	645	90	32	413	43	66	782	85	83	522	135
RTOR Reduction (vph)	0	15	0	0	11	0	0	0	52	0	0	83
Lane Group Flow (vph)	122	720	0	32	445	0	66	782	33	83	522	52
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1460		211	1063		162	1228	549	163	646	549
v/s Ratio Prot	c0.08	c0.23			0.14			0.25			c0.31	
v/s Ratio Perm				0.05			0.16		0.02	0.20		0.04
v/c Ratio	0.98	0.49		0.15	0.42		0.41	0.64	0.06	0.51	0.81	0.09
Uniform Delay, d1	32.2	12.9		16.1	17.8		15.7	17.5	13.5	16.4	19.2	13.7
Progression Factor	0.42	1.13		1.00	1.00		0.65	0.64	0.44	1.41	1.42	4.08
Incremental Delay, d2	64.5	1.0		1.5	1.2		6.7	2.3	0.2	10.1	9.7	0.3
Delay (s)	77.8	15.5		17.7	19.1		16.8	13.5	6.1	33.3	37.0	56.2
Level of Service	E	B		B	B		B	B	A	C	D	E
Approach Delay (s)		24.4			19.0			13.0			40.1	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	23	23	51	34	72	37	1909	9	9	164	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1425	1593	3137	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1425	165	3137	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	25	25	55	37	78	40	2075	10	10	178	20
RTOR Reduction (vph)	0	0	20	0	0	73	0	0	4	0	7	0
Lane Group Flow (vph)	30	25	5	55	37	5	40	2075	6	10	191	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Effective Green, g (s)	15.3	13.8	19.2	7.1	5.6	5.6	5.4	51.1	51.1	40.7	40.7	
Actuated g/C Ratio	0.17	0.15	0.21	0.08	0.06	0.06	0.06	0.57	0.57	0.45	0.45	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	525	256	304	125	198	88	95	2598	809	74	1418	
v/s Ratio Prot	0.01	c0.01	0.00	c0.03	0.01		0.03	c0.45			0.06	
v/s Ratio Perm			0.00			0.00			0.00	0.06		
v/c Ratio	0.06	0.10	0.02	0.44	0.19	0.06	0.42	0.80	0.01	0.14	0.13	
Uniform Delay, d1	31.3	32.7	28.0	39.6	40.0	39.7	40.8	15.4	8.4	14.4	14.4	
Progression Factor	1.00	1.00	1.00	0.77	0.76	1.00	1.00	1.00	1.00	1.19	1.24	
Incremental Delay, d2	0.0	0.2	0.0	2.5	0.5	0.3	3.0	2.7	0.0	3.6	0.2	
Delay (s)	31.4	32.9	28.0	32.8	31.1	40.0	43.8	18.1	8.5	20.8	18.0	
Level of Service	C	C	C	C	C	D	D	B	A	C	B	
Approach Delay (s)		30.8			35.7			18.5			18.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	9	49	232	0	0	0	0	0	433	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1450	1593	3185						4577	1425
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1450	1593	3185						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	10	53	252	0	0	0	0	0	471	90
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	0	0	4	53	252	0	0	0	0	0	471	36
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			35.4	5.1	44.0						36.1	36.1
Effective Green, g (s)			35.4	5.1	44.0						36.1	36.1
Actuated g/C Ratio			0.39	0.06	0.49						0.40	0.40
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			570	90	1557						1835	571
v/s Ratio Prot				c0.03	c0.08						c0.10	
v/s Ratio Perm			0.00									0.03
v/c Ratio			0.01	0.59	0.16						0.26	0.06
Uniform Delay, d1			16.6	41.4	12.8						18.0	16.6
Progression Factor			1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2			0.0	9.5	0.2						0.3	0.2
Delay (s)			16.6	50.9	13.0						18.3	16.8
Level of Service			B	D	B						B	B
Approach Delay (s)		16.6			19.6			0.0			18.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	222	102	19	219	0	0	158	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					0.99			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.96			1.00			0.97	
Flt Protected					0.99			1.00			1.00	
Satd. Flow (prot)					3019			3172			3095	
Flt Permitted					0.99			0.93			1.00	
Satd. Flow (perm)					3019			2958			3095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	50	241	111	21	238	0	0	172	36
RTOR Reduction (vph)	0	0	0	0	57	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	345	0	0	259	0	0	194	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					17.2			43.6			43.6	
Effective Green, g (s)					17.2			43.6			43.6	
Actuated g/C Ratio					0.25			0.62			0.62	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					741			1842			1927	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.11			c0.09				
v/c Ratio					0.47			0.14			0.10	
Uniform Delay, d1					22.5			5.5			5.3	
Progression Factor					1.14			1.00			1.00	
Incremental Delay, d2					2.1			0.2			0.1	
Delay (s)					27.7			5.6			5.4	
Level of Service					C			A			A	
Approach Delay (s)		0.0			27.7			5.6			5.4	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	81	236	0	0	0	0	0	675	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.89
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	3185						4577	1265
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	3185						4577	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	88	257	0	0	0	0	0	734	61
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	0	0	0	88	257	0	0	0	0	0	734	31
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	1146						2314	639
v/s Ratio Prot					c0.08						c0.16	
v/s Ratio Perm				0.06								0.02
v/c Ratio				0.17	0.22						0.32	0.05
Uniform Delay, d1				15.3	15.6						10.2	8.8
Progression Factor				0.50	0.52						1.00	1.00
Incremental Delay, d2				0.7	0.4						0.4	0.1
Delay (s)				8.4	8.5						10.5	8.9
Level of Service				A	A						B	A
Approach Delay (s)		0.0			8.5			0.0			10.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	227	64	78	1420	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					3185	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					3185	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	247	70	85	1543	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	247	54	0	1614	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1192	533		2243				
v/s Ratio Prot					c0.08							
v/s Ratio Perm						0.04		0.35				
v/c Ratio					0.21	0.10		0.72				
Uniform Delay, d1					14.9	14.2		14.0				
Progression Factor					1.59	1.86		1.00				
Incremental Delay, d2					0.4	0.4		2.0				
Delay (s)					24.0	26.9		16.0				
Level of Service					C	C		B				
Approach Delay (s)		0.0			24.6			16.0			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	25	213	37	27	405	0	0	457	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.93
Flpb, ped/bikes				0.93	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1488	3099		1549	3185			3185	1328
Flt Permitted				0.95	1.00		0.45	1.00			1.00	1.00
Satd. Flow (perm)				1488	3099		738	3185			3185	1328
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	27	232	40	29	440	0	0	497	43
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	27	252	0	29	440	0	0	497	26
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				21.0	21.0		43.0	43.0			43.0	43.0
Effective Green, g (s)				21.0	21.0		43.0	43.0			43.0	43.0
Actuated g/C Ratio				0.30	0.30		0.61	0.61			0.61	0.61
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				446	929		453	1956			1956	815
v/s Ratio Prot					c0.08			0.14			c0.16	
v/s Ratio Perm				0.02			0.04					0.02
v/c Ratio				0.06	0.27		0.06	0.22			0.25	0.03
Uniform Delay, d1				17.5	18.7		5.4	6.0			6.2	5.3
Progression Factor				0.54	0.46		1.00	1.00			0.63	0.33
Incremental Delay, d2				0.3	0.7		0.3	0.3			0.3	0.1
Delay (s)				9.7	9.4		5.7	6.3			4.2	1.8
Level of Service				A	A		A	A			A	A
Approach Delay (s)		0.0			9.4			6.3			4.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	178	33	70	725	0	0	385	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.82
Flpb, ped/bikes					0.93	1.00	0.92	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					2934	984	1470	3185			1616	1122
Flt Permitted					0.99	1.00	0.42	1.00			1.00	1.00
Satd. Flow (perm)					2934	984	656	3185			1616	1122
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	193	36	76	788	0	0	418	80
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	36
Lane Group Flow (vph)	0	0	0	0	236	13	76	788	0	0	418	45
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					1089	365	323	1569			796	552
v/s Ratio Prot								0.25			c0.26	
v/s Ratio Perm					0.08	0.01	0.12					0.04
v/c Ratio					0.22	0.04	0.24	0.50			0.53	0.08
Uniform Delay, d1					15.0	14.0	10.2	12.0			12.1	9.4
Progression Factor					1.40	1.87	1.00	1.00			1.26	2.26
Incremental Delay, d2					0.4	0.2	1.7	1.2			2.3	0.3
Delay (s)					21.5	26.3	11.9	13.1			17.6	21.5
Level of Service					C	C	B	B			B	C
Approach Delay (s)		0.0			22.2			13.0			18.2	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	162	46	60	840	0	0	469	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3071		1593	3185			3110	
Flt Permitted					0.99		0.39	1.00			1.00	
Satd. Flow (perm)					3071		658	3185			3110	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	176	50	65	913	0	0	510	95
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	0	245	0	65	913	0	0	583	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					22.0		42.0	42.0			42.0	
Effective Green, g (s)					22.0		42.0	42.0			42.0	
Actuated g/C Ratio					0.31		0.60	0.60			0.60	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					965		394	1911			1866	
v/s Ratio Prot								c0.29			0.19	
v/s Ratio Perm					0.08		0.10					
v/c Ratio					0.25		0.16	0.48			0.31	
Uniform Delay, d1					17.9		6.2	7.9			6.9	
Progression Factor					1.00		1.00	1.00			1.59	
Incremental Delay, d2					0.6		0.9	0.9			0.3	
Delay (s)					18.5		7.1	8.7			11.2	
Level of Service					B		A	A			B	
Approach Delay (s)		0.0			18.5			8.6			11.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	729	197	191	697	101	205	537	214	116	312	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	0.99	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1507	3185	1097	1584	4383		1541	3185	1229	1484	3045	
Flt Permitted	0.31	1.00	1.00	0.19	1.00		0.44	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	499	3185	1097	317	4383		712	3185	1229	675	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	792	214	208	758	110	223	584	233	126	339	54
RTOR Reduction (vph)	0	0	141	0	21	0	0	0	15	0	14	0
Lane Group Flow (vph)	211	792	73	208	847	0	223	584	218	126	379	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1079	371	241	1972		350	1362	621	228	1031	
v/s Ratio Prot		0.25		c0.07	0.19		c0.04	0.18	0.03		0.12	
v/s Ratio Perm	c0.42		0.07	0.32			c0.24		0.15	0.19		
v/c Ratio	1.25	0.73	0.20	0.86	0.43		0.64	0.43	0.35	0.55	0.37	
Uniform Delay, d1	29.8	26.2	21.1	18.6	16.9		19.7	18.0	13.4	24.2	22.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	151.4	4.4	1.2	25.8	0.7		3.8	1.0	0.3	9.3	1.0	
Delay (s)	181.1	30.6	22.2	44.4	17.6		23.5	19.0	13.7	33.5	23.5	
Level of Service	F	C	C	D	B		C	B	B	C	C	
Approach Delay (s)		55.2			22.7			18.8			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	677	127	230	838	459	27	547	122	48	668	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1165	3090	3185	1230	1472	3185	1425	1539	3185	1132
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	290	3185	1165	3090	3185	1230	253	3185	1425	398	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	736	138	250	911	499	29	595	133	52	726	142
RTOR Reduction (vph)	0	0	94	0	0	40	0	0	118	0	0	55
Lane Group Flow (vph)	260	736	44	250	911	459	29	595	15	52	726	87
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	44.1	32.1	32.1	12.9	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	44.1	32.1	32.1	12.9	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.13	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	283	1022	373	398	1369	528	61	780	142	97	780	413
v/s Ratio Prot	c0.11	0.23		0.08	0.29			0.19	0.01		c0.23	0.03
v/s Ratio Perm	c0.29		0.04			c0.37	0.11			0.13		0.05
v/c Ratio	0.92	0.72	0.12	0.63	0.67	0.87	0.48	0.76	0.11	0.54	0.93	0.21
Uniform Delay, d1	20.7	30.0	24.0	41.3	22.8	25.9	32.3	35.1	40.9	32.8	36.9	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	32.6	4.4	0.6	3.1	1.2	14.1	24.3	7.0	0.3	19.6	19.2	0.3
Delay (s)	53.3	34.4	24.6	44.4	24.0	40.0	56.5	42.0	41.3	52.4	56.1	22.1
Level of Service	D	C	C	D	C	D	E	D	D	D	E	C
Approach Delay (s)		37.5			31.9			42.4			50.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	786	40	64	906	603	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2381
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2381
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	854	43	70	985	655	951
RTOR Reduction (vph)	0	25	0	0	0	17
Lane Group Flow (vph)	854	18	70	985	655	934
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	37.2	37.2	15.1	55.8	24.4	39.5
Effective Green, g (s)	37.2	37.2	15.1	55.8	24.4	39.5
Actuated g/C Ratio	0.41	0.41	0.17	0.62	0.27	0.44
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1316	433	267	1974	837	1044
v/s Ratio Prot	c0.27		0.04	0.31	0.21	c0.15
v/s Ratio Perm		0.02				0.24
v/c Ratio	0.65	0.04	0.26	0.50	0.78	0.89
Uniform Delay, d1	21.2	15.8	32.6	9.4	30.3	23.3
Progression Factor	1.00	1.00	0.64	1.98	1.00	1.00
Incremental Delay, d2	2.5	0.2	0.4	0.7	4.8	10.0
Delay (s)	23.7	15.9	21.1	19.3	35.2	33.3
Level of Service	C	B	C	B	D	C
Approach Delay (s)	23.3			19.5	34.1	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	988	31	33	610	61	120	560	43	85	783	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	3185	1143	1535	3185	1196	1593	3132		1576	3185	976
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.95	1.00		0.39	1.00	1.00
Satd. Flow (perm)	323	3185	1143	320	3185	1196	1593	3132		646	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1074	34	36	663	66	130	609	47	92	851	157
RTOR Reduction (vph)	0	0	20	0	0	49	0	6	0	0	0	108
Lane Group Flow (vph)	259	1074	14	36	663	17	130	650	0	92	851	49
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	36.8	36.8	36.8	23.7	23.7	23.7	11.6	34.8		32.8	28.0	28.0
Effective Green, g (s)	36.8	36.8	36.8	23.7	23.7	23.7	11.6	34.8		32.8	28.0	28.0
Actuated g/C Ratio	0.41	0.41	0.41	0.26	0.26	0.26	0.13	0.39		0.36	0.31	0.31
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	273	1302	467	84	838	314	205	1211		285	990	303
v/s Ratio Prot	c0.11	0.34			0.21		c0.08	0.21		0.02	c0.27	
v/s Ratio Perm	c0.28		0.01	0.11		0.01				0.10		0.05
v/c Ratio	0.95	0.82	0.03	0.43	0.79	0.06	0.63	0.54		0.32	0.86	0.16
Uniform Delay, d1	20.9	23.7	15.9	27.5	30.8	24.8	37.2	21.4		19.3	29.2	22.5
Progression Factor	1.09	1.09	1.00	0.91	0.98	1.00	0.69	1.67		1.00	1.00	1.00
Incremental Delay, d2	30.1	3.9	0.1	12.9	6.4	0.3	5.3	0.4		0.7	7.6	0.3
Delay (s)	52.9	29.8	16.0	38.0	36.7	25.1	31.0	36.0		20.0	36.7	22.7
Level of Service	D	C	B	D	D	C	C	D		B	D	C
Approach Delay (s)		33.9			35.7			35.2			33.3	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1036	79	43	676	76	58	548	121	78	407	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1573	3185	1071	1512	3185	1050	1531	4288		1497	2935	
Flt Permitted	0.25	1.00	1.00	0.25	1.00	1.00	0.28	1.00		0.28	1.00	
Satd. Flow (perm)	413	3185	1071	402	3185	1050	449	4288		442	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1126	86	47	735	83	63	596	132	85	442	180
RTOR Reduction (vph)	0	0	32	0	0	48	0	28	0	0	49	0
Lane Group Flow (vph)	245	1126	54	47	735	35	63	700	0	85	573	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1886	634	169	1344	443	144	1381		142	945	
v/s Ratio Prot	0.08	c0.35			0.23			0.16			c0.20	
v/s Ratio Perm	c0.28		0.05	0.12		0.03	0.14			0.19		
v/c Ratio	0.61	0.60	0.08	0.28	0.55	0.08	0.44	0.51		0.60	0.61	
Uniform Delay, d1	10.6	11.6	7.9	17.0	19.5	15.5	24.1	24.7		25.6	25.7	
Progression Factor	1.45	1.66	2.29	0.56	0.61	0.72	1.09	1.06		1.00	1.00	
Incremental Delay, d2	2.0	1.1	0.2	3.6	1.4	0.3	9.2	1.3		17.3	2.9	
Delay (s)	17.3	20.3	18.3	13.2	13.3	11.6	35.3	27.5		42.9	28.6	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		19.6			13.1			28.2			30.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1049	50	35	637	5	0	0	0	84	456	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1571	3185	1027	1514	3177						4449	1264
Flt Permitted	0.27	1.00	1.00	0.22	1.00						0.99	1.00
Satd. Flow (perm)	454	3185	1027	346	3177						4449	1264
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1140	54	38	692	5	0	0	0	91	496	177
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	0	0	0	27
Lane Group Flow (vph)	107	1140	29	38	696	0	0	0	0	0	587	150
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Effective Green, g (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	342	1691	545	140	1291						1557	557
v/s Ratio Prot	0.03	c0.36			0.22							0.02
v/s Ratio Perm	0.14		0.03	0.11							0.13	0.09
v/c Ratio	0.31	0.67	0.05	0.27	0.54						0.38	0.27
Uniform Delay, d1	11.5	15.4	10.2	17.8	20.3						21.9	15.9
Progression Factor	1.17	1.02	2.10	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	1.8	0.1	4.7	1.6						0.7	0.3
Delay (s)	13.9	17.5	21.5	22.5	21.9						22.6	16.2
Level of Service	B	B	C	C	C						C	B
Approach Delay (s)		17.3			21.9			0.0			21.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	9	24	27	43	97	19	403	16	11	887	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2613		1593	2505		1576	3149		1471	3185	1341
Flt Permitted	0.95	1.00		0.95	1.00		0.22	1.00		0.48	1.00	1.00
Satd. Flow (perm)	1593	2613		1593	2505		371	3149		736	3185	1341
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	10	26	29	47	105	21	438	17	12	964	95
RTOR Reduction (vph)	0	18	0	0	84	0	0	2	0	0	0	25
Lane Group Flow (vph)	107	18	0	29	68	0	21	453	0	12	964	70
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Effective Green, g (s)	9.8	26.2		2.0	18.4		47.1	47.1		47.1	47.1	56.9
Actuated g/C Ratio	0.11	0.29		0.02	0.20		0.52	0.52		0.52	0.52	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	173	760		35	512		194	1647		385	1666	847
v/s Ratio Prot	c0.07	0.01		0.02	c0.03			0.14			c0.30	0.01
v/s Ratio Perm							0.06			0.02		0.04
v/c Ratio	0.62	0.02		0.83	0.13		0.11	0.27		0.03	0.58	0.08
Uniform Delay, d1	38.3	22.8		43.8	29.3		10.8	11.9		10.4	14.7	6.4
Progression Factor	1.00	1.00		1.00	1.00		1.14	1.26		1.00	1.00	1.00
Incremental Delay, d2	6.4	0.0		84.5	0.1		1.1	0.4		0.2	1.5	0.0
Delay (s)	44.8	22.8		128.3	29.4		13.4	15.4		10.5	16.1	6.5
Level of Service	D	C		F	C		B	B		B	B	A
Approach Delay (s)		39.2			45.2			15.3			15.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	658	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.95	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3157		1569	3116		1508	3185	1300
Flt Permitted		1.00	1.00		1.00		0.18	1.00		0.26	1.00	1.00
Satd. Flow (perm)		1676	1277		3157		290	3116		411	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	182	0	323	13	86	715	47	34	937	34
RTOR Reduction (vph)	0	0	15	0	3	0	0	5	0	0	0	21
Lane Group Flow (vph)	0	432	167	0	333	0	86	757	0	34	937	13
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1543		114	1232		162	1259	514
v/s Ratio Prot		c0.26			0.11			0.24			0.29	
v/s Ratio Perm			0.13				c0.30			0.08		0.01
v/c Ratio		0.53	0.27		0.22		0.75	0.61		0.21	0.74	0.03
Uniform Delay, d1		15.8	13.5		13.1		23.4	21.7		17.9	23.3	16.6
Progression Factor		1.00	1.00		0.77		0.90	0.88		0.44	0.67	0.33
Incremental Delay, d2		2.4	1.1		0.3		34.1	2.1		1.9	2.6	0.1
Delay (s)		18.3	14.6		10.3		55.1	21.3		9.8	18.3	5.6
Level of Service		B	B		B		E	C		A	B	A
Approach Delay (s)		17.2			10.3			24.7			17.6	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	566	77	0	465	40	107	466	80	0	428	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	0.88
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1616	1212
Flt Permitted		1.00	1.00		1.00	1.00	0.25	1.00			1.00	1.00
Satd. Flow (perm)		1676	1013		1676	1346	422	3025			1616	1212
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	615	84	0	505	43	116	507	87	0	465	47
RTOR Reduction (vph)	0	0	45	0	0	23	0	17	0	0	0	33
Lane Group Flow (vph)	0	615	39	0	505	20	116	577	0	0	465	14
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Actuated Green, G (s)		41.8	41.8		41.8	41.8	37.8	37.8			27.7	27.7
Effective Green, g (s)		41.8	41.8		41.8	41.8	37.8	37.8			27.7	27.7
Actuated g/C Ratio		0.46	0.46		0.46	0.46	0.42	0.42			0.31	0.31
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	5.4
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		778	470		778	625	238	1270			497	373
v/s Ratio Prot		c0.37			0.30		0.03	c0.19			c0.29	
v/s Ratio Perm			0.04			0.01	0.18					0.01
v/c Ratio		0.79	0.08		0.65	0.03	0.49	0.45			0.94	0.04
Uniform Delay, d1		20.4	13.4		18.5	13.1	30.3	18.7			30.3	21.8
Progression Factor		0.67	0.07		0.24	2.49	0.84	1.01			0.88	3.28
Incremental Delay, d2		7.6	0.3		2.9	0.1	1.5	0.2			22.7	0.0
Delay (s)		21.3	1.2		7.3	32.7	27.0	19.1			49.3	71.6
Level of Service		C	A		A	C	C	B			D	E
Approach Delay (s)		18.9			9.3			20.4			51.3	
Approach LOS		B			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	463	169	54	509	0	0	0	0	16	493	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1499	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.31	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	483	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	503	184	59	553	0	0	0	0	17	536	27
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	503	165	59	553	0	0	0	0	17	536	12
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	215	748					614	1433	275
v/s Ratio Prot		0.30			c0.33						c0.17	
v/s Ratio Perm			0.15	0.12						0.01		0.02
v/c Ratio		0.67	0.33	0.27	0.74					0.03	0.37	0.04
Uniform Delay, d1		19.7	16.2	15.7	20.6					13.8	16.4	13.9
Progression Factor		1.28	1.56	1.00	1.00					0.22	0.20	0.00
Incremental Delay, d2		3.2	1.2	3.1	6.5					0.1	0.7	0.3
Delay (s)		28.5	26.3	18.8	27.0					3.1	4.0	0.3
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		27.9			26.2			0.0			3.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	154	114	23	278	852	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.89	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1420	3185	3185	748
Flt Permitted	0.95	1.00	0.28	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	417	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	124	25	302	926	82
RTOR Reduction (vph)	0	46	0	0	0	22
Lane Group Flow (vph)	167	78	25	302	926	60
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.5	19.5	60.8	60.8	60.8	60.8
Effective Green, g (s)	19.5	19.5	60.8	60.8	60.8	60.8
Actuated g/C Ratio	0.22	0.22	0.68	0.68	0.68	0.68
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	307	408	281	2151	2151	505
v/s Ratio Prot				0.09	c0.29	
v/s Ratio Perm	c0.12	0.04	0.06			0.08
v/c Ratio	0.54	0.19	0.09	0.14	0.43	0.12
Uniform Delay, d1	31.3	28.8	5.0	5.2	6.7	5.1
Progression Factor	1.00	1.00	1.00	1.00	2.36	4.51
Incremental Delay, d2	2.0	0.2	0.6	0.1	0.5	0.4
Delay (s)	33.3	29.0	5.7	5.4	16.3	23.6
Level of Service	C	C	A	A	B	C
Approach Delay (s)	31.5			5.4	16.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	1368	165	56	440	0	0	1054	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3092		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3092		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	1487	179	61	478	0	0	1146	215
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	103	1656	0	61	478	0	0	1146	202
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1752		74	1167			1167	426
v/s Ratio Prot					c0.54			0.15			c0.36	
v/s Ratio Perm				0.07			0.30					0.17
v/c Ratio				0.13	0.94		0.82	0.41			0.98	0.47
Uniform Delay, d1				9.1	18.2		25.9	21.2			28.2	21.9
Progression Factor				1.27	0.95		1.30	1.34			1.31	1.49
Incremental Delay, d2				0.2	9.5		55.2	0.9			20.3	3.2
Delay (s)				11.8	26.8		88.9	29.3			57.3	35.8
Level of Service				B	C		F	C			E	D
Approach Delay (s)		0.0			25.9			36.0			53.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	232	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.95			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3004			1616	941
Flt Permitted				0.95	1.00	1.00		0.75			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2284			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	1276	85	145	454	0	0	252	92
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	0	41	1276	47	0	599	0	0	252	45
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		951			673	392
v/s Ratio Prot					c0.40						0.16	
v/s Ratio Perm				0.04		0.04		c0.26				0.05
v/c Ratio				0.09	0.84	0.09		0.63			0.37	0.12
Uniform Delay, d1				12.7	20.3	12.7		20.8			18.1	16.1
Progression Factor				0.95	1.19	1.61		0.28			1.00	1.23
Incremental Delay, d2				0.3	4.4	0.2		1.1			0.9	0.4
Delay (s)				12.4	28.5	20.6		7.0			19.2	20.1
Level of Service				B	C	C		A			B	C
Approach Delay (s)		0.0			27.5			7.0			19.4	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	267	842	0	0	0	0	0	765	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	290	915	0	0	0	0	0	832	301
RTOR Reduction (vph)	0	0	0	91	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	199	915	0	0	0	0	0	832	285
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.29						0.18	
v/s Ratio Perm				0.15								c0.25
v/c Ratio				0.42	0.80						0.34	0.47
Uniform Delay, d1				21.8	26.0						11.8	12.9
Progression Factor				1.00	1.00						1.46	1.54
Incremental Delay, d2				2.7	6.0						0.4	2.5
Delay (s)				24.6	32.1						17.6	22.3
Level of Service				C	C						B	C
Approach Delay (s)		0.0			30.3			0.0			18.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	77	1111	0	0	113	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	1208	0	0	123	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	84	1208	0	0	123	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	55.1	74.6			8.9	
Effective Green, g (s)	55.1	74.6			8.9	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1891	5628			305	
v/s Ratio Prot	0.03	c0.18				
v/s Ratio Perm					c0.04	
v/c Ratio	0.04	0.21			0.40	
Uniform Delay, d1	7.0	1.6			38.1	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.0	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.0	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	939	134	0	0	0	0	1240	303	85	199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.98		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4374		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4374		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1021	146	0	0	0	0	1348	329	92	216	0
RTOR Reduction (vph)	0	0	97	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	100	1021	49	0	0	0	0	1648	0	92	216	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Effective Green, g (s)	30.3	30.3	30.3					40.2		5.6	49.8	
Actuated g/C Ratio	0.34	0.34	0.34					0.45		0.06	0.55	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	377	1941	438					1953		192	927	
v/s Ratio Prot		c0.18						c0.38		c0.03	0.13	
v/s Ratio Perm	0.09		0.04									
v/c Ratio	0.27	0.53	0.11					0.84		0.48	0.23	
Uniform Delay, d1	21.7	24.1	20.6					22.1		40.8	10.3	
Progression Factor	1.02	1.03	1.36					0.47		1.00	1.00	
Incremental Delay, d2	1.7	1.0	0.5					4.0		1.9	0.6	
Delay (s)	23.9	25.7	28.5					14.5		42.7	10.9	
Level of Service	C	C	C					B		D	B	
Approach Delay (s)		25.9			0.0			14.5			20.4	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	1292	111	0	0	0	0	695	89	87	869	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.94	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5641						3028		1496	3185	
Flt Permitted		1.00						1.00		0.25	1.00	
Satd. Flow (perm)		5641						3028		389	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	1404	121	0	0	0	0	755	97	95	945	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1539	0	0	0	0	0	849	0	95	945	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2381						1480		190	1557	
v/s Ratio Prot								0.28			c0.30	
v/s Ratio Perm		0.27								0.24		
v/c Ratio		0.65						0.57		0.50	0.61	
Uniform Delay, d1		20.7						16.3		15.6	16.7	
Progression Factor		0.77						0.66		0.26	0.13	
Incremental Delay, d2		1.2						1.5		3.7	0.7	
Delay (s)		17.2						12.2		7.7	2.8	
Level of Service		B						B		A	A	
Approach Delay (s)		17.2			0.0			12.2			3.2	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	323	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5374						2736			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5374						2736			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	1339	77	0	0	0	0	451	171	0	351	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1556	0	0	0	0	0	619	0	0	351	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2567						1115			658	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.29										
v/c Ratio		0.61						0.56			0.53	
Uniform Delay, d1		17.3						20.4			20.2	
Progression Factor		0.39						0.97			1.13	
Incremental Delay, d2		0.8						1.9			3.0	
Delay (s)		7.6						21.7			25.8	
Level of Service		A						C			C	
Approach Delay (s)		7.6			0.0			21.7			25.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1304	189	0	0	0	0	0	0	286	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.95	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5449									4311	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5449									4311	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1417	205	0	0	0	0	0	0	311	1002	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1594	0	0	0	0	0	0	0	0	1301	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1892	
v/s Ratio Prot		c0.29										
v/s Ratio Perm											0.30	
v/c Ratio		0.64									0.69	
Uniform Delay, d1		18.7									20.3	
Progression Factor		1.37									0.53	
Incremental Delay, d2		1.1									2.0	
Delay (s)		26.7									12.7	
Level of Service		C									B	
Approach Delay (s)		26.7			0.0			0.0			12.7	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	376	1274	247	0	0	0	0	777	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5489						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5489						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	409	1385	268	0	0	0	0	845	246
RTOR Reduction (vph)	0	0	0	48	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	291	1679	0	0	0	0	0	845	233
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2439						2034	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.39	0.31							c0.25
v/c Ratio				0.87	0.69						0.42	0.56
Uniform Delay, d1				22.7	20.0						17.0	18.5
Progression Factor				1.32	1.25						1.00	1.00
Incremental Delay, d2				23.7	1.5						0.6	5.4
Delay (s)				53.6	26.5						17.7	23.9
Level of Service				D	C						B	C
Approach Delay (s)		0.0			31.0			0.0			19.1	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	934	77	557	1197	0	0	0	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5522		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5522		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1015	84	605	1301	0	0	0	383
RTOR Reduction (vph)	0	0	0	0	11	0	438	0	0	0	0	360
Lane Group Flow (vph)	0	0	0	0	1088	0	167	1301	0	0	0	23
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2018		851	2013				153
v/s Ratio Prot					c0.20		0.05	c0.28				
v/s Ratio Perm												c0.01
v/c Ratio					0.54		0.20	0.65				0.15
Uniform Delay, d1					22.6		25.0	19.7				40.0
Progression Factor					1.06		4.45	1.58				1.00
Incremental Delay, d2					0.9		0.4	1.2				0.5
Delay (s)					24.9		111.5	32.4				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			24.9			57.5			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	779	136	71	666	0	0	792	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.93	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1474	3185			3185	936
Flt Permitted				0.95	1.00		0.27	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		423	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	847	148	77	724	0	0	861	163
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	90	960	0	77	724	0	0	861	152
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		235	1776			1776	522
v/s Ratio Prot					c0.18			0.23			c0.27	
v/s Ratio Perm				0.10			0.18					0.16
v/c Ratio				0.31	0.54		0.33	0.41			0.48	0.29
Uniform Delay, d1				22.3	24.4		10.8	11.4			12.1	10.5
Progression Factor				0.32	0.30		1.50	1.48			1.97	2.10
Incremental Delay, d2				2.6	1.1		3.4	0.6			0.8	1.1
Delay (s)				9.8	8.3		19.5	17.5			24.6	23.2
Level of Service				A	A		B	B			C	C
Approach Delay (s)		0.0			8.4			17.7			24.3	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	862	61	43	412	0	0	335	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5404			3110			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5404			2774			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	937	66	47	448	0	0	364	64
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1034	0	0	495	0	0	364	52
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1402			816	404
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.19			0.18				0.07
v/c Ratio					0.49			0.35			0.45	0.13
Uniform Delay, d1					20.8			13.4			14.2	11.8
Progression Factor					0.50			1.47			1.83	2.15
Incremental Delay, d2					0.8			0.6			1.5	0.6
Delay (s)					11.1			20.3			27.5	25.9
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.1			20.3			27.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	136	647	0	0	0	0	0	855	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	148	703	0	0	0	0	0	929	202
RTOR Reduction (vph)	0	0	0	0	43	0	0	0	0	0	0	50
Lane Group Flow (vph)	0	0	0	0	808	0	0	0	0	0	929	152
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.20	
v/s Ratio Perm					0.14							0.11
v/c Ratio					0.36						0.40	0.21
Uniform Delay, d1					19.4						13.8	12.3
Progression Factor					1.00						0.46	0.26
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.8						6.7	3.7
Level of Service					B						A	A
Approach Delay (s)		0.0			19.8			0.0			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1485	154	0	0	0	0	0	0	183	1049	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.95	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5462	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5462	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1614	167	0	0	0	0	0	0	199	1140	0
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1614	148	0	0	0	0	0	0	0	1327	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2451	
v/s Ratio Prot		c0.28										
v/s Ratio Perm			0.16								0.24	
v/c Ratio		0.63	0.36								0.54	
Uniform Delay, d1		19.1	16.4								18.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	2.4								0.7	
Delay (s)		20.2	18.8								21.5	
Level of Service		C	B								C	
Approach Delay (s)		20.1			0.0			0.0			21.5	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	553	1085	0	0	0	0	0	1354	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5049						6395				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5049						6395				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	601	1179	0	0	0	0	0	1472	208	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	331	1425	0	0	0	0	0	1663	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2255						2863				
v/s Ratio Prot								c0.26				
v/s Ratio Perm	c0.39	0.28										
v/c Ratio	0.88	0.63						0.58				
Uniform Delay, d1	22.7	19.2						18.5				
Progression Factor	0.47	0.39						0.79				
Incremental Delay, d2	20.3	1.1						0.7				
Delay (s)	31.1	8.6						15.3				
Level of Service	C	A						B				
Approach Delay (s)		12.9			0.0			15.3			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	136	0	0	0	0	721	101	87	743	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.29	1.00	
Satd. Flow (perm)		5664						3185	1425	483	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1096	148	0	0	0	0	784	110	95	808	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	0	1217	0	0	0	0	0	784	99	95	808	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	262	2491	
v/s Ratio Prot		c0.21						c0.25			0.18	
v/s Ratio Perm									0.07	0.20		
v/c Ratio		0.55						0.45	0.13	0.36	0.32	
Uniform Delay, d1		21.4						12.4	10.0	11.6	11.3	
Progression Factor		0.28						0.44	0.43	0.36	0.40	
Incremental Delay, d2		0.8						0.7	0.3	3.5	0.3	
Delay (s)		6.9						6.1	4.6	7.7	4.9	
Level of Service		A						A	A	A	A	
Approach Delay (s)		6.9			0.0			5.9			5.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	139	941	116	0	0	0	0	466	95	0	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5150						2906			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5150						2906			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	1023	126	0	0	0	0	507	103	0	407	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1280	0	0	0	0	0	605	0	0	407	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1281			712	
v/s Ratio Prot								0.21			c0.25	
v/s Ratio Perm		0.25										
v/c Ratio		0.56						0.47			0.57	
Uniform Delay, d1		18.5						17.8			18.8	
Progression Factor		0.27						1.54			1.05	
Incremental Delay, d2		0.9						1.1			3.0	
Delay (s)		5.9						28.4			22.8	
Level of Service		A						C			C	
Approach Delay (s)		5.9			0.0			28.4			22.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	976	121	0	0	0	0	0	0	206	858	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4533	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1061	132	0	0	0	0	0	0	224	933	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	0	25	0
Lane Group Flow (vph)	0	1169	0	0	0	0	0	0	0	0	1132	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2039	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.25	
v/c Ratio		0.46									0.56	
Uniform Delay, d1		17.3									18.1	
Progression Factor		0.19									0.88	
Incremental Delay, d2		0.5									1.0	
Delay (s)		3.8									17.0	
Level of Service		A									B	
Approach Delay (s)		3.8			0.0			0.0			17.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	246	0	0	420	133	259	1322	67	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	0.09			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	130			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	130			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	267	0	0	457	145	282	1437	73	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	46	0	0	0
Lane Group Flow (vph)	102	267	0	0	457	13	282	1437	27	0	0	0
Confl. Peds. (#/hr)									1647			
Confl. Bikes (#/hr)									34			
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Effective Green, g (s)	7.0	40.5			29.5	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.45			0.33	0.09	0.36	0.36	0.36			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	240	827			1242	128	580	1668	47			
v/s Ratio Prot	c0.03	0.03			c0.03	0.01		c0.31				
v/s Ratio Perm		0.14			0.11		0.18		0.20			
v/c Ratio	0.42	0.32			0.37	0.10	0.49	0.86	0.57			
Uniform Delay, d1	39.6	15.9			23.1	37.6	22.1	26.5	22.9			
Progression Factor	1.00	1.00			0.40	0.98	1.28	1.16	1.00			
Incremental Delay, d2	1.2	0.2			0.2	0.3	0.7	1.6	11.8			
Delay (s)	40.8	16.2			9.3	37.0	29.1	32.4	34.7			
Level of Service	D	B			A	D	C	C	C			
Approach Delay (s)		23.0			16.0			32.0			0.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	244	177	71	396	0	0	0	0	41	1248	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3058						5512	
Flt Permitted		1.00	1.00		0.85						1.00	
Satd. Flow (perm)		1676	932		2633						5512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	265	192	77	430	0	0	0	0	45	1357	76
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	265	180	0	507	0	0	0	0	0	1469	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1231						2339	
v/s Ratio Prot		0.16										
v/s Ratio Perm			c0.19		0.19						0.27	
v/c Ratio		0.34	0.41		0.41						0.63	
Uniform Delay, d1		15.1	15.8		15.8						20.3	
Progression Factor		0.64	0.58		0.27						1.00	
Incremental Delay, d2		1.1	2.8		1.0						1.3	
Delay (s)		10.8	12.0		5.2						21.6	
Level of Service		B	B		A						C	
Approach Delay (s)		11.3			5.2			0.0			21.6	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	277	57	0	424	75	66	301	64	37	314	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.97	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2715			3021	
Flt Permitted		1.00	1.00		1.00	1.00		0.83			0.88	
Satd. Flow (perm)		1616	762		3185	650		2280			2664	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	301	62	0	461	82	72	327	70	40	341	14
RTOR Reduction (vph)	0	0	9	0	0	11	0	5	0	0	1	0
Lane Group Flow (vph)	0	301	54	0	461	71	0	464	0	0	394	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		988			1154	
v/s Ratio Prot		c0.19			0.14							
v/s Ratio Perm			0.07			0.11		c0.20			0.15	
v/c Ratio		0.37	0.14		0.29	0.22		0.47			0.34	
Uniform Delay, d1		13.8	12.1		13.2	12.6		18.1			17.0	
Progression Factor		0.51	0.44		1.21	1.32		0.89			1.00	
Incremental Delay, d2		1.3	0.7		0.4	1.3		1.4			0.8	
Delay (s)		8.3	6.1		16.3	18.0		17.6			17.8	
Level of Service		A	A		B	B		B			B	
Approach Delay (s)		7.9			16.6			17.6			17.8	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	298	68	38	432	0	0	0	0	191	1147	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.79	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1253	1676					933	3185	959
Flt Permitted		1.00	1.00	0.48	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	633	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	324	74	41	470	0	0	0	0	208	1247	49
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	324	61	41	470	0	0	0	0	208	1247	36
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	281	744					415	1419	427
v/s Ratio Prot		0.19			c0.28						c0.39	
v/s Ratio Perm			0.07	0.06						0.22		0.04
v/c Ratio		0.44	0.17	0.15	0.63					0.50	0.88	0.08
Uniform Delay, d1		17.2	15.0	14.9	19.3					17.8	22.7	14.4
Progression Factor		1.33	1.43	0.44	0.39					2.08	1.96	2.81
Incremental Delay, d2		1.7	0.9	0.9	3.3					3.9	7.3	0.3
Delay (s)		24.6	22.3	7.4	10.9					40.9	52.0	40.8
Level of Service		C	C	A	B					D	D	D
Approach Delay (s)		24.2			10.6			0.0			50.1	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	514	0	0	450	150	107	1156	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5232				
Flt Permitted	0.38	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	630	1676			1676	803		5232				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	559	0	0	489	163	116	1257	101	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	46	559	0	0	489	153	0	1462	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	338	899			899	430		1871				
v/s Ratio Prot		c0.33			0.29							
v/s Ratio Perm	0.07					0.19		0.28				
v/c Ratio	0.14	0.62			0.54	0.36		0.78				
Uniform Delay, d1	10.4	14.5			13.6	11.9		25.8				
Progression Factor	0.72	0.69			1.91	2.07		1.04				
Incremental Delay, d2	0.8	3.0			1.8	1.7		0.3				
Delay (s)	8.3	12.9			27.8	26.4		27.2				
Level of Service	A	B			C	C		C				
Approach Delay (s)		12.6			27.4			27.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	410	59	20	424	105	0	693	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.89	
Flpb, ped/bikes	0.86	1.00	1.00	0.85	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1368	1676	801	1357	1676	799		3010			2759	
Flt Permitted	0.35	1.00	1.00	0.36	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	497	1676	801	512	1676	799		3010			2759	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	446	64	22	461	114	0	753	53	0	896	196
RTOR Reduction (vph)	0	0	4	0	0	2	0	5	0	0	4	0
Lane Group Flow (vph)	40	446	60	22	461	112	0	801	0	0	1088	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	237	800	382	244	800	381		1371			1256	
v/s Ratio Prot		0.27			c0.27			0.27			c0.39	
v/s Ratio Perm	0.08		0.08	0.04		0.14						
v/c Ratio	0.17	0.56	0.16	0.09	0.58	0.29		0.58			0.87	
Uniform Delay, d1	13.3	16.7	13.3	12.8	16.9	14.3		18.2			22.0	
Progression Factor	0.92	1.11	0.89	1.70	1.75	1.76		0.67			1.31	
Incremental Delay, d2	1.2	2.1	0.7	0.6	2.4	1.6		1.6			7.9	
Delay (s)	13.4	20.7	12.5	22.4	32.0	26.6		13.9			36.7	
Level of Service	B	C	B	C	C	C		B			D	
Approach Delay (s)		19.2			30.6			13.9			36.7	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	453	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	0.33
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	1.00
Satd. Flow (prot)	1368	1676	439	1593	1676	881		2964			1616	448
Flt Permitted	0.36	1.00	1.00	0.38	1.00	1.00		0.95			1.00	1.00
Satd. Flow (perm)	516	1676	439	636	1676	881		2810			1616	448
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	425	39	12	447	61	10	660	60	0	492	132
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	13
Lane Group Flow (vph)	26	425	21	12	447	43	0	726	0	0	492	119
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					4
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	39.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	0.44
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	5.6
Lane Grp Cap (vph)	229	746	195	283	746	392		1230			707	196
v/s Ratio Prot		0.25			c0.27						c0.30	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.26				0.27
v/c Ratio	0.11	0.57	0.11	0.04	0.60	0.11		0.59			0.70	0.61
Uniform Delay, d1	14.6	18.5	14.5	14.1	18.9	14.5		19.2			20.5	19.4
Progression Factor	1.08	1.27	1.72	0.87	1.09	1.26		0.75			0.45	0.37
Incremental Delay, d2	0.8	2.6	0.9	0.2	3.1	0.5		1.5			5.0	11.8
Delay (s)	16.5	26.2	26.0	12.5	23.6	18.8		15.8			14.1	18.9
Level of Service	B	C	C	B	C	B		B			B	B
Approach Delay (s)		25.7			22.8			15.8			15.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	69	56	365	0	0	0	0	62	759	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1362	1676						4383	618
Flt Permitted		1.00	1.00	0.37	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	530	1676						4383	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	75	61	397	0	0	0	0	67	825	135
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	432	55	61	397	0	0	0	0	0	892	60
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	225	713						1957	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.06	0.12							0.20	0.10
v/c Ratio		0.61	0.15	0.27	0.56						0.46	0.22
Uniform Delay, d1		20.0	15.9	16.8	19.5						17.3	15.3
Progression Factor		1.65	2.13	1.00	1.00						1.44	4.71
Incremental Delay, d2		3.2	0.8	2.9	3.1						0.6	1.5
Delay (s)		36.3	34.5	19.7	22.6						25.6	73.5
Level of Service		D	C	B	C						C	E
Approach Delay (s)		36.1			22.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1790	330	235	2044	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.81				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	6790				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	6790				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1946	359	255	2222	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	114	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1946	237	141	2222	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	2112				
v/s Ratio Prot					c0.34			c0.33				
v/s Ratio Perm						0.21	0.09					
v/c Ratio					0.77	0.48	0.29	1.05				
Uniform Delay, d1					21.2	17.8	23.4	31.0				
Progression Factor					1.00	1.00	0.93	1.03				
Incremental Delay, d2					2.3	3.3	1.3	34.4				
Delay (s)					23.5	21.2	23.1	66.2				
Level of Service					C	C	C	E				
Approach Delay (s)		0.0			23.1			61.8			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	1043	102	64	695	0	0	799	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.97		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.93	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4399		1487	3185			3185	975
Flt Permitted				0.95	1.00		0.25	1.00			1.00	1.00
Satd. Flow (perm)				1160	4399		397	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	1134	111	70	755	0	0	868	174
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	89	1232	0	70	755	0	0	868	172
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1710		216	1734			1734	530
v/s Ratio Prot					c0.28			0.24			c0.27	
v/s Ratio Perm				0.08			0.18					0.18
v/c Ratio				0.20	0.72		0.32	0.44			0.50	0.32
Uniform Delay, d1				18.2	23.3		11.3	12.2			12.8	11.3
Progression Factor				2.03	1.95		1.79	1.71			1.12	1.16
Incremental Delay, d2				0.9	2.4		3.6	0.7			0.7	1.0
Delay (s)				37.8	47.9		23.9	21.6			15.0	14.1
Level of Service				D	D		C	C			B	B
Approach Delay (s)		0.0			47.2			21.8			14.9	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	69	994	64	81	619	0	0	424	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5582			3167			1616	936
Flt Permitted					1.00			0.69			1.00	1.00
Satd. Flow (perm)					5582			2184			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	75	1080	70	88	673	0	0	461	74
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	0	0	0	1215	0	0	761	0	0	461	23
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2356			1106			497	288
v/s Ratio Prot								c0.07			c0.29	
v/s Ratio Perm					0.22			0.25				0.02
v/c Ratio					0.52			0.69			0.93	0.08
Uniform Delay, d1					19.2			19.0			30.2	22.1
Progression Factor					1.89			1.40			1.65	4.63
Incremental Delay, d2					0.7			3.1			21.3	0.4
Delay (s)					37.0			29.7			71.2	102.7
Level of Service					D			C			E	F
Approach Delay (s)		0.0			37.0			29.7			75.6	
Approach LOS		A			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	114	926	0	0	0	0	0	679	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5539						4577	1283
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5539						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	124	1007	0	0	0	0	0	738	205
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	1107	0	0	0	0	0	738	186
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2234						2263	634
v/s Ratio Prot											c0.16	
v/s Ratio Perm					0.20							0.14
v/c Ratio					0.50						0.33	0.29
Uniform Delay, d1					20.0						13.7	13.5
Progression Factor					1.00						1.67	1.86
Incremental Delay, d2					0.8						0.4	1.1
Delay (s)					20.8						23.2	26.1
Level of Service					C						C	C
Approach Delay (s)		0.0			20.8			0.0			23.8	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	217	1125	0	0	0	0	0	1324	202	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.91	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5411						4577	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5411						4577	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	1223	0	0	0	0	0	1439	220	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	195	1230	0	0	0	0	0	1439	205	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2080						2278	476			
v/s Ratio Prot								c0.31				
v/s Ratio Perm	0.18	0.23							0.21			
v/c Ratio	0.47	0.59						0.63	0.43			
Uniform Delay, d1	20.8	22.1						16.6	14.5			
Progression Factor	1.00	1.00						1.22	1.36			
Incremental Delay, d2	3.7	1.2						1.0	2.1			
Delay (s)	24.4	23.3						21.1	21.7			
Level of Service	C	C						C	C			
Approach Delay (s)		23.5			0.0			21.2			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1008	167	0	0	0	0	0	0	159	1274	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5644								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5644								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1096	182	0	0	0	0	0	0	173	1385	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1263	0	0	0	0	0	0	0	161	1385	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2194								785	2845	
v/s Ratio Prot		c0.22									c0.24	
v/s Ratio Perm										0.10		
v/c Ratio		0.58								0.20	0.49	
Uniform Delay, d1		21.7								12.9	15.2	
Progression Factor		1.82								0.63	0.86	
Incremental Delay, d2		0.9								0.5	0.5	
Delay (s)		40.4								8.6	13.5	
Level of Service		D								A	B	
Approach Delay (s)		40.4			0.0			0.0			13.0	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	974	40	0	0	0	0	518	87	91	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.95						1.00			0.98	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5374						2961			3093	
Flt Permitted		0.99						1.00			0.72	
Satd. Flow (perm)		5374						2961			2263	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	183	1059	43	0	0	0	0	563	95	99	407	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1280	0	0	0	0	0	654	0	0	506	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						47.0			47.0	
Effective Green, g (s)		37.0						47.0			47.0	
Actuated g/C Ratio		0.41						0.52			0.52	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2209						1546			1181	
v/s Ratio Prot								0.22				
v/s Ratio Perm		0.24									c0.22	
v/c Ratio		0.58						0.42			0.43	
Uniform Delay, d1		20.5						13.2			13.2	
Progression Factor		0.58						1.00			0.59	
Incremental Delay, d2		1.0						0.9			1.1	
Delay (s)		12.8						14.0			9.0	
Level of Service		B						B			A	
Approach Delay (s)		12.8			0.0			14.0			9.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1199	228	0	0	0	0	0	0	214	1688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1303	248	0	0	0	0	0	0	233	1835	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1303	235	0	0	0	0	0	0	218	1835	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.28									c0.40	
v/s Ratio Perm			0.20							0.15		
v/c Ratio		0.72	0.50							0.30	0.82	
Uniform Delay, d1		23.0	20.5							13.7	19.5	
Progression Factor		0.58	0.52							0.84	0.67	
Incremental Delay, d2		2.3	3.4							0.9	2.9	
Delay (s)		15.7	14.1							12.3	15.9	
Level of Service		B	B							B	B	
Approach Delay (s)		15.4			0.0			0.0			15.5	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	442	2111	0	0	0	0	0	1921	295	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4410						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4410						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	480	2295	0	0	0	0	0	2088	321	0	0	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	2765	0	0	0	0	0	2088	307	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		45.1						35.3	35.3			
Effective Green, g (s)		45.1						35.3	35.3			
Actuated g/C Ratio		0.50						0.39	0.39			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		2209						1795	506			
v/s Ratio Prot								c0.46				
v/s Ratio Perm		0.63							0.24			
v/c Ratio		1.25						1.16	0.61			
Uniform Delay, d1		22.4						27.4	21.8			
Progression Factor		1.38						0.76	0.67			
Incremental Delay, d2		116.9						79.7	5.1			
Delay (s)		147.9						100.3	19.7			
Level of Service		F						F	B			
Approach Delay (s)		147.9			0.0			89.6			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	120.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	1108	46	0	0	0	0	605	65	101	845	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.92	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4401						3047		1471	3185	
Flt Permitted		1.00						1.00		0.29	1.00	
Satd. Flow (perm)		4401						3047		449	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	1204	50	0	0	0	0	658	71	110	918	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1329	0	0	0	0	0	726	0	110	918	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		41.0						43.0		43.0	43.0	
Effective Green, g (s)		41.0						43.0		43.0	43.0	
Actuated g/C Ratio		0.46						0.48		0.48	0.48	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2004						1455		214	1521	
v/s Ratio Prot								0.24			c0.29	
v/s Ratio Perm		0.30								0.25		
v/c Ratio		0.66						0.50		0.51	0.60	
Uniform Delay, d1		19.1						16.1		16.3	17.2	
Progression Factor		1.41						0.60		0.43	0.43	
Incremental Delay, d2		0.2						1.1		7.9	1.6	
Delay (s)		27.0						10.7		14.8	9.0	
Level of Service		C						B		B	A	
Approach Delay (s)		27.0			0.0			10.7			9.6	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	525	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.95						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4311						3002			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4311						3002			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	1149	107	0	0	0	0	658	87	0	571	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	184	1244	0	0	0	0	0	742	0	0	571	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1877						1350			727	
v/s Ratio Prot		c0.29						0.25			c0.35	
v/s Ratio Perm	0.17											
v/c Ratio	0.39	0.66						0.55			0.79	
Uniform Delay, d1	17.3	20.2						18.1			21.1	
Progression Factor	0.60	0.66						0.70			0.41	
Incremental Delay, d2	1.9	1.5						1.4			4.7	
Delay (s)	12.2	14.7						14.1			13.3	
Level of Service	B	B						B			B	
Approach Delay (s)		14.4			0.0			14.1			13.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	291	754	57	0	0	0	0	1060	87	70	738	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.98						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4430						3185	1110	1553	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.17	1.00	
Satd. Flow (perm)	1221	4430						3185	1110	279	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	316	820	62	0	0	0	0	1152	95	76	802	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	316	873	0	0	0	0	0	1152	83	76	802	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1466						1772	617	155	1772	
v/s Ratio Prot		0.20						c0.36			0.25	
v/s Ratio Perm	c0.26								0.07	0.27		
v/c Ratio	0.78	0.60						0.65	0.13	0.49	0.45	
Uniform Delay, d1	27.2	25.1						13.9	9.6	12.2	11.8	
Progression Factor	1.74	1.80						1.52	1.89	1.00	1.00	
Incremental Delay, d2	10.8	1.3						1.5	0.4	10.7	0.8	
Delay (s)	58.0	46.5						22.6	18.5	22.8	12.7	
Level of Service	E	D						C	B	C	B	
Approach Delay (s)		49.5			0.0			22.3			13.5	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	829	200	95	1377	209	240	1294	171	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.91	1.00			
Frpb, ped/bikes	1.00	1.00	0.85	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.94	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1217	1492	4577	950	1164	4577	1246			
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1217	478	4577	950	1164	4577	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	182	901	217	103	1497	227	261	1407	186	0	0	0
RTOR Reduction (vph)	0	0	85	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	182	901	132	103	1497	127	261	1407	142	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	741	120	1149	238	561	2207	600			
v/s Ratio Prot	c0.07	0.20	0.04		c0.33		0.10	c0.31				
v/s Ratio Perm	0.25		0.07	0.22		0.13	0.12		0.11			
v/c Ratio	0.84	0.51	0.18	0.86	1.30	0.54	0.47	0.64	0.24			
Uniform Delay, d1	22.4	21.2	7.7	32.2	33.7	29.2	15.6	17.4	13.6			
Progression Factor	1.00	1.00	1.00	1.05	0.99	1.17	0.60	0.75	0.35			
Incremental Delay, d2	24.6	1.1	0.1	39.8	140.9	6.0	0.4	1.0	0.6			
Delay (s)	47.1	22.3	7.8	73.7	174.4	40.1	9.7	14.1	5.3			
Level of Service	D	C	A	E	F	D	A	B	A			
Approach Delay (s)		23.4			152.1			12.6			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	66.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	823	58	49	1133	0	0	0	0	61	1087	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5752	1425
Flt Permitted		1.00	1.00	0.23	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	389	3185						5752	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	895	63	53	1232	0	0	0	0	66	1182	400
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	895	48	53	1232	0	0	0	0	0	1248	380
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	185	1521						2345	581
v/s Ratio Prot		0.28			c0.39							
v/s Ratio Perm			0.03	0.14							0.22	c0.27
v/c Ratio		0.59	0.07	0.29	0.81						0.53	0.65
Uniform Delay, d1		17.1	12.7	14.2	20.0						20.2	21.5
Progression Factor		0.39	0.16	1.00	1.00						1.85	1.88
Incremental Delay, d2		1.5	0.2	3.9	4.8						0.8	5.1
Delay (s)		8.2	2.2	18.1	24.8						38.2	45.6
Level of Service		A	A	B	C						D	D
Approach Delay (s)		7.8			24.5			0.0			40.0	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	828	39	28	908	64	88	420	47	27	272	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		0.95	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3120		1517	3078			3031			2885	
Flt Permitted	0.18	1.00		0.22	1.00			0.77			0.89	
Satd. Flow (perm)	296	3120		348	3078			2362			2569	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	900	42	30	987	70	96	457	51	29	296	112
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	9	0
Lane Group Flow (vph)	128	939	0	30	1052	0	0	597	0	0	428	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	148	1566		174	1545			949			1032	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm	c0.43			0.09				c0.25			0.17	
v/c Ratio	0.86	0.60		0.17	0.68			0.63			0.41	
Uniform Delay, d1	21.9	17.7		13.6	18.8			23.9			21.5	
Progression Factor	1.00	1.00		0.49	0.59			1.00			1.00	
Incremental Delay, d2	44.8	1.7		1.5	1.8			3.2			1.2	
Delay (s)	66.7	19.4		8.2	12.9			27.1			22.7	
Level of Service	E	B		A	B			C			C	
Approach Delay (s)		25.1			12.8			27.1			22.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	790	98	93	1079	0	0	0	0	97	1339	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3132		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.21	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3132		351	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	859	107	101	1173	0	0	0	0	105	1455	264
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	963	0	101	1173	0	0	0	0	105	1455	236
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1566		175	1592					637	1830	570
v/s Ratio Prot		0.31			c0.37						c0.32	
v/s Ratio Perm				0.29						0.07		0.17
v/c Ratio		0.61		0.58	0.74					0.16	0.80	0.41
Uniform Delay, d1		18.0		17.6	19.8					19.3	26.4	21.6
Progression Factor		0.84		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.5		13.1	3.1					0.6	3.7	2.2
Delay (s)		16.7		30.7	22.9					19.8	30.1	23.8
Level of Service		B		C	C					B	C	C
Approach Delay (s)		16.7			23.5			0.0			28.6	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	748	0	0	1041	67	134	886	41	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3136			4528	1327			
Flt Permitted	0.14	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	230	3185			3136			4528	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	813	0	0	1132	73	146	963	45	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	28	0	0	0
Lane Group Flow (vph)	157	813	0	0	1200	0	0	1109	17	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	117	1631			1606			1710	501			
v/s Ratio Prot		0.26			0.38							
v/s Ratio Perm	c0.68							0.24	0.01			
v/c Ratio	1.34	0.50			0.75			0.65	0.03			
Uniform Delay, d1	21.9	14.4			17.3			23.1	17.6			
Progression Factor	1.00	1.00			0.64			0.56	0.32			
Incremental Delay, d2	200.2	1.1			3.2			1.7	0.1			
Delay (s)	222.2	15.5			14.3			14.6	5.8			
Level of Service	F	B			B			B	A			
Approach Delay (s)		48.9			14.3			14.2			0.0	
Approach LOS		D			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	636	51	37	529	63	41	534	51	37	764	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.95	1.00		0.98	1.00		0.96	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1543	3106		1508	3102		1557	3106		1532	3185	1230
Flt Permitted	0.37	1.00		0.32	1.00		0.17	1.00		0.27	1.00	1.00
Satd. Flow (perm)	597	3106		507	3102		271	3106		439	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	691	55	40	575	68	45	580	55	40	830	153
RTOR Reduction (vph)	0	7	0	0	10	0	0	8	0	0	0	87
Lane Group Flow (vph)	67	739	0	40	633	0	45	627	0	40	830	66
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	348	1811		295	1809		93	1069		151	1097	423
v/s Ratio Prot		c0.24			0.20			0.20			c0.26	
v/s Ratio Perm	0.11			0.08			0.17			0.09		0.05
v/c Ratio	0.19	0.41		0.14	0.35		0.48	0.59		0.26	0.76	0.16
Uniform Delay, d1	8.8	10.3		8.5	9.8		23.2	24.2		21.3	26.2	20.4
Progression Factor	2.19	2.06		0.56	0.48		0.47	0.44		1.41	1.43	3.20
Incremental Delay, d2	1.1	0.6		0.9	0.5		15.8	2.2		3.5	4.1	0.7
Delay (s)	20.4	21.8		5.7	5.2		26.8	12.9		33.4	41.5	66.1
Level of Service	C	C		A	A		C	B		C	D	E
Approach Delay (s)		21.6			5.2			13.8			44.9	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	487	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.98			1.00	0.89		1.00	0.83
Flpb, ped/bikes	0.93	1.00		0.93	1.00			1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	1.00
Satd. Flow (prot)	1481	3037		1478	3050			3166	1263		1616	1136
Flt Permitted	0.37	1.00		0.29	1.00			0.83	1.00		1.00	1.00
Satd. Flow (perm)	575	3037		446	3050			2646	1263		1616	1136
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	672	82	83	527	73	41	599	76	0	529	128
RTOR Reduction (vph)	0	10	0	0	12	0	0	0	31	0	0	39
Lane Group Flow (vph)	74	744	0	83	588	0	0	640	45	0	529	89
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	39.0
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	0.43
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	5.0
Lane Grp Cap (vph)	261	1383		203	1389			1146	547		700	492
v/s Ratio Prot		c0.24			0.19						c0.33	
v/s Ratio Perm	0.13			0.19				0.24	0.04			0.08
v/c Ratio	0.28	0.54		0.41	0.42			0.56	0.08		0.76	0.18
Uniform Delay, d1	15.3	17.7		16.4	16.5			19.1	15.0		21.5	15.7
Progression Factor	0.70	0.73		1.55	1.60			0.50	0.30		1.17	1.47
Incremental Delay, d2	2.5	1.4		4.7	0.7			1.8	0.3		4.7	0.5
Delay (s)	13.3	14.3		30.1	27.2			11.3	4.8		29.8	23.6
Level of Service	B	B		C	C			B	A		C	C
Approach Delay (s)		14.2			27.6			10.6			28.6	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	506	91	80	591	112	55	727	101	47	647	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3112		1593	3109		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.41	1.00		0.11	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	1593	3112		679	3109		176	3185	1425	426	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	550	99	87	642	122	60	790	110	51	703	242
RTOR Reduction (vph)	0	16	0	0	17	0	0	0	57	0	0	140
Lane Group Flow (vph)	175	633	0	87	747	0	60	790	53	51	703	102
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1441		224	1025		74	1344	601	179	707	601
v/s Ratio Prot	c0.11	0.20			c0.24			0.25			c0.42	
v/s Ratio Perm				0.13			0.34		0.04	0.12		0.07
v/c Ratio	1.17	0.44		0.39	0.73		0.81	0.59	0.09	0.28	0.99	0.17
Uniform Delay, d1	40.8	16.3		23.2	26.6		22.8	20.0	15.6	17.1	25.9	16.2
Progression Factor	0.90	1.14		1.00	1.00		1.13	1.11	1.86	0.54	0.68	0.69
Incremental Delay, d2	121.9	0.9		5.0	4.5		58.0	1.8	0.3	3.7	31.3	0.6
Delay (s)	158.7	19.4		28.2	31.1		83.9	23.9	29.2	12.9	48.9	11.8
Level of Service	F	B		C	C		F	C	C	B	D	B
Approach Delay (s)		49.0			30.8			28.3			38.1	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	33	48	188	388	317	6	1562	0	8	274	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577		1593	3136	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577		196	3136	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	36	52	204	422	345	7	1698	0	9	298	34
RTOR Reduction (vph)	0	0	40	0	0	130	0	0	0	0	8	0
Lane Group Flow (vph)	76	36	12	204	422	215	7	1698	0	9	324	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Actuated Green, G (s)	7.7	16.7	20.5	12.3	21.3	21.3	3.8	43.0		34.2	34.2	
Effective Green, g (s)	7.7	16.7	20.5	12.3	21.3	21.3	3.8	43.0		34.2	34.2	
Actuated g/C Ratio	0.09	0.19	0.23	0.14	0.24	0.24	0.04	0.48		0.38	0.38	
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	264	310	324	217	753	337	67	2186		74	1191	
v/s Ratio Prot	c0.02	0.02	0.00	c0.13	0.13		0.00	c0.37			0.10	
v/s Ratio Perm			0.01			c0.15				0.05		
v/c Ratio	0.29	0.12	0.04	0.94	0.56	0.64	0.10	0.78		0.12	0.27	
Uniform Delay, d1	38.6	30.5	27.1	38.5	30.2	30.9	41.5	19.5		18.1	19.3	
Progression Factor	1.00	1.00	1.00	0.76	0.84	0.78	1.00	1.00		0.66	0.65	
Incremental Delay, d2	0.6	0.2	0.0	43.8	0.9	3.9	0.7	2.8		3.1	0.5	
Delay (s)	39.2	30.7	27.1	72.9	26.5	28.1	42.2	22.3		15.2	13.0	
Level of Service	D	C	C	E	C	C	D	C		B	B	
Approach Delay (s)		33.5			36.8			22.4			13.1	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	45	74	474	0	0	0	0	0	1056	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	3.5	5.0						4.9	4.9
Lane Util. Factor			1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes			0.88	1.00	1.00						1.00	0.94
Flpb, ped/bikes			1.00	1.00	1.00						1.00	1.00
Frt			0.86	1.00	1.00						1.00	0.85
Flt Protected			1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)			1274	1593	3185						4577	1338
Flt Permitted			1.00	0.95	1.00						1.00	1.00
Satd. Flow (perm)			1274	1593	3185						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	49	80	515	0	0	0	0	0	1148	222
RTOR Reduction (vph)	0	0	34	0	0	0	0	0	0	0	0	123
Lane Group Flow (vph)	0	0	15	80	515	0	0	0	0	0	1148	99
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Prot	NA						NA	Perm
Protected Phases				5	2						4	
Permitted Phases			6									4
Actuated Green, G (s)			27.8	8.7	40.0						40.1	40.1
Effective Green, g (s)			27.8	8.7	40.0						40.1	40.1
Actuated g/C Ratio			0.31	0.10	0.44						0.45	0.45
Clearance Time (s)			5.0	3.5	5.0						4.9	4.9
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)			393	153	1415						2039	596
v/s Ratio Prot				c0.05	c0.16						c0.25	
v/s Ratio Perm			0.01									0.07
v/c Ratio			0.04	0.52	0.36						0.56	0.17
Uniform Delay, d1			21.8	38.7	16.6						18.5	14.9
Progression Factor			1.00	0.95	0.89						0.61	1.32
Incremental Delay, d2			0.2	2.9	0.7						1.0	0.5
Delay (s)			21.9	39.7	15.5						12.2	20.3
Level of Service			C	D	B						B	C
Approach Delay (s)		21.9			18.8			0.0			13.5	
Approach LOS		C			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	41	462	127	25	205	0	0	281	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8			4.4			4.4	
Lane Util. Factor					0.95			0.95			0.95	
Frpb, ped/bikes					1.00			1.00			1.00	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					3069			3165			3090	
Flt Permitted					1.00			0.89			1.00	
Satd. Flow (perm)					3069			2845			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	45	502	138	27	223	0	0	305	63
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	0	660	0	0	250	0	0	349	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					41.2			39.6			39.6	
Effective Green, g (s)					41.2			39.6			39.6	
Actuated g/C Ratio					0.46			0.44			0.44	
Clearance Time (s)					4.8			4.4			4.4	
Lane Grp Cap (vph)					1404			1251			1359	
v/s Ratio Prot											c0.11	
v/s Ratio Perm					0.22			0.09				
v/c Ratio					0.47			0.20			0.26	
Uniform Delay, d1					16.9			15.5			15.9	
Progression Factor					1.60			1.00			1.00	
Incremental Delay, d2					1.1			0.4			0.5	
Delay (s)					28.1			15.8			16.4	
Level of Service					C			B			B	
Approach Delay (s)		0.0			28.1			15.8			16.4	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	486	0	0	0	0	0	1460	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.90
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	3185						4577	1279
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	3185						4577	1279
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	528	0	0	0	0	0	1587	185
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	92
Lane Group Flow (vph)	0	0	0	168	528	0	0	0	0	0	1587	93
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	1245						2308	645
v/s Ratio Prot					c0.17						c0.35	
v/s Ratio Perm				0.12								0.07
v/c Ratio				0.30	0.42						0.69	0.14
Uniform Delay, d1				18.9	20.0						16.9	11.9
Progression Factor				0.73	0.77						1.00	1.00
Incremental Delay, d2				1.2	1.0						1.7	0.5
Delay (s)				15.1	16.4						18.6	12.4
Level of Service				B	B						B	B
Approach Delay (s)		0.0			16.1			0.0			18.0	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	532	120	129	929	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					0.95	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					3185	1313		4539				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					3185	1313		4539				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	578	130	140	1010	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	46	0	20	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	578	84	0	1130	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					1245	513		2289				
v/s Ratio Prot					c0.18							
v/s Ratio Perm						0.06		0.25				
v/c Ratio					0.46	0.16		0.49				
Uniform Delay, d1					20.4	17.8		14.7				
Progression Factor					0.90	1.22		1.00				
Incremental Delay, d2					1.1	0.6		0.8				
Delay (s)					19.5	22.4		15.5				
Level of Service					B	C		B				
Approach Delay (s)		0.0			20.0			15.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	628	73	19	520	0	0	818	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.94
Flpb, ped/bikes				0.95	1.00		0.99	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1511	3102		1578	3185			3185	1336
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1511	3102		318	3185			3185	1336
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	683	79	21	565	0	0	889	73
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	42
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				46.0	46.0		38.0	38.0			38.0	38.0
Effective Green, g (s)				46.0	46.0		38.0	38.0			38.0	38.0
Actuated g/C Ratio				0.51	0.51		0.42	0.42			0.42	0.42
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				772	1585		134	1344			1344	564
v/s Ratio Prot					c0.24			0.18			c0.28	
v/s Ratio Perm				0.06			0.07					0.03
v/c Ratio				0.12	0.47		0.16	0.42			0.66	0.07
Uniform Delay, d1				11.5	14.2		16.1	18.3			20.8	15.5
Progression Factor				1.48	1.43		1.00	1.00			1.53	2.80
Incremental Delay, d2				0.3	1.0		2.5	1.0			1.9	0.2
Delay (s)				17.3	21.2		18.6	19.2			33.7	43.6
Level of Service				B	C		B	B			C	D
Approach Delay (s)		0.0			20.8			19.2			34.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	38	513	50	64	661	0	0	631	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					0.95	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.82
Flpb, ped/bikes					0.97	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					3093	998	1593	3185			1616	1133
Flt Permitted					1.00	1.00	0.19	1.00			1.00	1.00
Satd. Flow (perm)					3093	998	319	3185			1616	1133
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	41	558	54	70	718	0	0	686	104
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	0	599	28	70	718	0	0	686	83
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					1237	399	157	1574			799	560
v/s Ratio Prot								0.23			c0.42	
v/s Ratio Perm					0.19	0.03	0.22					0.07
v/c Ratio					0.48	0.07	0.45	0.46			0.86	0.15
Uniform Delay, d1					20.1	16.7	14.8	14.9			20.0	12.4
Progression Factor					0.62	0.42	1.00	1.00			0.79	1.13
Incremental Delay, d2					1.2	0.3	8.9	1.0			9.5	0.4
Delay (s)					13.7	7.3	23.7	15.8			25.2	14.5
Level of Service					B	A	C	B			C	B
Approach Delay (s)		0.0			13.1			16.5			23.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	356	92	49	750	0	0	751	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0		3.0	3.0			3.0	
Lane Util. Factor					0.95		1.00	0.95			0.95	
Frt					0.97		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					3079		1593	3185			3130	
Flt Permitted					0.99		0.27	1.00			1.00	
Satd. Flow (perm)					3079		453	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	387	100	53	815	0	0	816	107
RTOR Reduction (vph)	0	0	0	0	19	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	557	0	53	815	0	0	912	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					23.0		61.0	61.0			61.0	
Effective Green, g (s)					23.0		61.0	61.0			61.0	
Actuated g/C Ratio					0.26		0.68	0.68			0.68	
Clearance Time (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					786		307	2158			2121	
v/s Ratio Prot								0.26			c0.29	
v/s Ratio Perm					0.18		0.12					
v/c Ratio					0.71		0.17	0.38			0.43	
Uniform Delay, d1					30.4		5.3	6.3			6.6	
Progression Factor					1.00		1.00	1.00			1.54	
Incremental Delay, d2					5.3		1.2	0.5			0.3	
Delay (s)					35.8		6.5	6.8			10.5	
Level of Service					D		A	A			B	
Approach Delay (s)		0.0			35.8			6.8			10.5	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	592	489	222	420	49	63	109	63	171	680	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1445	3185	1232	1578	4414		1587	3185	1219	1339	3083	
Flt Permitted	0.45	1.00	1.00	0.27	1.00		0.18	1.00	1.00	0.68	1.00	
Satd. Flow (perm)	691	3185	1232	453	4414		308	3185	1219	955	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	643	532	241	457	53	68	118	68	186	739	86
RTOR Reduction (vph)	0	0	188	0	21	0	0	0	20	0	12	0
Lane Group Flow (vph)	98	643	344	241	489	0	68	118	48	186	813	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Effective Green, g (s)	22.6	22.6	22.6	34.3	34.3		24.7	24.7	33.4	18.7	18.7	
Actuated g/C Ratio	0.32	0.32	0.32	0.49	0.49		0.35	0.35	0.48	0.27	0.27	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1028	397	361	2162		163	1123	581	255	823	
v/s Ratio Prot		0.20		c0.08	0.11		c0.02	0.04	0.01		c0.26	
v/s Ratio Perm	0.14		c0.28	0.24			0.13		0.03	0.19		
v/c Ratio	0.44	0.63	0.87	0.67	0.23		0.42	0.11	0.08	0.73	0.99	
Uniform Delay, d1	18.7	20.1	22.3	11.5	10.2		16.8	15.2	10.0	23.3	25.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.2	2.9	21.6	4.6	0.2		1.7	0.2	0.1	16.7	28.6	
Delay (s)	24.9	23.0	43.8	16.2	10.5		18.5	15.4	10.0	40.1	54.2	
Level of Service	C	C	D	B	B		B	B	B	D	D	
Approach Delay (s)		31.8			12.3			14.8			51.6	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	525	162	184	534	237	17	67	29	141	1098	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1536	3185	1050	3090	3185	1091	1593	3185	1149	1219	3185	1170
Flt Permitted	0.40	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	650	3185	1050	3090	3185	1091	227	3185	1149	907	3185	1170
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	571	176	200	580	258	18	73	32	153	1193	176
RTOR Reduction (vph)	0	0	78	0	0	123	0	0	16	0	0	46
Lane Group Flow (vph)	142	571	98	200	580	135	18	73	16	153	1193	130
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Effective Green, g (s)	42.7	34.4	34.4	11.1	37.2	37.2	29.5	29.5	40.6	29.5	29.5	37.8
Actuated g/C Ratio	0.47	0.38	0.38	0.12	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	390	1217	401	381	1316	450	74	1043	518	297	1043	491
v/s Ratio Prot	0.03	0.18		c0.06	c0.18			0.02	0.00		c0.37	0.02
v/s Ratio Perm	0.14		0.09			0.12	0.08		0.01	0.17		0.09
v/c Ratio	0.36	0.47	0.24	0.52	0.44	0.30	0.24	0.07	0.03	0.52	1.14	0.27
Uniform Delay, d1	13.7	20.9	18.9	37.0	18.9	17.7	22.1	20.8	13.7	24.5	30.2	17.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.3	1.4	1.3	1.1	1.7	7.6	0.1	0.0	6.3	76.4	0.3
Delay (s)	14.3	22.2	20.4	38.3	20.0	19.4	29.7	20.9	13.8	30.7	106.6	17.3
Level of Service	B	C	C	D	C	B	C	C	B	C	F	B
Approach Delay (s)		20.6			23.4			20.4			88.7	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	533	158	156	734	221	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2084
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2084
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	579	172	170	798	240	303
RTOR Reduction (vph)	0	103	0	0	0	37
Lane Group Flow (vph)	579	69	170	798	240	266
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	28.0	28.0	11.5	43.0	17.2	28.7
Effective Green, g (s)	28.0	28.0	11.5	43.0	17.2	28.7
Actuated g/C Ratio	0.40	0.40	0.16	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1274	472	261	1956	759	854
v/s Ratio Prot	c0.18		c0.11	0.25	c0.08	0.05
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.45	0.15	0.65	0.41	0.32	0.31
Uniform Delay, d1	15.4	13.4	27.4	6.9	21.6	14.0
Progression Factor	1.00	1.00	1.09	1.89	1.00	1.00
Incremental Delay, d2	1.2	0.6	3.9	0.4	0.2	0.2
Delay (s)	16.6	14.0	33.8	13.6	21.8	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.0			17.1	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	559	99	57	816	82	49	200	64	58	1041	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.94	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1458	3185	1116	1497	2996		1551	3185	927
Flt Permitted	0.16	1.00	1.00	0.42	1.00	1.00	0.18	1.00		0.52	1.00	1.00
Satd. Flow (perm)	271	3185	1132	647	3185	1116	281	2996		842	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	608	108	62	887	89	53	217	70	63	1132	148
RTOR Reduction (vph)	0	0	51	0	0	62	0	42	0	0	0	81
Lane Group Flow (vph)	66	608	57	62	887	27	53	245	0	63	1132	67
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Effective Green, g (s)	27.6	27.6	27.6	21.6	21.6	21.6	25.8	25.8		31.8	31.8	31.8
Actuated g/C Ratio	0.39	0.39	0.39	0.31	0.31	0.31	0.37	0.37		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	163	1255	446	199	982	344	103	1104		412	1446	421
v/s Ratio Prot	0.02	c0.19			c0.28			0.08		0.01	c0.36	
v/s Ratio Perm	0.14		0.05	0.10		0.02	0.19			0.06		0.07
v/c Ratio	0.40	0.48	0.13	0.31	0.90	0.08	0.51	0.22		0.15	0.78	0.16
Uniform Delay, d1	15.1	15.9	13.5	18.5	23.2	17.2	17.2	15.2		10.9	16.2	11.2
Progression Factor	1.00	0.70	0.57	0.99	1.03	4.13	2.11	2.65		1.00	1.00	1.00
Incremental Delay, d2	1.5	1.2	0.6	3.3	11.2	0.4	4.2	0.1		0.2	2.8	0.2
Delay (s)	16.6	12.3	8.3	21.6	35.3	71.2	40.5	40.4		11.1	19.0	11.4
Level of Service	B	B	A	C	D	E	D	D		B	B	B
Approach Delay (s)		12.1			37.5			40.4			17.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	519	79	53	695	148	30	327	52	54	519	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.84	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.93	1.00	1.00	0.98	1.00		0.89	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	1199	1484	3185	1181	1560	4358		1423	2957	
Flt Permitted	0.26	1.00	1.00	0.44	1.00	1.00	0.18	1.00		0.49	1.00	
Satd. Flow (perm)	429	3185	1199	688	3185	1181	298	4358		738	2957	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	564	86	58	755	161	33	355	57	59	564	240
RTOR Reduction (vph)	0	0	20	0	0	88	0	31	0	0	67	0
Lane Group Flow (vph)	111	564	66	58	755	73	33	381	0	59	737	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	338	1833	690	311	1442	534	93	1369		231	929	
v/s Ratio Prot	c0.03	0.18			c0.24			0.09			c0.25	
v/s Ratio Perm	0.16		0.06	0.08		0.06	0.11			0.08		
v/c Ratio	0.33	0.31	0.10	0.19	0.52	0.14	0.35	0.28		0.26	0.79	
Uniform Delay, d1	7.7	7.7	6.7	11.4	13.7	11.2	18.5	18.0		17.9	21.9	
Progression Factor	0.95	1.17	1.17	1.13	1.19	2.86	1.98	2.20		1.00	1.00	
Incremental Delay, d2	0.5	0.4	0.3	1.1	1.1	0.4	10.0	0.5		2.7	6.9	
Delay (s)	7.8	9.4	8.1	14.0	17.4	32.4	46.7	40.2		20.5	28.8	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		9.0			19.7			40.7			28.3	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	467	74	37	593	6	0	0	0	77	1009	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1575	3185	1249	1503	3174						4544	1255
Flt Permitted	0.26	1.00	1.00	0.47	1.00						1.00	1.00
Satd. Flow (perm)	438	3185	1249	736	3174						4544	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	508	80	40	645	7	0	0	0	84	1097	345
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	72	508	59	40	651	0	0	0	0	0	1181	327
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	296	1446	567	239	1033						1785	600
v/s Ratio Prot	0.02	0.16			c0.20							c0.05
v/s Ratio Perm	0.09		0.05	0.05							0.26	0.21
v/c Ratio	0.24	0.35	0.10	0.17	0.63						0.66	0.55
Uniform Delay, d1	11.6	12.4	10.9	16.8	20.0						17.4	12.9
Progression Factor	1.54	1.48	1.90	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	0.7	0.4	1.5	2.9						1.9	1.0
Delay (s)	18.2	18.9	21.2	18.3	22.9						19.4	13.9
Level of Service	B	B	C	B	C						B	B
Approach Delay (s)		19.1			22.7			0.0			18.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	194	729	197	191	697	101	205	537	214	116	312	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	0.99	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1507	3185	1097	1584	4383		1541	3185	1229	1484	3045	
Flt Permitted	0.31	1.00	1.00	0.19	1.00		0.44	1.00	1.00	0.43	1.00	
Satd. Flow (perm)	499	3185	1097	317	4383		712	3185	1229	675	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	792	214	208	758	110	223	584	233	126	339	54
RTOR Reduction (vph)	0	0	141	0	21	0	0	0	15	0	14	0
Lane Group Flow (vph)	211	792	73	208	847	0	223	584	218	126	379	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	1079	371	241	1972		350	1362	621	228	1031	
v/s Ratio Prot		0.25		c0.07	0.19		c0.04	0.18	0.03		0.12	
v/s Ratio Perm	c0.42		0.07	0.32			c0.24		0.15	0.19		
v/c Ratio	1.25	0.73	0.20	0.86	0.43		0.64	0.43	0.35	0.55	0.37	
Uniform Delay, d1	29.8	26.2	21.1	18.6	16.9		19.7	18.0	13.4	24.2	22.5	
Progression Factor	1.00	1.00	1.00	1.84	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	151.4	4.4	1.2	20.6	0.5		3.8	1.0	0.3	9.3	1.0	
Delay (s)	181.1	30.6	22.2	54.7	13.4		23.5	19.0	13.7	33.5	23.5	
Level of Service	F	C	C	D	B		C	B	B	C	C	
Approach Delay (s)		55.2			21.4			18.8			25.9	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	239	677	127	191	838	459	27	547	83	48	668	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1190	3090	3185	1248	1470	3185	1315	1540	3185	1121
Flt Permitted	0.19	1.00	1.00	0.95	1.00	1.00	0.25	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	311	3185	1190	3090	3185	1248	381	3185	1315	533	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	260	736	138	208	911	499	29	595	90	52	726	142
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	19	0	0	17
Lane Group Flow (vph)	260	736	90	208	911	451	29	595	71	52	726	125
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Effective Green, g (s)	44.7	35.7	35.7	8.8	35.5	35.5	30.5	30.5	39.3	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	1263	472	302	1256	492	129	1079	574	180	1079	491
v/s Ratio Prot	c0.09	0.23		0.07	0.29			0.19	0.01		c0.23	0.03
v/s Ratio Perm	c0.37		0.08			0.36	0.08		0.04	0.10		0.09
v/c Ratio	0.92	0.58	0.19	0.69	0.73	0.92	0.22	0.55	0.12	0.29	0.67	0.25
Uniform Delay, d1	16.0	21.3	17.7	39.3	23.1	25.8	21.3	24.2	15.1	21.8	25.5	16.0
Progression Factor	2.24	0.78	0.89	0.82	1.09	1.08	1.00	1.02	0.94	1.00	1.00	1.00
Incremental Delay, d2	28.1	1.5	0.7	5.5	3.2	21.7	3.9	2.0	0.1	4.0	3.4	0.3
Delay (s)	63.8	18.2	16.5	37.6	28.3	49.7	25.2	26.7	14.2	25.8	28.8	16.2
Level of Service	E	B	B	D	C	D	C	C	B	C	C	B
Approach Delay (s)		28.4			36.1			25.1			26.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	747	40	64	867	603	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2381
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2381
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	812	43	70	942	655	951
RTOR Reduction (vph)	0	25	0	0	0	20
Lane Group Flow (vph)	812	18	70	942	655	931
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	37.2	37.2	15.1	55.8	24.4	39.5
Effective Green, g (s)	37.2	37.2	15.1	55.8	24.4	39.5
Actuated g/C Ratio	0.41	0.41	0.17	0.62	0.27	0.44
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1316	433	267	1974	837	1044
v/s Ratio Prot	c0.25		0.04	0.30	0.21	c0.15
v/s Ratio Perm		0.02				0.24
v/c Ratio	0.62	0.04	0.26	0.48	0.78	0.89
Uniform Delay, d1	20.8	15.8	32.6	9.2	30.3	23.3
Progression Factor	1.66	3.08	0.78	2.02	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.4	0.7	4.8	9.8
Delay (s)	36.4	48.7	25.8	19.4	35.2	33.1
Level of Service	D	D	C	B	D	C
Approach Delay (s)	37.0			19.8	33.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	238	949	31	33	610	61	81	560	82	85	783	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.91	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1583	3185	1143	1521	3185	1196	1450	3090		1587	3185	976
Flt Permitted	0.20	1.00	1.00	0.28	1.00	1.00	0.30	1.00		0.22	1.00	1.00
Satd. Flow (perm)	340	3185	1143	444	3185	1196	461	3090		367	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1032	34	36	663	66	88	609	89	92	851	157
RTOR Reduction (vph)	0	0	18	0	0	48	0	14	0	0	0	91
Lane Group Flow (vph)	259	1032	16	36	663	18	88	684	0	92	851	66
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	41.8	41.8	41.8	24.6	24.6	24.6	28.2	28.2		37.6	37.6	37.6
Effective Green, g (s)	41.8	41.8	41.8	24.6	24.6	24.6	28.2	28.2		37.6	37.6	37.6
Actuated g/C Ratio	0.46	0.46	0.46	0.27	0.27	0.27	0.31	0.31		0.42	0.42	0.42
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	354	1479	530	121	870	326	144	968		240	1330	407
v/s Ratio Prot	c0.12	0.32			0.21			c0.22		0.03	c0.27	
v/s Ratio Perm	c0.22		0.01	0.08		0.02	0.19			0.13		0.07
v/c Ratio	0.73	0.70	0.03	0.30	0.76	0.06	0.61	0.71		0.38	0.64	0.16
Uniform Delay, d1	17.1	19.1	13.1	25.9	30.0	24.1	26.2	27.3		17.4	20.8	16.4
Progression Factor	1.10	1.14	0.83	0.89	0.97	4.34	1.49	1.44		1.00	1.00	1.00
Incremental Delay, d2	5.0	1.8	0.1	5.2	5.3	0.3	6.3	2.0		1.0	1.0	0.2
Delay (s)	23.8	23.6	11.0	28.2	34.3	104.9	45.5	41.3		18.4	21.8	16.5
Level of Service	C	C	B	C	C	F	D	D		B	C	B
Approach Delay (s)		23.3			40.1			41.8			20.8	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	1036	79	43	676	76	58	548	121	78	407	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1573	3185	1071	1512	3185	1050	1531	4288		1497	2935	
Flt Permitted	0.25	1.00	1.00	0.25	1.00	1.00	0.28	1.00		0.28	1.00	
Satd. Flow (perm)	413	3185	1071	402	3185	1050	449	4288		442	2935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1126	86	47	735	83	63	596	132	85	442	180
RTOR Reduction (vph)	0	0	32	0	0	48	0	28	0	0	49	0
Lane Group Flow (vph)	245	1126	54	47	735	35	63	700	0	85	573	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	38.0	38.0	38.0	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	1886	634	169	1344	443	144	1381		142	945	
v/s Ratio Prot	0.08	c0.35			0.23			0.16			c0.20	
v/s Ratio Perm	c0.28		0.05	0.12		0.03	0.14			0.19		
v/c Ratio	0.61	0.60	0.08	0.28	0.55	0.08	0.44	0.51		0.60	0.61	
Uniform Delay, d1	10.6	11.6	7.9	17.0	19.5	15.5	24.1	24.7		25.6	25.7	
Progression Factor	1.58	1.70	2.58	0.56	0.61	0.72	1.09	1.06		1.00	1.00	
Incremental Delay, d2	2.2	1.2	0.2	3.6	1.4	0.3	9.2	1.3		17.3	2.9	
Delay (s)	18.9	20.9	20.6	13.2	13.3	11.6	35.3	27.5		42.9	28.6	
Level of Service	B	C	C	B	B	B	D	C		D	C	
Approach Delay (s)		20.6			13.1			28.2			30.3	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	1049	50	35	637	5	0	0	0	84	456	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1571	3185	1027	1514	3177						4449	1264
Flt Permitted	0.27	1.00	1.00	0.22	1.00						0.99	1.00
Satd. Flow (perm)	454	3185	1027	346	3177						4449	1264
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	1140	54	38	692	5	0	0	0	91	496	177
RTOR Reduction (vph)	0	0	25	0	1	0	0	0	0	0	0	27
Lane Group Flow (vph)	107	1140	29	38	696	0	0	0	0	0	587	150
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Effective Green, g (s)	47.8	47.8	47.8	36.6	36.6						31.5	39.7
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	342	1691	545	140	1291						1557	557
v/s Ratio Prot	0.03	c0.36			0.22							0.02
v/s Ratio Perm	0.14		0.03	0.11							0.13	0.09
v/c Ratio	0.31	0.67	0.05	0.27	0.54						0.38	0.27
Uniform Delay, d1	11.5	15.4	10.2	17.8	20.3						21.9	15.9
Progression Factor	1.15	1.00	2.04	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.4	1.8	0.1	4.7	1.6						0.7	0.3
Delay (s)	13.6	17.1	20.9	22.5	21.9						22.6	16.2
Level of Service	B	B	C	C	C						C	B
Approach Delay (s)		17.0			21.9			0.0			21.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix F
Opening Year (2020) Without Project HCM Analysis Output

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	621	502	229	436	53	66	122	66	182	699	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1450	3185	1232	1580	4406		1587	3185	1220	1344	3084	
Flt Permitted	0.44	1.00	1.00	0.26	1.00		0.20	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	678	3185	1232	430	4406		332	3185	1220	945	3084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	675	546	249	474	58	72	133	72	198	760	88
RTOR Reduction (vph)	0	0	182	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	101	675	364	249	510	0	72	133	51	198	836	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Effective Green, g (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1051	406	358	2196		186	1096	573	230	753	
v/s Ratio Prot		0.21		c0.09	0.12		c0.02	0.04	0.01		c0.27	
v/s Ratio Perm	0.15		c0.30	0.26			0.11		0.03	0.21		
v/c Ratio	0.45	0.64	0.90	0.70	0.23		0.39	0.12	0.09	0.86	1.11	
Uniform Delay, d1	18.5	19.9	22.3	11.4	10.0		17.5	15.7	10.3	25.3	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	3.0	25.1	5.8	0.2		1.3	0.2	0.1	32.0	67.3	
Delay (s)	25.0	23.0	47.5	17.2	10.2		18.8	15.9	10.3	57.3	93.7	
Level of Service	C	C	D	B	B		B	B	B	E	F	
Approach Delay (s)		33.2			12.4			15.2			86.9	
Approach LOS		C			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	557	169	190	550	246	23	82	56	151	1171	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1539	3185	1050	3090	3185	1091	1593	3185	1150	1227	3185	1171
Flt Permitted	0.39	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	633	3185	1050	3090	3185	1091	227	3185	1150	899	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	605	184	207	598	267	25	89	61	164	1273	182
RTOR Reduction (vph)	0	0	79	0	0	116	0	0	16	0	0	46
Lane Group Flow (vph)	147	605	105	207	598	151	25	89	45	164	1273	136
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Effective Green, g (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Actuated g/C Ratio	0.47	0.38	0.38	0.13	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	384	1210	399	387	1312	449	74	1043	521	294	1043	493
v/s Ratio Prot	0.04	c0.19		c0.07	c0.19			0.03	0.01		c0.40	0.03
v/s Ratio Perm	0.15		0.10			0.14	0.11		0.03	0.18		0.09
v/c Ratio	0.38	0.50	0.26	0.53	0.46	0.34	0.34	0.09	0.09	0.56	1.22	0.28
Uniform Delay, d1	13.9	21.4	19.2	36.9	19.1	18.0	22.9	20.9	14.0	24.9	30.2	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.5	1.6	1.4	1.1	2.0	11.9	0.2	0.1	7.4	108.0	0.3
Delay (s)	14.5	22.8	20.8	38.3	20.3	20.1	34.8	21.1	14.1	32.3	138.3	17.4
Level of Service	B	C	C	D	C	C	C	C	B	C	F	B
Approach Delay (s)		21.1			23.7			20.6			113.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	61.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	571	177	165	754	232	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2086
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2086
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	192	179	820	252	324
RTOR Reduction (vph)	0	116	0	0	0	30
Lane Group Flow (vph)	621	76	179	820	252	294
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.7	27.7	11.7	42.9	17.3	29.0
Effective Green, g (s)	27.7	27.7	11.7	42.9	17.3	29.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1260	467	266	1951	763	864
v/s Ratio Prot	c0.19		c0.11	0.26	0.08	c0.06
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.49	0.16	0.67	0.42	0.33	0.34
Uniform Delay, d1	15.9	13.7	27.4	7.1	21.6	14.0
Progression Factor	1.00	1.00	1.06	2.04	1.00	1.00
Incremental Delay, d2	1.4	0.7	3.7	0.4	0.3	0.2
Delay (s)	17.3	14.4	32.8	14.8	21.9	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.6			18.0	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	594	115	105	842	85	51	237	26	60	1095	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.99		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.95	1.00		0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1464	3185	1116	1508	3109		1551	3185	927
Flt Permitted	0.17	1.00	1.00	0.41	1.00	1.00	0.16	1.00		0.52	1.00	1.00
Satd. Flow (perm)	285	3185	1132	627	3185	1116	248	3109		844	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	646	125	114	915	92	55	258	28	65	1190	152
RTOR Reduction (vph)	0	0	51	0	0	65	0	11	0	0	0	83
Lane Group Flow (vph)	72	646	74	114	915	27	55	275	0	65	1190	69
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Effective Green, g (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.37	0.37		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	185	1246	443	182	928	325	92	1154		416	1456	423
v/s Ratio Prot	0.02	c0.20			c0.29			0.09		0.01	c0.37	
v/s Ratio Perm	0.13		0.07	0.18		0.02	0.22			0.06		0.07
v/c Ratio	0.39	0.52	0.17	0.63	0.99	0.08	0.60	0.24		0.16	0.82	0.16
Uniform Delay, d1	15.5	16.3	13.9	21.5	24.7	18.0	17.8	15.2		10.8	16.5	11.2
Progression Factor	0.98	0.72	0.66	0.99	1.02	3.72	1.97	2.19		1.00	1.00	1.00
Incremental Delay, d2	1.2	1.4	0.7	12.2	23.2	0.4	9.8	0.1		0.2	3.7	0.2
Delay (s)	16.5	13.2	9.8	33.5	48.4	67.4	44.8	33.3		11.0	20.2	11.3
Level of Service	B	B	A	C	D	E	D	C		B	C	B
Approach Delay (s)		13.0			48.5			35.2			18.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	547	42	55	744	152	31	336	54	56	536	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.89	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1581	3185	1049	1419	3185	1181	1563	4357		1426	2945	
Flt Permitted	0.23	1.00	1.00	0.43	1.00	1.00	0.18	1.00		0.48	1.00	
Satd. Flow (perm)	391	3185	1049	638	3185	1181	299	4357		726	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	595	46	60	809	165	34	365	59	61	583	268
RTOR Reduction (vph)	0	0	18	0	0	87	0	32	0	0	77	0
Lane Group Flow (vph)	121	595	28	60	809	78	34	392	0	61	774	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	1833	603	288	1442	534	93	1369		228	925	
v/s Ratio Prot	c0.03	0.19			c0.25			0.09			c0.26	
v/s Ratio Perm	0.19		0.03	0.09		0.07	0.11			0.08		
v/c Ratio	0.38	0.32	0.05	0.21	0.56	0.15	0.37	0.29		0.27	0.84	
Uniform Delay, d1	8.0	7.7	6.5	11.6	14.0	11.2	18.6	18.1		18.0	22.3	
Progression Factor	1.04	1.26	1.51	1.10	1.16	2.56	1.82	2.02		1.00	1.00	
Incremental Delay, d2	0.7	0.4	0.1	1.3	1.2	0.4	10.4	0.5		2.9	8.9	
Delay (s)	8.9	10.2	9.9	14.1	17.6	29.1	44.2	37.0		20.8	31.2	
Level of Service	A	B	A	B	B	C	D	D		C	C	
Approach Delay (s)		10.0			19.2			37.5			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	492	76	38	620	7	0	0	0	79	1078	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1578	3185	1249	1506	3173						4545	1255
Flt Permitted	0.25	1.00	1.00	0.45	1.00						1.00	1.00
Satd. Flow (perm)	410	3185	1249	718	3173						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	535	83	41	674	8	0	0	0	86	1172	375
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	74	535	62	41	681	0	0	0	0	0	1258	357
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	286	1446	567	233	1033						1785	600
v/s Ratio Prot	0.02	0.17			c0.21							c0.05
v/s Ratio Perm	0.10		0.05	0.06							0.28	0.23
v/c Ratio	0.26	0.37	0.11	0.18	0.66						0.70	0.60
Uniform Delay, d1	11.7	12.5	11.0	16.9	20.3						17.8	13.3
Progression Factor	1.57	1.50	1.92	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	0.7	0.4	1.6	3.3						2.4	1.6
Delay (s)	18.8	19.5	21.5	18.5	23.6						20.2	14.9
Level of Service	B	B	C	B	C						C	B
Approach Delay (s)		19.6			23.3			0.0			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	5	15	49	56	79	11	58	6	37	1190	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.91		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2755		1593	2872		1580	3108		1473	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2755		1593	2872		193	3108		1099	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	5	16	53	61	86	12	63	7	40	1293	324
RTOR Reduction (vph)	0	12	0	0	67	0	0	4	0	0	0	84
Lane Group Flow (vph)	29	9	0	53	80	0	12	66	0	40	1293	240
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Effective Green, g (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Actuated g/C Ratio	0.08	0.26		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	704		68	635		94	1527		540	1565	739
v/s Ratio Prot	0.02	0.00		c0.03	c0.03			0.02			c0.41	0.03
v/s Ratio Perm							0.06			0.04		0.16
v/c Ratio	0.24	0.01		0.78	0.13		0.13	0.04		0.07	0.83	0.32
Uniform Delay, d1	30.4	19.5		33.2	21.8		9.7	9.3		9.4	15.2	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.51	1.49		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0		41.9	0.1		2.8	0.1		0.3	5.1	0.3
Delay (s)	31.4	19.5		75.1	21.9		17.3	13.8		9.7	20.4	8.2
Level of Service	C	B		E	C		B	B		A	C	A
Approach Delay (s)		26.4			36.0			14.3			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	426	0	102	29	78	331	52	20	1128	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.97		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.90	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3009		1568	3035		1429	3185	1239
Flt Permitted		1.00	1.00		1.00		0.12	1.00		0.51	1.00	1.00
Satd. Flow (perm)		1676	1326		3009		203	3035		764	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	463	0	111	32	85	360	57	22	1226	135
RTOR Reduction (vph)	0	0	23	0	20	0	0	18	0	0	0	72
Lane Group Flow (vph)	0	432	440	0	123	0	85	399	0	22	1226	63
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Effective Green, g (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Actuated g/C Ratio		0.39	0.39		0.39		0.47	0.47		0.47	0.47	0.47
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		646	511		1160		94	1413		355	1483	577
v/s Ratio Prot		0.26			0.04			0.13			0.38	
v/s Ratio Perm			c0.33				c0.42			0.03		0.05
v/c Ratio		0.67	0.86		0.11		0.90	0.28		0.06	0.83	0.11
Uniform Delay, d1		17.8	19.8		13.8		17.3	11.5		10.3	16.2	10.5
Progression Factor		1.00	1.00		1.62		1.38	1.44		0.31	0.47	0.06
Incremental Delay, d2		5.4	17.2		0.2		61.8	0.4		0.2	3.5	0.2
Delay (s)		23.2	37.0		22.5		85.6	17.0		3.4	11.1	0.9
Level of Service		C	D		C		F	B		A	B	A
Approach Delay (s)		30.3			22.5			28.6			10.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	558	74	0	389	39	53	350	130	0	592	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2882			1676	
Flt Permitted		1.00	1.00		1.00	1.00	0.15	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	258	2882			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	607	80	0	423	42	58	380	141	0	643	0
RTOR Reduction (vph)	0	0	46	0	0	24	0	34	0	0	0	0
Lane Group Flow (vph)	0	607	34	0	423	18	58	487	0	0	643	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		30.1	30.1		30.1	30.1	29.5	29.5			20.6	
Effective Green, g (s)		30.1	30.1		30.1	30.1	29.5	29.5			20.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.42	0.42			0.29	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		720	491		720	567	175	1214			493	
v/s Ratio Prot		c0.36			0.25		0.02	c0.17			c0.38	
v/s Ratio Perm			0.03			0.01	0.12					
v/c Ratio		0.84	0.07		0.59	0.03	0.33	0.40			1.30	
Uniform Delay, d1		17.8	11.7		15.2	11.5	28.0	14.1			24.7	
Progression Factor		0.93	2.47		1.21	1.00	1.70	1.54			0.49	
Incremental Delay, d2		10.6	0.3		2.8	0.1	1.1	0.2			146.5	
Delay (s)		27.2	29.2		21.2	11.6	48.7	21.9			158.6	
Level of Service		C	C		C	B	D	C			F	
Approach Delay (s)		27.5			20.3			24.5			158.6	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	60.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	356	312	107	358	0	0	0	0	27	1155	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.93	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1476	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.35	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	542	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	387	339	116	389	0	0	0	0	29	1255	100
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	46
Lane Group Flow (vph)	0	387	324	116	389	0	0	0	0	29	1255	54
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	179	555					721	1706	362
v/s Ratio Prot		0.23			0.23						c0.39	
v/s Ratio Perm			c0.27	0.21						0.02		0.08
v/c Ratio		0.70	0.83	0.65	0.70					0.04	0.74	0.15
Uniform Delay, d1		20.3	21.6	19.9	20.4					7.7	12.5	8.2
Progression Factor		0.82	0.83	1.00	1.00					0.28	0.30	0.00
Incremental Delay, d2		5.0	13.3	16.7	7.2					0.1	2.3	0.7
Delay (s)		21.6	31.2	36.7	27.6					2.2	6.0	0.7
Level of Service		C	C	D	C					A	A	A
Approach Delay (s)		26.1			29.7			0.0			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	23	56	19	60	1127	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.96	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1530	3185	3185	993
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	290	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	61	21	65	1225	183
RTOR Reduction (vph)	0	7	0	0	0	45
Lane Group Flow (vph)	25	54	21	65	1225	138
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	182	2006	2006	625
v/s Ratio Prot				0.02	c0.38	
v/s Ratio Perm	0.02	c0.03	0.07			0.14
v/c Ratio	0.07	0.11	0.12	0.03	0.61	0.22
Uniform Delay, d1	21.0	21.2	5.2	4.9	7.8	5.6
Progression Factor	1.00	1.00	1.00	1.00	0.15	0.00
Incremental Delay, d2	0.1	0.1	1.3	0.0	0.9	0.5
Delay (s)	21.1	21.3	6.5	4.9	2.0	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.3	1.9	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1414	172	58	417	0	0	1104	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3109		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3109		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1537	187	63	453	0	0	1200	229
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	107	1711	0	63	453	0	0	1200	223
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.55			0.14			c0.38	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.15	1.13		0.66	0.33			0.88	0.43
Uniform Delay, d1				10.0	18.0		15.9	13.3			18.3	14.0
Progression Factor				2.00	1.83		0.98	0.89			0.91	0.79
Incremental Delay, d2				0.0	60.7		28.0	0.6			4.6	1.3
Delay (s)				20.0	93.6		43.5	12.5			21.3	12.4
Level of Service				B	F		D	B			C	B
Approach Delay (s)		0.0			89.3			16.3			19.9	
Approach LOS		A			F			B			B	

Intersection Summary			
HCM 2000 Control Delay	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	15	1608	58	80	438	0	0	278	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3139			1676	1300
Flt Permitted				0.95	1.00	1.00		0.85			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2686			1676	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	1748	63	87	476	0	0	302	309
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	84
Lane Group Flow (vph)	0	0	0	16	1748	25	0	563	0	0	302	225
Confl. Peds. (#/hr)				62		61	55					55
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1247			778	603
v/s Ratio Prot					c0.55						0.18	
v/s Ratio Perm				0.01		0.02		c0.21				0.17
v/c Ratio				0.03	1.36	0.05		0.45			0.39	0.37
Uniform Delay, d1				12.6	20.9	12.7		12.7			12.3	12.1
Progression Factor				1.91	1.74	6.19		0.76			0.14	0.06
Incremental Delay, d2				0.0	165.3	0.1		0.2			0.1	0.2
Delay (s)				24.1	201.7	78.8		9.9			1.9	0.9
Level of Service				C	F	E		A			A	A
Approach Delay (s)		0.0			195.9			9.9			1.4	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	121.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	439	1353	0	0	0	0	0	1075	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	477	1471	0	0	0	0	0	1168	183
RTOR Reduction (vph)	0	0	0	16	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	461	1471	0	0	0	0	0	1168	167
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.46						c0.26	
v/s Ratio Perm				0.32								0.14
v/c Ratio				0.74	1.07						0.59	0.31
Uniform Delay, d1				16.6	19.9						15.1	13.0
Progression Factor				1.00	1.00						0.81	0.88
Incremental Delay, d2				7.7	45.6						0.8	1.0
Delay (s)				24.3	65.5						13.1	12.4
Level of Service				C	E						B	B
Approach Delay (s)		0.0			55.4			0.0			13.0	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	574	1293	0	0	39	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	624	1405	0	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	624	1405	0	0	42	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.21				
v/s Ratio Perm					c0.01	
v/c Ratio	0.36	0.24			0.23	
Uniform Delay, d1	8.2	1.0			31.4	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.6	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.5	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	879	168	0	0	0	0	690	101	56	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4449		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4449		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	955	183	0	0	0	0	750	110	61	230	0
RTOR Reduction (vph)	0	0	111	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	235	955	72	0	0	0	0	835	0	61	230	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1588		158	780	
v/s Ratio Prot		0.17						c0.19		0.02	c0.14	
v/s Ratio Perm	c0.21		0.05									
v/c Ratio	0.54	0.42	0.14					0.53		0.39	0.29	
Uniform Delay, d1	16.4	15.5	13.6					17.8		32.1	11.6	
Progression Factor	1.23	1.16	2.15					1.09		1.00	1.00	
Incremental Delay, d2	4.7	0.6	0.6					1.1		1.6	1.0	
Delay (s)	24.8	18.5	29.9					20.6		33.7	12.5	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		21.1			0.0			20.6			17.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	762	138	0	0	0	0	442	72	147	1066	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.93	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5470						3042		1482	3185	
Flt Permitted		0.99						1.00		0.39	1.00	
Satd. Flow (perm)		5470						3042		611	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	828	150	0	0	0	0	480	78	160	1159	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	1110	0	0	0	0	0	540	0	160	1159	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1347		270	1410	
v/s Ratio Prot								0.18			c0.36	
v/s Ratio Perm		0.20								0.26		
v/c Ratio		0.46						0.40		0.59	0.82	
Uniform Delay, d1		13.6						13.2		14.7	17.1	
Progression Factor		1.16						1.60		0.92	0.98	
Incremental Delay, d2		0.6						0.9		5.2	3.2	
Delay (s)		16.3						22.0		18.7	19.9	
Level of Service		B						C		B	B	
Approach Delay (s)		16.3			0.0			22.0			19.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	811	73	0	0	0	0	443	90	0	369	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5408						2938			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5408						2938			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	882	79	0	0	0	0	482	98	0	401	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	1033	0	0	0	0	0	555	0	0	401	0
Confl. Peds. (#/hr)	217		174						257	257		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2704						1036			591	
v/s Ratio Prot								0.19			c0.24	
v/s Ratio Perm		0.19										
v/c Ratio		0.38						0.54			0.68	
Uniform Delay, d1		10.8						18.1			19.3	
Progression Factor		1.82						1.21			1.06	
Incremental Delay, d2		0.4						1.6			6.0	
Delay (s)		20.0						23.5			26.4	
Level of Service		C						C			C	
Approach Delay (s)		20.0			0.0			23.5			26.4	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	661	164	0	0	0	0	0	0	121	1215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5397									4509	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5397									4509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	718	178	0	0	0	0	0	0	132	1321	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	893	0	0	0	0	0	0	0	0	1435	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.17										
v/s Ratio Perm											0.32	
v/c Ratio		0.33									0.87	
Uniform Delay, d1		10.4									20.8	
Progression Factor		1.63									0.89	
Incremental Delay, d2		0.3									5.4	
Delay (s)		17.2									23.7	
Level of Service		B									C	
Approach Delay (s)		17.2			0.0			0.0			23.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	372	1195	205	0	0	0	0	772	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	404	1299	223	0	0	0	0	839	201
RTOR Reduction (vph)	0	0	0	46	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	269	1556	0	0	0	0	0	839	183
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.30	0.28							c0.19
v/c Ratio				0.70	0.64						0.43	0.44
Uniform Delay, d1				16.3	15.8						14.0	14.1
Progression Factor				1.00	0.91						1.00	1.00
Incremental Delay, d2				7.1	0.9						0.7	3.4
Delay (s)				23.4	15.2						14.7	17.5
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.5			0.0			15.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1253	109	361	787	0	0	0	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5534		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5534		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1362	118	392	855	0	0	0	209
RTOR Reduction (vph)	0	0	0	0	20	0	290	0	0	0	0	193
Lane Group Flow (vph)	0	0	0	0	1460	0	102	855	0	0	0	16
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.19				
v/s Ratio Perm												c0.01
v/c Ratio					0.98		0.13	0.39				0.08
Uniform Delay, d1					25.3		19.8	11.6				29.9
Progression Factor					1.57		1.41	0.99				1.00
Incremental Delay, d2					16.0		0.3	0.4				0.2
Delay (s)					55.8		28.3	12.0				30.1
Level of Service					E		C	B				C
Approach Delay (s)		0.0			55.8			17.1			30.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	1257	88	58	372	0	0	960	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5586		1518	3185			3185	960
Flt Permitted				0.95	1.00		0.17	1.00			1.00	1.00
Satd. Flow (perm)				1004	5586		267	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	1366	96	63	404	0	0	1043	250
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	90	1447	0	63	404	0	0	1043	233
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2314		119	1419			1419	427
v/s Ratio Prot					c0.26			0.13			c0.33	
v/s Ratio Perm				0.09			0.24					0.24
v/c Ratio				0.22	0.63		0.53	0.28			0.74	0.55
Uniform Delay, d1				13.2	16.2		14.1	12.3			16.0	14.2
Progression Factor				0.28	0.36		0.97	0.85			0.48	0.32
Incremental Delay, d2				1.0	1.1		15.7	0.5			2.1	3.0
Delay (s)				4.6	7.0		29.3	11.0			9.8	7.5
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.9			13.5			9.4	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	22	1245	69	42	634	0	0	276	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5570			3175			1676	1021
Flt Permitted					1.00			0.92			1.00	1.00
Satd. Flow (perm)					5570			2919			1676	1021
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	24	1353	75	46	689	0	0	300	103
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1441	0	0	735	0	0	300	86
Confl. Peds. (#/hr)				475		328						224
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1271			730	444
v/s Ratio Prot											0.18	
v/s Ratio Perm					0.26			c0.25				0.08
v/c Ratio					0.60			0.58			0.41	0.19
Uniform Delay, d1					15.4			14.9			13.6	12.2
Progression Factor					0.69			0.25			0.39	0.25
Incremental Delay, d2					1.1			1.7			1.3	0.7
Delay (s)					11.7			5.4			6.7	3.8
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.7			5.4			5.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	804	0	0	0	0	0	1291	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	874	0	0	0	0	0	1403	335
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	0	0	0	978	0	0	0	0	0	1403	293
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.31	
v/s Ratio Perm					0.17							0.21
v/c Ratio					0.39						0.70	0.47
Uniform Delay, d1					13.6						16.1	14.0
Progression Factor					1.00						1.10	1.08
Incremental Delay, d2					0.5						1.5	1.8
Delay (s)					14.0						19.2	17.0
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1263	237	0	0	0	0	0	0	129	1133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1373	258	0	0	0	0	0	0	140	1232	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1373	244	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.24										
v/s Ratio Perm			c0.24								0.24	
v/c Ratio		0.55	0.56								0.56	
Uniform Delay, d1		14.8	14.9								14.8	
Progression Factor		1.00	1.00								1.64	
Incremental Delay, d2		0.9	5.2								0.8	
Delay (s)		15.7	20.1								25.0	
Level of Service		B	C								C	
Approach Delay (s)		16.4			0.0			0.0			25.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	409	989	0	0	0	0	0	1156	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6365				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6365				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	1075	0	0	0	0	0	1257	197	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	279	1211	0	0	0	0	0	1432	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2755				
v/s Ratio Prot								c0.23				
v/s Ratio Perm	c0.30	0.23										
v/c Ratio	0.70	0.54						0.52				
Uniform Delay, d1	16.2	14.7						14.5				
Progression Factor	0.25	0.21						1.70				
Incremental Delay, d2	8.2	0.8						0.6				
Delay (s)	12.3	3.8						25.4				
Level of Service	B	A						C				
Approach Delay (s)		5.5			0.0			25.4			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	182	0	0	0	0	303	91	145	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.97						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5594						3075		1593	4577	
Flt Permitted		1.00						1.00		0.46	1.00	
Satd. Flow (perm)		5594						3075		778	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	198	0	0	0	0	329	99	158	939	0
RTOR Reduction (vph)	0	38	0	0	0	0	0	40	0	0	0	0
Lane Group Flow (vph)	0	951	0	0	0	0	0	388	0	158	939	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						32.0		32.0	32.0	
Effective Green, g (s)		32.0						32.0		32.0	32.0	
Actuated g/C Ratio		0.46						0.46		0.46	0.46	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2557						1405		355	2092	
v/s Ratio Prot		c0.17						0.13			c0.21	
v/s Ratio Perm										0.20		
v/c Ratio		0.37						0.28		0.45	0.45	
Uniform Delay, d1		12.4						11.8		12.9	13.0	
Progression Factor		0.49						0.81		0.84	0.83	
Incremental Delay, d2		0.4						0.5		2.9	0.5	
Delay (s)		6.4						10.0		13.7	11.3	
Level of Service		A						B		B	B	
Approach Delay (s)		6.4			0.0			10.0			11.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	800	61	0	0	0	0	601	62	0	293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5501						3107			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5501						3107			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	870	66	0	0	0	0	653	67	0	318	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	998	0	0	0	0	0	711	0	0	318	0
Confl. Peds. (#/hr)	69		208						75			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		29.0						30.7			30.7	
Effective Green, g (s)		29.0						30.7			30.7	
Actuated g/C Ratio		0.41						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2278						1362			735	
v/s Ratio Prot								c0.23			0.19	
v/s Ratio Perm		0.18										
v/c Ratio		0.44						0.52			0.43	
Uniform Delay, d1		14.7						14.3			13.6	
Progression Factor		0.43						1.77			2.19	
Incremental Delay, d2		0.6						1.2			1.7	
Delay (s)		6.9						26.5			31.5	
Level of Service		A						C			C	
Approach Delay (s)		6.9			0.0			26.5			31.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	792	73	0	0	0	0	0	0	97	1179	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4560	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4560	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	861	79	0	0	0	0	0	0	105	1282	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	929	0	0	0	0	0	0	0	0	1372	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.38									0.69	
Uniform Delay, d1		13.5									15.9	
Progression Factor		0.15									0.71	
Incremental Delay, d2		0.4									1.5	
Delay (s)		2.5									12.8	
Level of Service		A									B	
Approach Delay (s)		2.5			0.0			0.0			12.8	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	253	0	0	399	115	323	1313	94	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	1425			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	275	0	0	434	125	351	1427	102	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	80	0	0	0
Lane Group Flow (vph)	98	275	0	0	434	6	351	1427	22	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Effective Green, g (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.62			0.50	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	225	1129			1786	62	342	984	306			
v/s Ratio Prot	c0.03	c0.01			0.01	0.00		c0.31				
v/s Ratio Perm		0.15			0.13		0.22		0.02			
v/c Ratio	0.44	0.24			0.24	0.09	1.03	1.45	0.07			
Uniform Delay, d1	44.4	8.6			14.0	45.9	39.2	39.2	31.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.4	0.1			0.1	0.6	55.6	208.3	0.5			
Delay (s)	45.7	8.7			14.0	46.5	94.8	247.6	31.7			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.4			21.3			207.3			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	145.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	224	172	86	396	0	0	0	0	159	904	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.96						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3042						5095	
Flt Permitted		1.00	1.00		0.84						0.99	
Satd. Flow (perm)		1676	971		2577						5095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	243	187	93	430	0	0	0	0	173	983	108
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	243	175	0	523	0	0	0	0	0	1247	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1205						2162	
v/s Ratio Prot		0.14										
v/s Ratio Perm			0.18		c0.20						0.24	
v/c Ratio		0.31	0.39		0.43						0.58	
Uniform Delay, d1		14.9	15.6		16.0						19.7	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.0	2.5		1.1						1.1	
Delay (s)		15.9	18.0		17.1						20.9	
Level of Service		B	B		B						C	
Approach Delay (s)		16.8			17.1			0.0			20.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	253	53	0	457	95	55	358	65	26	220	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1676	949		3185	775		2805			2973	
Flt Permitted		1.00	1.00		1.00	1.00		0.89			0.89	
Satd. Flow (perm)		1676	949		3185	775		2500			2670	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	275	58	0	497	103	60	389	71	28	239	26
RTOR Reduction (vph)	0	0	30	0	0	19	0	18	0	0	1	0
Lane Group Flow (vph)	0	275	28	0	497	84	0	502	0	0	292	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		814	460		1547	376		1071			1144	
v/s Ratio Prot		c0.16			0.16							
v/s Ratio Perm			0.03			0.11		c0.20			0.11	
v/c Ratio		0.34	0.06		0.32	0.22		0.47			0.26	
Uniform Delay, d1		11.1	9.5		11.0	10.4		14.3			12.8	
Progression Factor		1.00	1.00		0.14	0.04		1.35			1.00	
Incremental Delay, d2		1.1	0.3		0.4	1.1		1.3			0.5	
Delay (s)		12.2	9.8		1.9	1.5		20.6			13.4	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		11.8			1.8			20.6			13.4	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	263	92	50	467	0	0	0	0	123	803	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.53	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	896	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	286	100	54	508	0	0	0	0	134	873	84
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	286	83	54	508	0	0	0	0	134	873	47
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	384	718					513	1369	445
v/s Ratio Prot		0.17			c0.30						c0.27	
v/s Ratio Perm			0.09	0.06						0.11		0.05
v/c Ratio		0.40	0.20	0.14	0.71					0.26	0.64	0.11
Uniform Delay, d1		13.8	12.5	12.2	16.4					12.8	15.7	11.9
Progression Factor		0.76	0.74	1.74	1.73					0.88	0.70	1.04
Incremental Delay, d2		1.6	1.1	0.6	4.4					1.0	1.9	0.4
Delay (s)		12.1	10.4	21.7	32.7					12.3	12.9	12.8
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		11.6			31.6			0.0			12.9	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	430	0	0	410	177	77	1183	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5468				
Flt Permitted	0.30	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	511	1676			1676	976		5468				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	467	0	0	446	192	84	1286	75	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	11	0	0	0	0
Lane Group Flow (vph)	34	467	0	0	446	174	0	1434	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	184	605			605	352		2749				
v/s Ratio Prot		c0.28			0.27							
v/s Ratio Perm	0.07					0.18		0.26				
v/c Ratio	0.18	0.77			0.74	0.49		0.52				
Uniform Delay, d1	15.3	19.8			19.5	17.4		11.7				
Progression Factor	0.74	0.76			1.35	1.48		0.77				
Incremental Delay, d2	2.1	9.0			5.0	3.1		0.5				
Delay (s)	13.5	24.0			31.3	28.9		9.5				
Level of Service	B	C			C	C		A				
Approach Delay (s)		23.3			30.6			9.5			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	276	51	22	492	46	0	388	57	0	856	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2912			2950	
Flt Permitted	0.24	1.00	1.00	0.47	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	394	1676	929	794	1676	961		2912			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	300	55	24	535	50	0	422	62	0	930	137
RTOR Reduction (vph)	0	0	17	0	0	29	0	14	0	0	12	0
Lane Group Flow (vph)	23	300	38	24	535	21	0	471	0	0	1056	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	163	694	384	328	694	398		1456			1475	
v/s Ratio Prot		0.18			c0.32			0.16			c0.36	
v/s Ratio Perm	0.06		0.04	0.03		0.02						
v/c Ratio	0.14	0.43	0.10	0.07	0.77	0.05		0.32			0.72	
Uniform Delay, d1	12.8	14.6	12.5	12.4	17.6	12.3		10.4			13.6	
Progression Factor	0.26	0.24	0.07	1.75	1.69	3.20		1.54			0.68	
Incremental Delay, d2	1.2	1.3	0.3	0.4	6.7	0.2		0.6			2.8	
Delay (s)	4.5	4.8	1.3	22.0	36.6	39.4		16.6			12.0	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.3			36.2			16.6			12.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	268	28	11	453	23	8	642	51	0	392	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3032			1676	
Flt Permitted	0.31	1.00	1.00	0.52	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	519	1676	621	875	1676	964		2880			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	291	30	12	492	25	9	698	55	0	426	0
RTOR Reduction (vph)	0	0	17	0	0	15	0	8	0	0	0	0
Lane Group Flow (vph)	18	291	13	12	492	10	0	754	0	0	426	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	215	696	269	363	696	400		1250			727	
v/s Ratio Prot		0.17			c0.29						0.25	
v/s Ratio Perm	0.03		0.02	0.01		0.01		c0.26				
v/c Ratio	0.08	0.42	0.05	0.03	0.71	0.03		0.60			0.59	
Uniform Delay, d1	12.4	14.5	11.4	12.1	16.9	12.1		15.2			15.0	
Progression Factor	0.38	0.48	2.67	1.61	1.28	3.19		0.22			0.66	
Incremental Delay, d2	0.7	1.7	0.3	0.1	5.2	0.1		1.7			3.2	
Delay (s)	5.4	8.6	30.8	19.6	26.9	38.7		5.0			13.1	
Level of Service	A	A	C	B	C	D		A			B	
Approach Delay (s)		10.4			27.3			5.0			13.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	266	71	64	393	0	0	0	0	46	975	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1276	1676						4501	987
Flt Permitted		1.00	1.00	0.54	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	727	1676						4501	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	77	70	427	0	0	0	0	50	1060	135
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	289	51	70	427	0	0	0	0	0	1110	56
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	304	701						1877	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.10							0.25	0.06
v/c Ratio		0.41	0.13	0.23	0.61						0.59	0.14
Uniform Delay, d1		14.3	12.5	13.1	15.9						15.8	12.6
Progression Factor		0.39	0.10	1.00	1.00						0.18	0.07
Incremental Delay, d2		1.7	0.6	1.8	3.9						1.0	0.5
Delay (s)		7.2	1.8	14.9	19.8						3.9	1.4
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.0			19.1			0.0			3.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1571	154	322	1620	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1708	167	350	1761	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	74	117	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1708	93	233	1761	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	1678				
v/s Ratio Prot					c0.30			c0.38				
v/s Ratio Perm						0.08	0.21					
v/c Ratio					0.77	0.21	0.58	1.05				
Uniform Delay, d1					24.1	18.5	22.9	28.5				
Progression Factor					1.00	1.00	0.59	0.77				
Incremental Delay, d2					2.6	1.1	0.5	24.1				
Delay (s)					26.8	19.6	14.0	46.0				
Level of Service					C	B	B	D				
Approach Delay (s)		0.0			26.1			40.7			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	1049	66	58	437	0	0	687	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1505	3185			3185	1154
Flt Permitted				0.95	1.00		0.32	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		505	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	1140	72	63	475	0	0	747	168
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	97	1202	0	63	475	0	0	747	166
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		288	1820			1820	659
v/s Ratio Prot					c0.27			0.15			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.21	0.78		0.22	0.26			0.41	0.25
Uniform Delay, d1				16.3	20.6		7.3	7.6			8.4	7.5
Progression Factor				0.39	0.35		0.21	0.23			1.21	1.28
Incremental Delay, d2				0.9	3.4		1.6	0.3			0.5	0.7
Delay (s)				7.2	10.7		3.2	2.1			10.7	10.3
Level of Service				A	B		A	A			B	B
Approach Delay (s)		0.0			10.5			2.2			10.6	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	28	1033	43	89	669	0	0	289	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5691			3167			1676	1187
Flt Permitted					1.00			0.83			1.00	1.00
Satd. Flow (perm)					5691			2638			1676	1187
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	30	1123	47	97	727	0	0	314	172
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	90
Lane Group Flow (vph)	0	0	0	0	1192	0	0	824	0	0	314	82
Confl. Peds. (#/hr)				56		67						113
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					27.0			32.7			20.7	20.7
Effective Green, g (s)					27.0			32.7			20.7	20.7
Actuated g/C Ratio					0.39			0.47			0.30	0.30
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2195			1282			495	351
v/s Ratio Prot								c0.06			0.19	
v/s Ratio Perm					0.21			c0.24				0.07
v/c Ratio					0.54			0.64			0.63	0.23
Uniform Delay, d1					16.7			14.2			21.4	18.6
Progression Factor					0.83			1.09			1.21	2.40
Incremental Delay, d2					0.9			2.0			5.3	1.3
Delay (s)					14.7			17.4			31.1	46.1
Level of Service					B			B			C	D
Approach Delay (s)		0.0			14.7			17.4			36.4	
Approach LOS		A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	748	0	0	0	0	0	745	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5638						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5638						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	813	0	0	0	0	0	810	329
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	0	876	0	0	0	0	0	810	294
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.18	
v/s Ratio Perm					0.16							c0.22
v/c Ratio					0.40						0.37	0.47
Uniform Delay, d1					15.4						11.6	12.2
Progression Factor					1.00						0.29	0.19
Incremental Delay, d2					0.5						0.4	2.1
Delay (s)					16.0						3.8	4.5
Level of Service					B						A	A
Approach Delay (s)		0.0			16.0			0.0			4.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	515	1404	0	0	0	0	0	2103	164	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	1526	0	0	0	0	0	2286	178	0	0	0
RTOR Reduction (vph)	16	16	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	387	1667	0	0	0	0	0	2286	163	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	35.6	35.6						43.8	43.8			
Effective Green, g (s)	35.6	35.6						43.8	43.8			
Actuated g/C Ratio	0.40	0.40						0.49	0.49			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	395	2093						1550	498			
v/s Ratio Prot								c0.72				
v/s Ratio Perm	c0.39	0.31							0.16			
v/c Ratio	0.98	0.80						1.47	0.33			
Uniform Delay, d1	26.8	24.0						23.1	14.1			
Progression Factor	1.00	1.00						1.48	1.57			
Incremental Delay, d2	40.3	3.2						215.1	0.7			
Delay (s)	67.1	27.2						249.2	22.8			
Level of Service	E	C						F	C			
Approach Delay (s)		35.0			0.0			232.9			0.0	
Approach LOS		C			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	142.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1565	195	0	0	0	0	0	0	188	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5671								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5671								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1701	212	0	0	0	0	0	0	204	722	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1889	0	0	0	0	0	0	0	192	722	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2205								785	2845	
v/s Ratio Prot		c0.33									c0.13	
v/s Ratio Perm										0.12		
v/c Ratio		0.86								0.24	0.25	
Uniform Delay, d1		25.2								13.1	13.2	
Progression Factor		1.50								0.55	0.60	
Incremental Delay, d2		3.4								0.6	0.2	
Delay (s)		41.2								7.8	8.0	
Level of Service		D								A	A	
Approach Delay (s)		41.2			0.0			0.0			8.0	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1103	59	0	0	0	0	427	94	56	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5497						2944			3083	
Flt Permitted		0.99						1.00			0.79	
Satd. Flow (perm)		5497						2944			2475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	1199	64	0	0	0	0	464	102	61	228	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1429	0	0	0	0	0	554	0	0	289	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2669						1261			1060	
v/s Ratio Prot								c0.19				
v/s Ratio Perm		0.26									0.12	
v/c Ratio		0.54						0.44			0.27	
Uniform Delay, d1		12.5						14.1			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.8						1.1			0.6	
Delay (s)		13.3						15.2			19.9	
Level of Service		B						B			B	
Approach Delay (s)		13.3			0.0			15.2			19.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1358	240	0	0	0	0	0	0	183	937	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1476	261	0	0	0	0	0	0	199	1018	0
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1476	238	0	0	0	0	0	0	177	1018	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.32									c0.22	
v/s Ratio Perm			0.19							0.12		
v/c Ratio		0.74	0.43							0.28	0.53	
Uniform Delay, d1		16.4	13.6							13.5	15.3	
Progression Factor		1.30	1.33							0.29	0.40	
Incremental Delay, d2		2.3	2.2							1.0	1.0	
Delay (s)		23.6	20.4							4.9	7.1	
Level of Service		C	C							A	A	
Approach Delay (s)		23.1			0.0			0.0			6.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	264	1257	0	0	0	0	0	1195	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4471						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4471						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	1366	0	0	0	0	0	1299	101	0	0	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1631	0	0	0	0	0	1299	86	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1603						2308	678			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.36							0.06			
v/c Ratio		1.02						0.56	0.13			
Uniform Delay, d1		22.4						12.0	9.2			
Progression Factor		0.38						1.79	2.14			
Incremental Delay, d2		23.6						0.5	0.2			
Delay (s)		32.1						21.9	19.9			
Level of Service		C						C	B			
Approach Delay (s)		32.1			0.0			21.8			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	1145	53	0	0	0	0	497	72	162	447	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4460						3055		1593	3185	
Flt Permitted		1.00						1.00		0.36	1.00	
Satd. Flow (perm)		4460						3055		599	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	1245	58	0	0	0	0	540	78	176	486	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1354	0	0	0	0	0	615	0	176	486	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1911						1483		290	1547	
v/s Ratio Prot								0.20			0.15	
v/s Ratio Perm		0.30								c0.29		
v/c Ratio		0.71						0.41		0.61	0.31	
Uniform Delay, d1		16.4						11.6		13.1	10.9	
Progression Factor		1.61						1.81		1.21	1.07	
Incremental Delay, d2		0.7						0.8		8.6	0.5	
Delay (s)		27.1						21.8		24.5	12.2	
Level of Service		C						C		C	B	
Approach Delay (s)		27.1			0.0			21.8			15.5	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1288	67	0	0	0	0	706	95	0	310	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4426						3056			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4426						3056			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1400	73	0	0	0	0	767	103	0	337	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	65	1465	0	0	0	0	0	869	0	0	337	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1846						1331			730	
v/s Ratio Prot		c0.33						c0.28			0.20	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.79						0.65			0.46	
Uniform Delay, d1	12.5	17.8						15.6			14.0	
Progression Factor	0.35	0.27						0.35			0.74	
Incremental Delay, d2	0.4	2.7						1.8			1.6	
Delay (s)	4.7	7.5						7.2			11.9	
Level of Service	A	A						A			B	
Approach Delay (s)		7.3			0.0			7.2			11.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	990	75	0	0	0	0	793	94	112	701	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1552	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.26	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	432	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1076	82	0	0	0	0	862	102	122	762	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	117	1146	0	0	0	0	0	862	85	122	762	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	216	1597	
v/s Ratio Prot		c0.26						0.27			0.24	
v/s Ratio Perm	0.08								0.07	c0.28		
v/c Ratio	0.23	0.72						0.54	0.13	0.56	0.48	
Uniform Delay, d1	15.9	19.6						11.9	9.3	12.1	11.4	
Progression Factor	0.93	1.05						0.27	0.07	1.00	1.00	
Incremental Delay, d2	0.6	1.7						0.9	0.3	10.3	1.0	
Delay (s)	15.4	22.4						4.0	0.9	22.4	12.5	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		21.8			0.0			3.7			13.8	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	1165	106	65	1039	180	234	1683	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1350	1570	4577	1177	1449	3185	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	381	4577	1350	486	4577	1177	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	1266	115	71	1129	196	254	1829	187	0	0	0
RTOR Reduction (vph)	0	0	45	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	247	1266	70	71	1129	83	254	1829	152	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1251	816	73	691	177	859	1889	798			
v/s Ratio Prot	c0.10	0.28	0.03		c0.25		0.10	c0.57				
v/s Ratio Perm	0.24		0.02	0.15		0.07	0.08		0.11			
v/c Ratio	1.25	1.01	0.09	0.97	1.63	0.47	0.30	0.97	0.19			
Uniform Delay, d1	31.0	32.7	7.4	38.0	38.2	34.9	9.0	17.5	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.73	1.51	2.16			
Incremental Delay, d2	146.3	28.4	0.0	97.9	291.8	8.7	0.0	2.3	0.0			
Delay (s)	177.3	61.1	7.5	135.9	330.0	43.6	15.6	28.7	18.2			
Level of Service	F	E	A	F	F	D	B	C	B			
Approach Delay (s)		75.0			279.9			26.4			0.0	
Approach LOS		E			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	108.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	103	44	1003	0	0	0	0	80	489	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5727	1425
Flt Permitted		1.00	1.00	0.16	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	270	3185						5727	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	112	48	1090	0	0	0	0	87	532	124
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	1039	48	48	1090	0	0	0	0	0	619	104
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	115	1365						2429	604
v/s Ratio Prot		0.33			c0.34							
v/s Ratio Perm			0.03	0.18							0.11	0.07
v/c Ratio		0.76	0.08	0.42	0.80						0.25	0.17
Uniform Delay, d1		17.0	11.8	13.9	17.4						13.0	12.5
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		4.1	0.3	10.8	5.0						0.3	0.6
Delay (s)		21.0	12.1	24.7	22.3						13.3	13.1
Level of Service		C	B	C	C						B	B
Approach Delay (s)		20.1			22.4			0.0			13.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	1028	60	18	879	76	81	353	39	31	150	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3065			3026			2811	
Flt Permitted	0.18	1.00		0.14	1.00			0.82			0.86	
Satd. Flow (perm)	307	3129		229	3065			2517			2427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	1117	65	20	955	83	88	384	42	34	163	99
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	17	0
Lane Group Flow (vph)	162	1178	0	20	1032	0	0	507	0	0	279	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	154	1570		114	1538			1011			975	
v/s Ratio Prot		0.38			0.34							
v/s Ratio Perm	c0.53			0.09				c0.20			0.11	
v/c Ratio	1.05	0.75		0.18	0.67			0.50			0.29	
Uniform Delay, d1	24.9	19.9		13.6	18.7			22.4			20.2	
Progression Factor	1.00	1.00		0.56	0.47			1.00			1.00	
Incremental Delay, d2	87.0	3.3		2.9	2.0			1.8			0.7	
Delay (s)	111.9	23.2		10.5	10.9			24.2			20.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		33.9			10.9			24.2			20.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	768	100	60	782	0	0	0	0	205	731	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.20	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		328	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	835	109	65	850	0	0	0	0	223	795	163
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	934	0	65	850	0	0	0	0	223	795	114
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		147	1433					716	2059	641
v/s Ratio Prot		c0.30			0.27						c0.17	
v/s Ratio Perm				0.20						0.14		0.08
v/c Ratio		0.66		0.44	0.59					0.31	0.39	0.18
Uniform Delay, d1		21.6		18.9	20.6					17.6	18.3	16.4
Progression Factor		0.32		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.7		9.4	1.8					1.1	0.5	0.6
Delay (s)		8.6		28.2	22.4					18.7	18.9	17.0
Level of Service		A		C	C					B	B	B
Approach Delay (s)		8.6			22.9			0.0			18.6	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	929	0	0	715	106	102	1366	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.23	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	394	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1010	0	0	777	115	111	1485	84	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	34	0	0	0
Lane Group Flow (vph)	161	1010	0	0	889	0	0	1596	50	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	180	1460			1432			1824	570			
v/s Ratio Prot		0.32			0.28							
v/s Ratio Perm	c0.41							0.35	0.03			
v/c Ratio	0.89	0.69			0.62			0.88	0.09			
Uniform Delay, d1	17.4	15.0			14.3			19.4	13.1			
Progression Factor	1.00	1.00			0.65			0.59	0.85			
Incremental Delay, d2	44.0	2.7			1.8			4.3	0.2			
Delay (s)	61.4	17.7			11.1			15.6	11.3			
Level of Service	E	B			B			B	B			
Approach Delay (s)		23.7			11.1			15.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	805	53	62	677	87	46	396	33	48	500	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.26	1.00		0.21	1.00		0.38	1.00		0.43	1.00	1.00
Satd. Flow (perm)	429	3156		357	3131		639	3148		722	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	875	58	67	736	95	50	430	36	52	543	87
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	50
Lane Group Flow (vph)	80	926	0	67	817	0	50	457	0	52	543	37
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	205	1510		170	1498		273	1349		309	1365	610
v/s Ratio Prot		c0.29			0.26			0.15			c0.17	
v/s Ratio Perm	0.19			0.19			0.08			0.07		0.03
v/c Ratio	0.39	0.61		0.39	0.55		0.18	0.34		0.17	0.40	0.06
Uniform Delay, d1	11.7	13.5		11.7	12.9		12.4	13.4		12.3	13.8	11.7
Progression Factor	1.81	1.75		1.12	1.17		1.49	1.52		0.53	0.58	0.27
Incremental Delay, d2	4.2	1.4		5.6	1.2		1.5	0.7		1.1	0.8	0.2
Delay (s)	25.4	25.0		18.7	16.2		20.0	21.0		7.7	8.9	3.3
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		25.0			16.4			20.9			8.1	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	827	45	67	698	57	65	728	73	0	362	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1558	3137		1556	3125			3161	1330		1676	
Flt Permitted	0.26	1.00		0.20	1.00			0.86	1.00		1.00	
Satd. Flow (perm)	418	3137		324	3125			2739	1330		1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	899	49	73	759	62	71	791	79	0	393	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	24	0	0	0
Lane Group Flow (vph)	51	942	0	73	812	0	0	862	55	0	393	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1344		138	1339			1173	570		718	
v/s Ratio Prot		c0.30			0.26						0.23	
v/s Ratio Perm	0.12			0.23				c0.31	0.04			
v/c Ratio	0.28	0.70		0.53	0.61			0.73	0.10		0.55	
Uniform Delay, d1	13.0	16.3		14.8	15.4			16.7	11.9		14.9	
Progression Factor	1.55	1.56		1.41	1.49			0.45	0.33		1.53	
Incremental Delay, d2	3.3	2.6		13.0	1.9			3.4	0.3		2.6	
Delay (s)	23.5	28.1		33.9	25.0			10.9	4.2		25.4	
Level of Service	C	C		C	C			B	A		C	
Approach Delay (s)		27.9			25.7			10.3			25.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	674	76	26	424	43	66	792	81	94	586	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3137		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.15	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1593	3137		577	3141		248	3185	1425	358	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	733	83	28	461	47	72	861	88	102	637	203
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	54	0	0	125
Lane Group Flow (vph)	128	804	0	28	497	0	72	861	34	102	637	78
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1465		195	1063		95	1228	549	138	646	549
v/s Ratio Prot	c0.08	c0.26			0.16			0.27			c0.38	
v/s Ratio Perm				0.05			0.29		0.02	0.28		0.05
v/c Ratio	1.02	0.55		0.14	0.47		0.76	0.70	0.06	0.74	0.99	0.14
Uniform Delay, d1	32.2	13.4		16.1	18.2		18.7	18.1	13.5	18.5	21.3	14.0
Progression Factor	0.47	1.09		1.00	1.00		0.62	0.62	0.47	1.36	1.36	4.25
Incremental Delay, d2	76.1	1.1		1.5	1.5		38.6	3.0	0.2	27.3	30.5	0.5
Delay (s)	91.2	15.7		17.6	19.7		50.2	14.2	6.5	52.4	59.5	59.8
Level of Service	F	B		B	B		D	B	A	D	E	E
Approach Delay (s)		25.9			19.6			16.1			58.8	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	24	24	53	91	34	38	2018	10	10	169	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	170	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	26	26	58	99	37	41	2193	11	11	184	21
RTOR Reduction (vph)	0	0	20	0	0	32	0	0	5	0	0	12
Lane Group Flow (vph)	32	26	6	58	99	5	41	2193	6	11	184	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Effective Green, g (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Actuated g/C Ratio	0.10	0.17	0.23	0.08	0.14	0.14	0.06	0.55	0.55	0.44	0.44	0.44
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	319	279	323	127	456	204	95	1762	788	74	733	623
v/s Ratio Prot	0.01	c0.02	0.00	c0.04	0.03		0.03	c0.69			0.11	
v/s Ratio Perm			0.00			0.00			0.00	0.06		0.01
v/c Ratio	0.10	0.09	0.02	0.46	0.22	0.03	0.43	1.24	0.01	0.15	0.25	0.01
Uniform Delay, d1	36.6	31.7	27.0	39.5	34.1	33.1	40.8	20.1	9.0	15.2	16.0	14.3
Progression Factor	1.00	1.00	1.00	1.31	1.25	1.00	1.00	1.00	1.00	1.18	1.20	1.00
Incremental Delay, d2	0.1	0.1	0.0	2.5	0.2	0.0	3.1	115.0	0.0	4.0	0.8	0.0
Delay (s)	36.7	31.9	27.0	54.1	42.8	33.2	43.9	135.1	9.0	22.0	19.9	14.4
Level of Service	D	C	C	D	D	C	D	F	A	C	B	B
Approach Delay (s)		32.2			44.4			132.9			19.5	
Approach LOS		C			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	114.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	10	51	254	0	0	0	0	0	459	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1663						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1663						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	11	55	276	0	0	0	0	0	499	93
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	56
Lane Group Flow (vph)	0	0	5	0	331	0	0	0	0	0	499	37
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		813						1835	571
v/s Ratio Prot											c0.11	
v/s Ratio Perm			0.00		0.20							0.03
v/c Ratio			0.01		0.41						0.27	0.07
Uniform Delay, d1			11.8		14.7						18.1	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		1.5						0.4	0.2
Delay (s)			11.8		16.2						18.5	16.8
Level of Service			B		B						B	B
Approach Delay (s)		11.8			16.2			0.0			18.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	244	105	20	225	0	0	162	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1663	1399		3172			3090	
Flt Permitted					0.99	1.00		0.93			1.00	
Satd. Flow (perm)					1663	1399		2954			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	265	114	22	245	0	0	176	37
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	317	69	0	267	0	0	199	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					17.2	17.2		43.6			43.6	
Effective Green, g (s)					17.2	17.2		43.6			43.6	
Actuated g/C Ratio					0.25	0.25		0.62			0.62	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					408	343		1839			1924	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.19	0.05		c0.09				
v/c Ratio					0.78	0.20		0.15			0.10	
Uniform Delay, d1					24.6	21.0		5.5			5.3	
Progression Factor					1.06	1.11		1.00			1.00	
Incremental Delay, d2					13.4	1.3		0.2			0.1	
Delay (s)					39.4	24.5		5.6			5.4	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			35.5			5.6			5.4	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	84	202	0	0	0	0	0	756	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	91	220	0	0	0	0	0	822	63
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	91	220	0	0	0	0	0	822	32
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.13						c0.18	
v/s Ratio Perm				0.06								0.03
v/c Ratio				0.18	0.36						0.36	0.05
Uniform Delay, d1				15.3	16.5						10.4	8.8
Progression Factor				0.47	0.52						1.00	1.00
Incremental Delay, d2				0.7	1.5						0.4	0.2
Delay (s)				7.9	10.1						10.9	9.0
Level of Service				A	B						B	A
Approach Delay (s)		0.0			9.5			0.0			10.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	207	66	80	1491	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	225	72	87	1621	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	225	56	0	1694	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.13							
v/s Ratio Perm						0.04		0.37				
v/c Ratio					0.36	0.11		0.76				
Uniform Delay, d1					15.8	14.3		14.4				
Progression Factor					1.67	1.95		1.00				
Incremental Delay, d2					1.5	0.4		2.4				
Delay (s)					28.0	28.2		16.8				
Level of Service					C	C		B				
Approach Delay (s)		0.0			28.0			16.8			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	26	193	38	28	423	0	0	658	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1654	1374	1542	3185			3185	1263
Flt Permitted					0.99	1.00	0.34	1.00			1.00	1.00
Satd. Flow (perm)					1654	1374	557	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	28	210	41	30	460	0	0	715	46
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	0	238	12	30	460	0	0	715	28
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					496	412	342	1956			1956	775
v/s Ratio Prot								0.14			c0.22	
v/s Ratio Perm					0.14	0.01	0.05					0.02
v/c Ratio					0.48	0.03	0.09	0.24			0.37	0.04
Uniform Delay, d1					20.0	17.3	5.5	6.1			6.7	5.3
Progression Factor					0.79	0.97	1.00	1.00			0.69	0.23
Incremental Delay, d2					2.7	0.1	0.5	0.3			0.5	0.1
Delay (s)					18.6	16.9	6.0	6.4			5.2	1.3
Level of Service					B	B	A	A			A	A
Approach Delay (s)		0.0			18.3			6.3			4.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	218	34	72	854	0	0	407	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.69	1.00	1.00			0.92	
Flpb, ped/bikes					0.93	1.00	0.93	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.97	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1548	984	1478	3185			1493	
Flt Permitted					0.99	1.00	0.28	1.00			1.00	
Satd. Flow (perm)					1548	984	428	3185			1493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	237	37	78	928	0	0	442	151
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	0	288	14	78	928	0	0	575	0
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					574	365	210	1569			735	
v/s Ratio Prot								0.29			c0.39	
v/s Ratio Perm					0.19	0.01	0.18					
v/c Ratio					0.50	0.04	0.37	0.59			0.78	
Uniform Delay, d1					17.0	14.0	11.0	12.7			14.7	
Progression Factor					1.45	1.97	1.00	1.00			1.46	
Incremental Delay, d2					3.0	0.2	5.0	1.6			7.3	
Delay (s)					27.7	27.8	16.0	14.4			28.6	
Level of Service					C	C	B	B			C	
Approach Delay (s)		0.0			27.7			14.5			28.6	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	181	48	62	912	0	0	593	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3154	1425	1593	3185			3107	
Flt Permitted					0.99	1.00	0.32	1.00			1.00	
Satd. Flow (perm)					3154	1425	529	3185			3107	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	197	52	67	991	0	0	645	126
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	245	16	67	991	0	0	748	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	317	1911			1864	
v/s Ratio Prot								c0.31			0.24	
v/s Ratio Perm					0.08	0.01	0.13					
v/c Ratio					0.25	0.04	0.21	0.52			0.40	
Uniform Delay, d1					17.8	16.6	6.4	8.1			7.4	
Progression Factor					1.00	1.00	1.00	1.00			1.74	
Incremental Delay, d2					0.6	0.2	1.5	1.0			0.3	
Delay (s)					18.4	16.8	7.9	9.1			13.2	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.2			9.1			13.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	769	203	197	725	115	214	564	221	130	323	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1512	3185	1097	1593	4368		1544	3185	1229	1488	3043	
Flt Permitted	0.30	1.00	1.00	0.17	1.00		0.43	1.00	1.00	0.42	1.00	
Satd. Flow (perm)	478	3185	1097	283	4368		695	3185	1229	658	3043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	836	221	214	788	125	233	613	240	141	351	57
RTOR Reduction (vph)	0	0	146	0	24	0	0	0	15	0	15	0
Lane Group Flow (vph)	216	836	75	214	889	0	233	613	225	141	393	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	1079	371	229	1965		344	1362	621	222	1031	
v/s Ratio Prot		0.26		c0.07	0.20		c0.04	0.19	0.03		0.13	
v/s Ratio Perm	c0.45		0.07	0.35			c0.25		0.16	0.21		
v/c Ratio	1.34	0.77	0.20	0.93	0.45		0.68	0.45	0.36	0.64	0.38	
Uniform Delay, d1	29.8	26.7	21.1	19.6	17.1		20.2	18.2	13.5	25.1	22.6	
Progression Factor	1.00	1.00	1.00	1.96	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	189.4	5.4	1.2	33.4	0.5		5.2	1.1	0.4	13.1	1.1	
Delay (s)	219.1	32.1	22.3	71.8	13.5		25.5	19.3	13.8	38.1	23.7	
Level of Service	F	C	C	E	B		C	B	B	D	C	
Approach Delay (s)		62.1			24.6			19.4			27.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	719	139	200	877	488	33	579	128	60	846	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1589	3185	1190	3090	3185	1248	1514	3185	1316	1543	3185	1121
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	281	3185	1190	3090	3185	1248	229	3185	1316	497	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	782	151	217	953	530	36	629	139	65	920	147
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	267	782	103	217	953	482	36	629	122	65	920	130
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Effective Green, g (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270	1259	470	305	1256	492	77	1079	576	168	1079	491
v/s Ratio Prot	c0.10	0.25		0.07	0.30			0.20	0.02		c0.29	0.03
v/s Ratio Perm	c0.39		0.09			0.39	0.16		0.07	0.13		0.09
v/c Ratio	0.99	0.62	0.22	0.71	0.76	0.98	0.47	0.58	0.21	0.39	0.85	0.27
Uniform Delay, d1	17.0	21.8	18.0	39.3	23.5	26.9	23.4	24.5	15.7	22.6	27.7	16.0
Progression Factor	2.09	0.82	0.96	0.81	1.10	1.09	1.09	1.06	1.02	1.00	1.00	1.00
Incremental Delay, d2	43.3	1.7	0.8	6.4	3.6	32.3	18.2	2.2	0.2	6.6	8.6	0.3
Delay (s)	78.9	19.5	18.1	38.3	29.4	61.5	43.7	28.3	16.2	29.2	36.2	16.3
Level of Service	E	B	B	D	C	E	D	C	B	C	D	B
Approach Delay (s)		32.5			40.6			26.9			33.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	793	75	81	893	652	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2379
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	82	88	971	709	1008
RTOR Reduction (vph)	0	49	0	0	0	16
Lane Group Flow (vph)	862	33	88	971	709	992
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	35.7	35.7	15.4	54.6	25.6	41.0
Effective Green, g (s)	35.7	35.7	15.4	54.6	25.6	41.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.28	0.46
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1263	416	272	1932	878	1083
v/s Ratio Prot	c0.27		0.06	0.30	0.23	c0.16
v/s Ratio Perm		0.03				0.26
v/c Ratio	0.68	0.08	0.32	0.50	0.81	0.92
Uniform Delay, d1	22.5	16.9	32.7	10.0	29.9	22.9
Progression Factor	1.56	3.51	0.78	1.93	1.00	1.00
Incremental Delay, d2	2.5	0.3	0.5	0.7	5.5	11.8
Delay (s)	37.7	59.7	26.0	20.0	35.4	34.7
Level of Service	D	E	C	C	D	C
Approach Delay (s)	39.6			20.5	35.0	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1018	38	53	643	63	84	702	45	88	878	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00	0.93	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1143	1533	3185	1196	1474	3140		1589	3185	976
Flt Permitted	0.16	1.00	1.00	0.22	1.00	1.00	0.26	1.00		0.18	1.00	1.00
Satd. Flow (perm)	274	3185	1143	356	3185	1196	400	3140		306	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1107	41	58	699	68	91	763	49	96	954	162
RTOR Reduction (vph)	0	0	23	0	0	51	0	5	0	0	0	89
Lane Group Flow (vph)	272	1107	18	58	699	17	91	807	0	96	954	73
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	39.0	39.0	39.0	23.1	23.1	23.1	31.0	31.0		40.4	40.4	40.4
Effective Green, g (s)	39.0	39.0	39.0	23.1	23.1	23.1	31.0	31.0		40.4	40.4	40.4
Actuated g/C Ratio	0.43	0.43	0.43	0.26	0.26	0.26	0.34	0.34		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	306	1380	495	91	817	306	137	1081		228	1429	438
v/s Ratio Prot	c0.13	0.35			0.22			c0.26		0.03	c0.30	
v/s Ratio Perm	c0.26		0.02	0.16		0.01	0.23			0.16		0.07
v/c Ratio	0.89	0.80	0.04	0.64	0.86	0.06	0.66	0.75		0.42	0.67	0.17
Uniform Delay, d1	19.6	22.1	14.7	29.7	31.9	25.2	25.1	26.0		16.2	19.5	14.8
Progression Factor	1.12	1.10	0.91	0.90	0.95	3.89	1.53	1.49		1.00	1.00	1.00
Incremental Delay, d2	16.6	3.0	0.1	24.3	9.2	0.3	8.7	2.1		1.3	1.2	0.2
Delay (s)	38.6	27.5	13.4	51.1	39.6	98.5	47.0	40.8		17.5	20.7	14.9
Level of Service	D	C	B	D	D	F	D	D		B	C	B
Approach Delay (s)		29.2			45.3			41.4			19.7	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1093	42	45	719	78	60	562	125	80	426	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.92	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	834	1470	3185	1050	1536	4287		1500	2926	
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.25	1.00		0.27	1.00	
Satd. Flow (perm)	374	3185	834	367	3185	1050	410	4287		428	2926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1188	46	49	782	85	65	611	136	87	463	198
RTOR Reduction (vph)	0	0	19	0	0	50	0	24	0	0	53	0
Lane Group Flow (vph)	266	1188	27	49	782	35	65	723	0	87	608	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1886	493	152	1327	437	132	1381		137	942	
v/s Ratio Prot	c0.10	0.37			0.25			0.17			c0.21	
v/s Ratio Perm	c0.30		0.03	0.13		0.03	0.16			0.20		
v/c Ratio	0.68	0.63	0.06	0.32	0.59	0.08	0.49	0.52		0.64	0.65	
Uniform Delay, d1	11.2	11.9	7.7	17.7	20.3	15.8	24.6	24.9		26.0	26.1	
Progression Factor	1.44	1.73	1.95	0.59	0.62	0.69	1.08	1.16		1.00	1.00	
Incremental Delay, d2	3.6	1.3	0.2	4.8	1.7	0.3	12.1	1.4		20.3	3.4	
Delay (s)	19.8	21.9	15.3	15.3	14.4	11.2	38.7	30.2		46.3	29.5	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		21.3			14.1			30.9			31.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	1106	52	36	668	6	0	0	0	87	578	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1574	3185	1027	1525	3174						4468	1265
Flt Permitted	0.26	1.00	1.00	0.19	1.00						0.99	1.00
Satd. Flow (perm)	424	3185	1027	310	3174						4468	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1202	57	39	726	7	0	0	0	95	628	195
RTOR Reduction (vph)	0	0	19	0	1	0	0	0	0	0	0	24
Lane Group Flow (vph)	110	1202	38	39	732	0	0	0	0	0	723	171
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Effective Green, g (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	331	1691	545	125	1287						1563	559
v/s Ratio Prot	0.03	c0.38			0.23							0.03
v/s Ratio Perm	0.15		0.04	0.13							0.16	0.11
v/c Ratio	0.33	0.71	0.07	0.31	0.57						0.46	0.31
Uniform Delay, d1	11.7	15.9	10.3	18.2	20.7						22.7	16.2
Progression Factor	1.23	1.05	1.78	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	2.0	0.2	6.4	1.8						1.0	0.3
Delay (s)	14.8	18.6	18.5	24.6	22.5						23.7	16.5
Level of Service	B	B	B	C	C						C	B
Approach Delay (s)		18.3			22.6			0.0			22.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	15	33	37	68	150	20	414	17	14	1062	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2635		1593	2508		1582	3148		1472	3185	1337
Flt Permitted	0.95	1.00		0.95	1.00		0.17	1.00		0.47	1.00	1.00
Satd. Flow (perm)	1593	2635		1593	2508		284	3148		731	3185	1337
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	16	36	40	74	163	22	450	18	15	1154	117
RTOR Reduction (vph)	0	27	0	0	82	0	0	2	0	0	0	25
Lane Group Flow (vph)	126	25	0	40	155	0	22	466	0	15	1154	92
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Effective Green, g (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Actuated g/C Ratio	0.08	0.25		0.03	0.20		0.55	0.55		0.55	0.55	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	127	658		53	509		157	1741		404	1762	846
v/s Ratio Prot	c0.08	0.01		0.03	c0.06			0.15			c0.36	0.01
v/s Ratio Perm							0.08			0.02		0.06
v/c Ratio	0.99	0.04		0.75	0.30		0.14	0.27		0.04	0.65	0.11
Uniform Delay, d1	41.4	25.6		43.1	30.4		9.7	10.5		9.2	14.1	6.5
Progression Factor	1.00	1.00		1.00	1.00		1.12	1.11		2.12	2.23	3.02
Incremental Delay, d2	77.2	0.0		45.2	0.3		1.8	0.4		0.1	1.2	0.0
Delay (s)	118.5	25.6		88.4	30.8		12.8	12.1		19.6	32.6	19.7
Level of Service	F	C		F	C		B	B		B	C	B
Approach Delay (s)		91.4			39.1			12.1			31.3	
Approach LOS		F			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	172	0	340	16	91	767	45	32	1023	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.96	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3153		1577	3123		1527	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.20	1.00	1.00
Satd. Flow (perm)		1676	1277		3153		187	3123		321	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	187	0	370	17	99	834	49	35	1112	39
RTOR Reduction (vph)	0	0	15	0	4	0	0	5	0	0	0	24
Lane Group Flow (vph)	0	443	172	0	383	0	99	878	0	35	1112	15
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1235		126	1259	514
v/s Ratio Prot		c0.26			0.12			0.28			0.35	
v/s Ratio Perm			0.13				c0.53			0.11		0.01
v/c Ratio		0.54	0.28		0.25		1.36	0.71		0.28	0.88	0.03
Uniform Delay, d1		16.0	13.6		13.4		27.2	22.9		18.5	25.3	16.6
Progression Factor		1.00	1.00		0.87		0.96	0.94		1.03	1.12	1.38
Incremental Delay, d2		2.6	1.1		0.3		223.8	3.3		4.7	8.1	0.1
Delay (s)		18.5	14.7		12.0		250.0	24.7		23.7	36.5	23.0
Level of Service		B	B		B		F	C		C	D	C
Approach Delay (s)		17.4			12.0			47.4			35.7	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	581	79	0	497	42	110	478	83	0	455	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3024			1676	
Flt Permitted		1.00	1.00		1.00	1.00	0.15	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	257	3024			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	632	86	0	540	46	120	520	90	0	495	0
RTOR Reduction (vph)	0	0	44	0	0	24	0	16	0	0	0	0
Lane Group Flow (vph)	0	632	42	0	540	22	120	594	0	0	495	0
Confl. Peds. (#/hr)			122			33			112	112		64
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		43.5	43.5		43.5	43.5	36.1	36.1			23.6	
Effective Green, g (s)		43.5	43.5		43.5	43.5	36.1	36.1			23.6	
Actuated g/C Ratio		0.48	0.48		0.48	0.48	0.40	0.40			0.26	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		810	489		810	650	208	1212			439	
v/s Ratio Prot		c0.38			0.32		0.05	c0.20			c0.30	
v/s Ratio Perm			0.04			0.02	0.19					
v/c Ratio		0.78	0.09		0.67	0.03	0.58	0.49			1.13	
Uniform Delay, d1		19.3	12.5		17.7	12.2	34.2	20.1			33.2	
Progression Factor		0.64	0.04		0.39	0.99	0.77	0.77			0.81	
Incremental Delay, d2		6.9	0.3		2.8	0.1	3.6	0.3			78.9	
Delay (s)		19.3	0.9		9.7	12.2	29.8	15.7			105.9	
Level of Service		B	A		A	B	C	B			F	
Approach Delay (s)		17.1			9.9			18.1			105.9	
Approach LOS		B			A			B			F	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	475	174	56	542	0	0	0	0	17	605	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1504	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.29	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	466	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	189	61	589	0	0	0	0	18	658	40
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	22
Lane Group Flow (vph)	0	516	176	61	589	0	0	0	0	18	658	18
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	208	748					614	1433	275
v/s Ratio Prot		0.31			c0.35						c0.21	
v/s Ratio Perm			0.16	0.13						0.01		0.03
v/c Ratio		0.69	0.35	0.29	0.79					0.03	0.46	0.07
Uniform Delay, d1		19.9	16.3	15.9	21.3					13.8	17.2	14.0
Progression Factor		1.37	1.60	1.00	1.00					0.20	0.19	0.00
Incremental Delay, d2		3.4	1.3	3.6	8.2					0.1	1.0	0.4
Delay (s)		30.7	27.5	19.4	29.5					2.9	4.2	0.5
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		29.8			28.5			0.0			3.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	158	117	24	286	1026	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.93	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1473	3185	3185	748
Flt Permitted	0.95	1.00	0.22	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	336	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	127	26	311	1115	84
RTOR Reduction (vph)	0	27	0	0	0	19
Lane Group Flow (vph)	172	100	26	311	1115	65
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.6	19.6	60.7	60.7	60.7	60.7
Effective Green, g (s)	19.6	19.6	60.7	60.7	60.7	60.7
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	410	226	2148	2148	504
v/s Ratio Prot				0.10	c0.35	
v/s Ratio Perm	c0.12	0.05	0.08			0.09
v/c Ratio	0.56	0.24	0.12	0.14	0.52	0.13
Uniform Delay, d1	31.3	29.1	5.2	5.3	7.3	5.2
Progression Factor	1.00	1.00	1.00	1.00	2.53	3.70
Incremental Delay, d2	2.2	0.3	1.0	0.1	0.7	0.4
Delay (s)	33.5	29.4	6.2	5.4	19.3	19.7
Level of Service	C	C	A	A	B	B
Approach Delay (s)	31.8			5.5	19.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1406	176	58	421	0	0	1210	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1528	191	63	458	0	0	1315	230
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	107	1708	0	63	458	0	0	1315	219
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.55			0.14			c0.41	
v/s Ratio Perm				0.08			0.31					0.19
v/c Ratio				0.13	0.98		0.85	0.39			1.13	0.51
Uniform Delay, d1				9.1	18.9		26.2	21.1			28.5	22.2
Progression Factor				1.30	0.96		1.44	1.50			1.36	1.52
Incremental Delay, d2				0.2	12.9		60.4	0.8			65.8	3.2
Delay (s)				12.1	31.0		98.3	32.4			104.4	37.1
Level of Service				B	C		F	C			F	D
Approach Delay (s)		0.0			29.9			40.4			94.4	
Approach LOS		A			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	1232	80	137	429	0	0	198	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.95			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		2988			1676	976
Flt Permitted				0.95	1.00	1.00		0.78			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2349			1676	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	1339	87	149	466	0	0	215	157
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	65
Lane Group Flow (vph)	0	0	0	42	1339	49	0	615	0	0	215	92
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		978			698	406
v/s Ratio Prot					c0.42						0.13	
v/s Ratio Perm				0.04		0.04		c0.26				0.09
v/c Ratio				0.09	0.88	0.09		0.63			0.31	0.23
Uniform Delay, d1				12.7	21.0	12.7		20.7			17.6	16.9
Progression Factor				0.93	1.17	1.55		0.25			1.17	1.53
Incremental Delay, d2				0.3	5.6	0.2		1.0			0.3	0.3
Delay (s)				12.1	30.1	20.0		6.3			20.9	26.2
Level of Service				B	C	B		A			C	C
Approach Delay (s)		0.0			29.0			6.3			23.1	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	274	892	0	0	0	0	0	884	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	298	970	0	0	0	0	0	961	309
RTOR Reduction (vph)	0	0	0	66	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	232	970	0	0	0	0	0	961	296
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.30						0.21	
v/s Ratio Perm				0.18								c0.26
v/c Ratio				0.49	0.85						0.39	0.48
Uniform Delay, d1				22.5	26.7						12.2	13.0
Progression Factor				1.00	1.00						1.50	1.56
Incremental Delay, d2				3.6	8.1						0.5	2.6
Delay (s)				26.1	34.8						18.8	23.0
Level of Service				C	C						B	C
Approach Delay (s)		0.0			32.7			0.0			19.8	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	1176	0	0	116	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	1278	0	0	126	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	86	1278	0	0	126	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	54.8	74.5			9.0	
Effective Green, g (s)	54.8	74.5			9.0	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1881	5620			309	
v/s Ratio Prot	0.03	c0.19				
v/s Ratio Perm					c0.04	
v/c Ratio	0.05	0.23			0.41	
Uniform Delay, d1	7.1	1.6			38.0	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.1	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.1	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1003	138	0	0	0	0	1393	311	109	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4388		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4388		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	1090	150	0	0	0	0	1514	338	118	230	0
RTOR Reduction (vph)	0	0	98	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	121	1090	52	0	0	0	0	1832	0	118	230	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1857		236	912	
v/s Ratio Prot		c0.19						c0.42		c0.04	0.14	
v/s Ratio Perm	0.11		0.04									
v/c Ratio	0.31	0.55	0.12					0.99		0.50	0.25	
Uniform Delay, d1	21.6	23.8	20.1					25.7		39.9	10.8	
Progression Factor	1.01	1.02	1.35					0.49		1.00	1.00	
Incremental Delay, d2	2.1	1.1	0.5					15.7		1.7	0.7	
Delay (s)	24.0	25.4	27.6					28.4		41.6	11.5	
Level of Service	C	C	C					C		D	B	
Approach Delay (s)		25.5			0.0			28.4			21.7	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1352	116	0	0	0	0	682	92	109	1001	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.94	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3021		1493	3185	
Flt Permitted		1.00						1.00		0.25	1.00	
Satd. Flow (perm)		5642						3021		395	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1470	126	0	0	0	0	741	100	118	1088	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1611	0	0	0	0	0	838	0	118	1088	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1476		193	1557	
v/s Ratio Prot								0.28			c0.34	
v/s Ratio Perm		0.29								0.30		
v/c Ratio		0.68						0.57		0.61	0.70	
Uniform Delay, d1		21.0						16.3		16.8	17.9	
Progression Factor		0.75						0.45		0.31	0.17	
Incremental Delay, d2		1.2						1.4		1.3	0.2	
Delay (s)		17.0						8.8		6.6	3.2	
Level of Service		B						A		A	A	
Approach Delay (s)		17.0			0.0			8.8			3.6	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1321	73	0	0	0	0	426	161	0	292	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5388						2737			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5388						2737			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1436	79	0	0	0	0	463	175	0	317	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1659	0	0	0	0	0	636	0	0	317	0
Confl. Peds. (#/hr)	288		266						373	373		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2574						1116			683	
v/s Ratio Prot								c0.23			0.19	
v/s Ratio Perm		0.31										
v/c Ratio		0.64						0.57			0.46	
Uniform Delay, d1		17.7						20.6			19.5	
Progression Factor		0.44						0.92			1.02	
Incremental Delay, d2		0.9						2.0			2.2	
Delay (s)		8.7						20.8			22.0	
Level of Service		A						C			C	
Approach Delay (s)		8.7			0.0			20.8			22.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1353	194	0	0	0	0	0	0	294	1045	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5451									4330	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5451									4330	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1471	211	0	0	0	0	0	0	320	1136	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1664	0	0	0	0	0	0	0	0	1444	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2495									1900	
v/s Ratio Prot		c0.31										
v/s Ratio Perm											0.33	
v/c Ratio		0.67									0.76	
Uniform Delay, d1		19.0									21.3	
Progression Factor		1.40									0.47	
Incremental Delay, d2		1.1									2.8	
Delay (s)		27.7									12.9	
Level of Service		C									B	
Approach Delay (s)		27.7			0.0			0.0			12.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	391	1329	254	0	0	0	0	883	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	425	1445	276	0	0	0	0	960	254
RTOR Reduction (vph)	0	0	0	34	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	319	1749	0	0	0	0	0	960	241
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.21	
v/s Ratio Perm				c0.43	0.32							c0.26
v/c Ratio				0.96	0.72						0.47	0.58
Uniform Delay, d1				24.2	20.4						17.6	18.7
Progression Factor				1.30	1.27						1.00	1.00
Incremental Delay, d2				37.2	1.6						0.8	5.8
Delay (s)				68.7	27.5						18.4	24.5
Level of Service				E	C						B	C
Approach Delay (s)		0.0			34.2			0.0			19.7	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	976	82	572	1326	0	0	0	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5519		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5519		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1061	89	622	1441	0	0	0	402
RTOR Reduction (vph)	0	0	0	0	12	0	451	0	0	0	0	377
Lane Group Flow (vph)	0	0	0	0	1138	0	171	1441	0	0	0	25
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2017		851	2013				153
v/s Ratio Prot					c0.21		0.06	c0.31				
v/s Ratio Perm												c0.01
v/c Ratio					0.56		0.20	0.72				0.16
Uniform Delay, d1					22.8		25.0	20.6				40.1
Progression Factor					1.01		4.50	1.58				1.00
Incremental Delay, d2					1.1		0.4	1.6				0.5
Delay (s)					24.0		112.8	34.1				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			24.0			57.8			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	799	140	73	643	0	0	883	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1514	3185			3185	936
Flt Permitted				0.95	1.00		0.20	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		311	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	868	152	79	699	0	0	960	167
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	93	985	0	79	699	0	0	960	154
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				39.0	39.0		41.2	41.2			41.2	41.2
Effective Green, g (s)				39.0	39.0		41.2	41.2			41.2	41.2
Actuated g/C Ratio				0.43	0.43		0.46	0.46			0.46	0.46
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				373	2318		142	1458			1458	428
v/s Ratio Prot					c0.18			0.22			c0.30	
v/s Ratio Perm				0.11			0.25					0.16
v/c Ratio				0.25	0.42		0.56	0.48			0.66	0.36
Uniform Delay, d1				16.2	17.7		17.8	17.0			18.9	15.8
Progression Factor				0.29	0.25		1.47	1.59			1.72	1.86
Incremental Delay, d2				1.4	0.5		12.1	0.9			1.7	1.7
Delay (s)				6.1	5.0		38.2	27.8			34.2	31.2
Level of Service				A	A		D	C			C	C
Approach Delay (s)		0.0			5.1			28.9			33.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	884	63	45	506	0	0	304	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5403			3116			1676	831
Flt Permitted					1.00			0.90			1.00	1.00
Satd. Flow (perm)					5403			2810			1676	831
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	961	68	49	550	0	0	330	66
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1061	0	0	599	0	0	330	54
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1420			847	420
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.20			c0.21				0.07
v/c Ratio					0.50			0.42			0.39	0.13
Uniform Delay, d1					20.9			14.0			13.7	11.8
Progression Factor					0.50			1.53			1.80	2.09
Incremental Delay, d2					0.8			0.8			1.2	0.6
Delay (s)					11.3			22.1			25.9	25.2
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.3			22.1			25.8	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	664	0	0	0	0	0	976	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	722	0	0	0	0	0	1061	208
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	0	0	834	0	0	0	0	0	1061	161
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.15							0.11
v/c Ratio					0.37						0.46	0.22
Uniform Delay, d1					19.5						14.3	12.4
Progression Factor					1.00						0.54	0.49
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.9						8.2	6.5
Level of Service					B						A	A
Approach Delay (s)		0.0			19.9			0.0			7.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1526	171	0	0	0	0	0	0	188	1255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5500	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1659	186	0	0	0	0	0	0	204	1364	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1659	176	0	0	0	0	0	0	0	1556	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2468	
v/s Ratio Prot		c0.29										
v/s Ratio Perm			0.19								0.28	
v/c Ratio		0.64	0.43								0.63	
Uniform Delay, d1		19.3	17.0								19.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	3.2								1.1	
Delay (s)		20.5	20.2								23.0	
Level of Service		C	C								C	
Approach Delay (s)		20.5			0.0			0.0			23.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	579	1116	0	0	0	0	0	1495	196	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5044						6420				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5044						6420				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	1213	0	0	0	0	0	1625	213	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	347	1471	0	0	0	0	0	1823	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2874				
v/s Ratio Prot								c0.28				
v/s Ratio Perm	c0.41	0.29										
v/c Ratio	0.92	0.65						0.63				
Uniform Delay, d1	23.5	19.5						19.2				
Progression Factor	0.47	0.39						0.80				
Incremental Delay, d2	25.5	1.1						0.8				
Delay (s)	36.4	8.6						16.1				
Level of Service	D	A						B				
Approach Delay (s)		14.1			0.0			16.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1037	140	0	0	0	0	708	104	93	854	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5664						3124		1593	4577	
Flt Permitted		1.00						1.00		0.22	1.00	
Satd. Flow (perm)		5664						3124		364	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1127	152	0	0	0	0	770	113	101	928	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	1252	0	0	0	0	0	870	0	101	928	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						42.0		42.0	42.0	
Effective Green, g (s)		42.0						42.0		42.0	42.0	
Actuated g/C Ratio		0.47						0.47		0.47	0.47	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2643						1457		169	2135	
v/s Ratio Prot		c0.22						c0.28			0.20	
v/s Ratio Perm										0.28		
v/c Ratio		0.47						0.60		0.60	0.43	
Uniform Delay, d1		16.4						17.7		17.8	16.1	
Progression Factor		0.32						0.61		0.34	0.36	
Incremental Delay, d2		0.5						1.6		11.6	0.5	
Delay (s)		5.8						12.4		17.7	6.3	
Level of Service		A						B		B	A	
Approach Delay (s)		5.8			0.0			12.4			7.4	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	965	119	0	0	0	0	561	98	0	344	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5151						2938			1676	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5151						2938			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	1049	129	0	0	0	0	610	107	0	374	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1313	0	0	0	0	0	713	0	0	374	0
Confl. Peds. (#/hr)	288		266						373			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2289						1295			739	
v/s Ratio Prot								c0.24			0.22	
v/s Ratio Perm		0.25										
v/c Ratio		0.57						0.55			0.51	
Uniform Delay, d1		18.6						18.6			18.1	
Progression Factor		0.25						1.54			1.08	
Incremental Delay, d2		0.9						1.3			2.3	
Delay (s)		5.5						29.9			21.9	
Level of Service		A						C			C	
Approach Delay (s)		5.5			0.0			29.9			21.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1001	125	0	0	0	0	0	0	212	979	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1088	136	0	0	0	0	0	0	230	1064	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	1199	0	0	0	0	0	0	0	0	1271	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.28	
v/c Ratio		0.47									0.62	
Uniform Delay, d1		17.4									18.9	
Progression Factor		0.20									0.93	
Incremental Delay, d2		0.5									1.3	
Delay (s)		4.0									18.9	
Level of Service		A									B	
Approach Delay (s)		4.0			0.0			0.0			18.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	253	0	0	431	137	266	1358	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	1425			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	275	0	0	468	149	289	1476	75	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	55	0	0	0
Lane Group Flow (vph)	105	275	0	0	468	13	289	1476	21	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Effective Green, g (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	242	1062			1664	96	435	1251	389			
v/s Ratio Prot	c0.03	0.02			c0.02	0.01		c0.32				
v/s Ratio Perm		0.15			0.13		0.18		0.01			
v/c Ratio	0.43	0.26			0.28	0.13	0.66	1.18	0.05			
Uniform Delay, d1	52.8	12.0			19.0	52.6	38.7	43.6	32.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.2	0.1			0.1	0.6	7.8	89.5	0.3			
Delay (s)	54.0	12.2			19.1	53.3	46.5	133.1	32.4			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.7			27.4			115.4			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	84.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	251	182	73	406	0	0	0	0	43	1307	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3060						5514	
Flt Permitted		1.00	1.00		0.85						1.00	
Satd. Flow (perm)		1676	932		2627						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	273	198	79	441	0	0	0	0	47	1421	78
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	273	186	0	520	0	0	0	0	0	1537	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1228						2340	
v/s Ratio Prot		0.16										
v/s Ratio Perm			c0.20		0.20						0.28	
v/c Ratio		0.35	0.43		0.42						0.66	
Uniform Delay, d1		15.2	15.9		15.9						20.7	
Progression Factor		1.00	1.00		0.26						1.00	
Incremental Delay, d2		1.2	3.1		1.0						1.5	
Delay (s)		16.5	19.0		5.2						22.1	
Level of Service		B	B		A						C	
Approach Delay (s)		17.5			5.2			0.0			22.1	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	284	59	0	435	77	68	358	66	38	322	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.92			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1676	762		3185	650		2761			3030	
Flt Permitted		1.00	1.00		1.00	1.00		0.84			0.87	
Satd. Flow (perm)		1676	762		3185	650		2332			2643	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	309	64	0	473	84	74	389	72	41	350	15
RTOR Reduction (vph)	0	0	8	0	0	9	0	5	0	0	1	0
Lane Group Flow (vph)	0	309	56	0	473	75	0	530	0	0	405	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		838	381		1592	325		1010			1145	
v/s Ratio Prot		c0.18			0.15							
v/s Ratio Perm			0.07			0.12		c0.23			0.15	
v/c Ratio		0.37	0.15		0.30	0.23		0.52			0.35	
Uniform Delay, d1		13.8	12.1		13.2	12.7		18.7			17.1	
Progression Factor		0.51	0.44		1.17	1.24		1.08			1.00	
Incremental Delay, d2		1.2	0.8		0.4	1.4		1.7			0.9	
Delay (s)		8.2	6.1		15.9	17.2		21.8			17.9	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		7.9			16.1			21.8			17.9	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	309	70	39	443	0	0	0	0	196	1367	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.79	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1265	1676					933	3185	959
Flt Permitted		1.00	1.00	0.47	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	623	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	336	76	42	482	0	0	0	0	213	1486	51
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	336	63	42	482	0	0	0	0	213	1486	38
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	276	744					415	1419	427
v/s Ratio Prot		0.20			c0.29						c0.47	
v/s Ratio Perm			0.08	0.07						0.23		0.04
v/c Ratio		0.45	0.17	0.15	0.65					0.51	1.05	0.09
Uniform Delay, d1		17.4	15.0	14.9	19.5					17.9	24.9	14.4
Progression Factor		1.42	1.57	0.45	0.38					2.05	1.91	2.72
Incremental Delay, d2		1.9	0.9	0.9	3.4					3.8	35.6	0.3
Delay (s)		26.6	24.5	7.6	10.8					40.5	83.1	39.5
Level of Service		C	C	A	B					D	F	D
Approach Delay (s)		26.2			10.5			0.0			76.6	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	530	0	0	462	154	110	1288	99	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5256				
Flt Permitted	0.37	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	613	1676			1676	803		5256				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	576	0	0	502	167	120	1400	108	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	48	576	0	0	502	157	0	1616	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	328	899			899	430		1880				
v/s Ratio Prot		c0.34			0.30							
v/s Ratio Perm	0.08					0.20		0.31				
v/c Ratio	0.15	0.64			0.56	0.36		0.86				
Uniform Delay, d1	10.5	14.7			13.8	12.0		26.8				
Progression Factor	0.70	0.67			1.39	1.42		0.84				
Incremental Delay, d2	0.9	3.2			1.7	1.7		0.5				
Delay (s)	8.2	13.1			20.9	18.8		23.1				
Level of Service	A	B			C	B		C				
Approach Delay (s)		12.7			20.3			23.1			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	421	61	21	435	108	0	685	51	0	970	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	0.87	1.00	1.00	0.86	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1378	1676	801	1367	1676	799		3003			2804	
Flt Permitted	0.33	1.00	1.00	0.35	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	486	1676	801	500	1676	799		3003			2804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	458	66	23	473	117	0	745	55	0	1054	201
RTOR Reduction (vph)	0	0	2	0	0	2	0	4	0	0	4	0
Lane Group Flow (vph)	41	458	64	23	473	115	0	796	0	0	1251	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	232	800	382	238	800	381		1368			1277	
v/s Ratio Prot		0.27			c0.28			0.26			c0.45	
v/s Ratio Perm	0.08		0.08	0.05		0.14						
v/c Ratio	0.18	0.57	0.17	0.10	0.59	0.30		0.58			0.98	
Uniform Delay, d1	13.4	16.9	13.3	12.9	17.1	14.3		18.1			24.1	
Progression Factor	1.47	1.54	1.49	1.92	1.69	1.85		1.27			1.14	
Incremental Delay, d2	1.2	2.2	0.7	0.7	2.9	1.8		1.6			20.0	
Delay (s)	21.0	28.2	20.5	25.4	31.7	28.3		24.6			47.5	
Level of Service	C	C	C	C	C	C		C			D	
Approach Delay (s)		26.8			30.8			24.6			47.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	406	37	12	422	58	10	710	57	0	553	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1377	1676	439	1593	1676	881		2995			1676	
Flt Permitted	0.35	1.00	1.00	0.36	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	503	1676	439	611	1676	881		2834			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	441	40	13	459	63	11	772	62	0	601	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	0
Lane Group Flow (vph)	27	441	22	13	459	45	0	841	0	0	601	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	224	746	195	272	746	392		1240			733	
v/s Ratio Prot		0.26			c0.27						c0.36	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.30				
v/c Ratio	0.12	0.59	0.11	0.05	0.62	0.12		0.68			0.82	
Uniform Delay, d1	14.6	18.8	14.6	14.1	19.1	14.6		20.2			22.2	
Progression Factor	0.47	0.74	0.51	0.88	1.08	1.23		0.75			0.55	
Incremental Delay, d2	0.9	2.8	1.0	0.3	3.3	0.5		1.8			9.2	
Delay (s)	7.8	16.7	8.4	12.8	23.9	18.4		17.0			21.3	
Level of Service	A	B	A	B	C	B		B			C	
Approach Delay (s)		15.6			23.0			17.0			21.3	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	71	58	375	0	0	0	0	64	878	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1372	1676						4400	618
Flt Permitted		1.00	1.00	0.36	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	517	1676						4400	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	77	63	408	0	0	0	0	70	954	139
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	443	57	63	408	0	0	0	0	0	1024	62
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	220	713						1965	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.07	0.12							0.23	0.10
v/c Ratio		0.62	0.16	0.29	0.57						0.52	0.22
Uniform Delay, d1		20.2	15.9	16.9	19.6						18.0	15.3
Progression Factor		1.65	2.07	1.00	1.00						1.42	4.60
Incremental Delay, d2		3.3	0.8	3.3	3.3						0.8	1.5
Delay (s)		36.6	33.8	20.2	22.9						26.3	71.9
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.2			22.6			0.0			31.7	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1990	341	241	2096	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2163	371	262	2278	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	93	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2163	249	169	2278	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	1423				
v/s Ratio Prot					c0.38			c0.50				
v/s Ratio Perm						0.22	0.11					
v/c Ratio					0.85	0.51	0.34	1.60				
Uniform Delay, d1					22.5	18.1	23.9	31.0				
Progression Factor					1.00	1.00	0.81	0.87				
Incremental Delay, d2					3.8	3.7	1.3	272.7				
Delay (s)					26.3	21.8	20.6	299.7				
Level of Service					C	C	C	F				
Approach Delay (s)		0.0			25.6			270.9			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	148.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	1191	105	66	687	0	0	874	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4416		1505	3185			3185	975
Flt Permitted				0.95	1.00		0.22	1.00			1.00	1.00
Satd. Flow (perm)				1160	4416		353	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	1295	114	72	747	0	0	950	179
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	92	1397	0	72	747	0	0	950	178
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1717		192	1734			1734	530
v/s Ratio Prot					c0.32			0.23			c0.30	
v/s Ratio Perm				0.08			0.20					0.18
v/c Ratio				0.20	0.81		0.38	0.43			0.55	0.34
Uniform Delay, d1				18.3	24.6		11.7	12.2			13.3	11.4
Progression Factor				1.90	1.83		0.95	0.81			1.57	1.69
Incremental Delay, d2				0.8	3.5		5.1	0.7			0.5	0.7
Delay (s)				35.4	48.5		16.3	10.6			21.4	19.9
Level of Service				D	D		B	B			C	B
Approach Delay (s)		0.0			47.7			11.1			21.1	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	71	1146	66	94	722	0	0	395	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			0.99			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5600			3145			1676	971
Flt Permitted					1.00			0.69			1.00	1.00
Satd. Flow (perm)					5600			2177			1676	971
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	77	1246	72	102	785	0	0	429	212
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	63
Lane Group Flow (vph)	0	0	0	0	1386	0	0	887	0	0	429	149
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2364			1102			515	298
v/s Ratio Prot								c0.08			0.26	
v/s Ratio Perm					0.25			c0.30				0.15
v/c Ratio					0.59			0.80			0.83	0.50
Uniform Delay, d1					20.0			20.7			29.0	25.5
Progression Factor					1.85			1.53			1.68	2.28
Incremental Delay, d2					0.9			4.6			9.6	3.7
Delay (s)					37.9			36.2			58.4	61.7
Level of Service					D			D			E	E
Approach Delay (s)		0.0			37.9			36.2			59.5	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	117	1082	0	0	0	0	0	697	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5564						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5564						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	127	1176	0	0	0	0	0	758	211
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1283	0	0	0	0	0	758	200
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2244						2263	634
v/s Ratio Prot											c0.17	
v/s Ratio Perm					0.23							0.16
v/c Ratio					0.57						0.33	0.32
Uniform Delay, d1					20.8						13.8	13.6
Progression Factor					1.00						1.80	1.91
Incremental Delay, d2					1.1						0.4	1.2
Delay (s)					21.9						25.2	27.2
Level of Service					C						C	C
Approach Delay (s)		0.0			21.9			0.0			25.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	1616	0	0	0	0	0	1380	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	957			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	957			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	1757	0	0	0	0	0	1500	191	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	301	1777	0	0	0	0	0	1500	175	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	39.6	39.6						39.8	39.8			
Effective Green, g (s)	39.6	39.6						39.8	39.8			
Actuated g/C Ratio	0.44	0.44						0.44	0.44			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	481	2380						1408	423			
v/s Ratio Prot								c0.47				
v/s Ratio Perm	0.28	0.33							0.18			
v/c Ratio	0.63	0.75						1.07	0.41			
Uniform Delay, d1	19.5	21.0						25.1	17.1			
Progression Factor	1.00	1.00						1.23	1.48			
Incremental Delay, d2	6.0	2.2						35.8	1.1			
Delay (s)	25.5	23.2						66.6	26.4			
Level of Service	C	C						E	C			
Approach Delay (s)		23.5			0.0			62.0			0.0	
Approach LOS		C			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1337	262	0	0	0	0	0	0	164	1307	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5625								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5625								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1453	285	0	0	0	0	0	0	178	1421	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1725	0	0	0	0	0	0	0	166	1421	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2187								785	2845	
v/s Ratio Prot		c0.31									c0.25	
v/s Ratio Perm										0.10		
v/c Ratio		0.79								0.21	0.50	
Uniform Delay, d1		24.2								12.9	15.3	
Progression Factor		1.69								0.50	0.73	
Incremental Delay, d2		2.0								0.5	0.5	
Delay (s)		43.0								6.9	11.7	
Level of Service		D								A	B	
Approach Delay (s)		43.0			0.0			0.0			11.2	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	1302	42	0	0	0	0	581	90	94	384	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.98	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5449						2977			3098	
Flt Permitted		0.99						1.00			0.71	
Satd. Flow (perm)		5449						2977			2226	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	1415	46	0	0	0	0	632	98	102	417	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1644	0	0	0	0	0	730	0	0	519	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1937						1720			1286	
v/s Ratio Prot								c0.25				
v/s Ratio Perm		0.30									0.23	
v/c Ratio		0.85						0.42			0.40	
Uniform Delay, d1		26.8						10.6			10.5	
Progression Factor		1.22						1.00			0.46	
Incremental Delay, d2		3.4						0.8			0.9	
Delay (s)		36.0						11.4			5.7	
Level of Service		D						B			A	
Approach Delay (s)		36.0			0.0			11.4			5.7	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1591	236	0	0	0	0	0	0	228	1818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1729	257	0	0	0	0	0	0	248	1976	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1729	244	0	0	0	0	0	0	233	1976	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.38									c0.43	
v/s Ratio Perm			0.21							0.16		
v/c Ratio		0.96	0.52							0.32	0.88	
Uniform Delay, d1		26.4	20.7							13.8	20.5	
Progression Factor		0.77	0.65							0.94	0.75	
Incremental Delay, d2		10.6	3.1							0.8	3.8	
Delay (s)		31.0	16.5							13.9	19.1	
Level of Service		C	B							B	B	
Approach Delay (s)		29.1			0.0			0.0			18.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	499	2423	0	0	0	0	0	2010	303	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4413						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4413						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	2634	0	0	0	0	0	2185	329	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	3163	0	0	0	0	0	2185	317	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1770						2252	635			
v/s Ratio Prot								c0.48				
v/s Ratio Perm		0.72							0.25			
v/c Ratio		1.79						0.97	0.50			
Uniform Delay, d1		26.9						22.2	15.4			
Progression Factor		1.16						0.68	0.59			
Incremental Delay, d2		356.2						12.4	2.6			
Delay (s)		387.4						27.4	11.6			
Level of Service		F						C	B			
Approach Delay (s)		387.4			0.0			25.4			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	227.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1404	52	0	0	0	0	641	67	112	928	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.92	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4463						3050		1469	3185	
Flt Permitted		1.00						1.00		0.30	1.00	
Satd. Flow (perm)		4463						3050		470	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1526	57	0	0	0	0	697	73	122	1009	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1616	0	0	0	0	0	770	0	122	1009	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1586						1762		271	1840	
v/s Ratio Prot								0.25			c0.32	
v/s Ratio Perm		0.36								0.26		
v/c Ratio		1.02						0.44		0.45	0.55	
Uniform Delay, d1		29.0						10.7		10.8	11.7	
Progression Factor		1.56						0.22		0.37	0.35	
Incremental Delay, d2		12.4						0.6		4.8	1.1	
Delay (s)		57.6						3.0		8.7	5.1	
Level of Service		E						A		A	A	
Approach Delay (s)		57.6			0.0			3.0			5.5	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1393	104	0	0	0	0	828	108	0	499	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4360						3005			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4360						3005			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1514	113	0	0	0	0	900	117	0	542	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	193	1617	0	0	0	0	0	1016	0	0	542	0
Confl. Peds. (#/hr)	296		272						287	287		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1899						1352			754	
v/s Ratio Prot		c0.37						c0.34			0.32	
v/s Ratio Perm	0.18											
v/c Ratio	0.41	0.85						0.75			0.72	
Uniform Delay, d1	17.5	22.8						20.6			20.1	
Progression Factor	0.53	0.69						0.77			0.42	
Incremental Delay, d2	1.1	2.2						2.6			3.9	
Delay (s)	10.3	18.0						18.4			12.3	
Level of Service	B	B						B			B	
Approach Delay (s)		17.2			0.0			18.4			12.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	936	124	0	0	0	0	1179	91	72	843	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4333						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1221	4333						3185	1110	225	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	1017	135	0	0	0	0	1282	99	78	916	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	327	1133	0	0	0	0	0	1282	87	78	916	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1434						1772	617	125	1772	
v/s Ratio Prot		0.26						c0.40			0.29	
v/s Ratio Perm	c0.27								0.08	0.35		
v/c Ratio	0.81	0.79						0.72	0.14	0.62	0.52	
Uniform Delay, d1	27.5	27.3						14.8	9.6	13.6	12.4	
Progression Factor	1.62	1.65						1.64	2.05	1.00	1.00	
Incremental Delay, d2	8.7	2.3						1.7	0.3	21.2	1.1	
Delay (s)	53.3	47.4						26.0	19.9	34.8	13.5	
Level of Service	D	D						C	B	C	B	
Approach Delay (s)		48.7			0.0			25.6			15.2	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	970	206	98	1500	215	247	1309	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.76	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1078	1457	4577	950	1164	3185	1246			
Flt Permitted	0.15	1.00	1.00	0.26	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1078	398	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1054	224	107	1630	234	268	1423	200	0	0	0
RTOR Reduction (vph)	0	0	88	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	187	1054	136	107	1630	134	268	1423	156	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	656	99	1149	238	561	1535	600			
v/s Ratio Prot	c0.08	0.23	0.05		c0.36		0.11	c0.45				
v/s Ratio Perm	0.26		0.08	0.27		0.14	0.12		0.13			
v/c Ratio	0.87	0.60	0.21	1.08	1.42	0.56	0.48	0.93	0.26			
Uniform Delay, d1	22.5	22.2	7.9	33.7	33.7	29.4	15.7	21.8	13.8			
Progression Factor	1.00	1.00	1.00	1.08	1.04	1.23	0.50	0.71	0.26			
Incremental Delay, d2	28.4	1.5	0.2	95.3	191.7	6.0	0.1	3.1	0.2			
Delay (s)	50.9	23.7	8.0	131.9	226.8	42.1	7.9	18.5	3.9			
Level of Service	D	C	A	F	F	D	A	B	A			
Approach Delay (s)		24.8			199.7			15.4			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	86.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	60	51	1245	0	0	0	0	63	1205	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.18	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	295	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	65	55	1353	0	0	0	0	68	1310	411
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1039	50	55	1353	0	0	0	0	0	1378	397
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	140	1521						2345	581
v/s Ratio Prot		0.33			c0.42							
v/s Ratio Perm			0.04	0.19							0.24	c0.28
v/c Ratio		0.68	0.07	0.39	0.89						0.59	0.68
Uniform Delay, d1		18.2	12.7	15.1	21.3						20.8	21.9
Progression Factor		0.39	0.13	1.00	1.00						1.69	1.69
Incremental Delay, d2		2.2	0.2	8.1	8.2						0.9	5.5
Delay (s)		9.2	1.8	23.2	29.5						36.1	42.6
Level of Service		A	A	C	C						D	D
Approach Delay (s)		8.8			29.3			0.0			37.6	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	961	40	29	1014	66	91	480	49	28	279	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3128		1593	3086			3043			2886	
Flt Permitted	0.14	1.00		0.17	1.00			0.77			0.88	
Satd. Flow (perm)	233	3128		279	3086			2367			2545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1045	43	32	1102	72	99	522	53	30	303	115
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	7	0
Lane Group Flow (vph)	132	1085	0	32	1169	0	0	667	0	0	441	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	116	1570		140	1549			951			1023	
v/s Ratio Prot		0.35			0.38							
v/s Ratio Perm	c0.57			0.11				c0.28			0.17	
v/c Ratio	1.14	0.69		0.23	0.75			0.70			0.43	
Uniform Delay, d1	24.9	19.0		14.0	20.0			24.9			21.6	
Progression Factor	1.00	1.00		0.47	0.58			1.00			1.00	
Incremental Delay, d2	125.4	2.5		2.4	2.2			4.3			1.3	
Delay (s)	150.3	21.5		9.0	13.8			29.2			23.0	
Level of Service	F	C		A	B			C			C	
Approach Delay (s)		35.4			13.6			29.2			23.0	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	892	101	101	1198	0	0	0	0	111	1465	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3137		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.17	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3137		283	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	970	110	110	1302	0	0	0	0	121	1592	277
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	1078	0	110	1302	0	0	0	0	121	1592	258
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		141	1592					637	1830	570
v/s Ratio Prot		0.34			c0.41						c0.35	
v/s Ratio Perm				0.39						0.08		0.18
v/c Ratio		0.69		0.78	0.82					0.19	0.87	0.45
Uniform Delay, d1		19.0		20.5	21.1					19.5	27.6	22.0
Progression Factor		0.98		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.8		33.8	4.8					0.7	6.0	2.6
Delay (s)		20.5		54.3	25.9					20.1	33.6	24.6
Level of Service		C		D	C					C	C	C
Approach Delay (s)		20.5			28.1			0.0			31.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	884	0	0	1131	80	138	931	43	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3131			4529	1327			
Flt Permitted	0.11	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	179	3185			3131			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	961	0	0	1229	87	150	1012	47	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	29	0	0	0
Lane Group Flow (vph)	170	961	0	0	1310	0	0	1162	18	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	91	1631			1603			1710	501			
v/s Ratio Prot		0.30			0.42							
v/s Ratio Perm	c0.95							0.26	0.01			
v/c Ratio	1.87	0.59			0.82			0.68	0.04			
Uniform Delay, d1	21.9	15.3			18.4			23.4	17.7			
Progression Factor	1.00	1.00			0.65			0.54	0.29			
Incremental Delay, d2	429.4	1.6			4.6			1.9	0.1			
Delay (s)	451.3	16.9			16.7			14.4	5.3			
Level of Service	F	B			B			B	A			
Approach Delay (s)		82.2			16.7			14.1			0.0	
Approach LOS		F			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	723	53	43	611	71	43	593	53	49	853	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1551	3111		1523	3104		1593	3110		1541	3185	1230
Flt Permitted	0.32	1.00		0.28	1.00		0.13	1.00		0.23	1.00	1.00
Satd. Flow (perm)	525	3111		446	3104		216	3110		377	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	786	58	47	664	77	47	645	58	53	927	158
RTOR Reduction (vph)	0	6	0	0	10	0	0	7	0	0	0	80
Lane Group Flow (vph)	70	838	0	47	731	0	47	696	0	53	927	78
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	306	1814		260	1810		74	1071		129	1097	423
v/s Ratio Prot		c0.27			0.24			0.22			c0.29	
v/s Ratio Perm	0.13			0.11			0.22			0.14		0.06
v/c Ratio	0.23	0.46		0.18	0.40		0.64	0.65		0.41	0.85	0.18
Uniform Delay, d1	9.0	10.7		8.7	10.2		24.8	24.9		22.5	27.3	20.7
Progression Factor	2.28	2.19		1.20	0.90		0.59	0.53		1.58	1.55	2.96
Incremental Delay, d2	1.4	0.7		1.2	0.5		33.4	2.9		8.1	6.9	0.8
Delay (s)	22.0	24.1		11.7	9.7		47.9	16.1		43.7	49.2	62.0
Level of Service	C	C		B	A		D	B		D	D	E
Approach Delay (s)		24.0			9.9			18.1			50.7	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	716	77	89	675	100	35	753	70	0	581	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.96	1.00		0.94	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1527	3053		1502	3042			3178	1263		1676	
Flt Permitted	0.24	1.00		0.24	1.00			0.78	1.00		1.00	
Satd. Flow (perm)	394	3053		374	3042			2485	1263		1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	778	84	97	734	109	38	818	76	0	632	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	23	0	0	0
Lane Group Flow (vph)	86	853	0	97	830	0	0	856	53	0	632	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1390		170	1385			1076	547		726	
v/s Ratio Prot		c0.28			0.27						c0.38	
v/s Ratio Perm	0.22			0.26				0.34	0.04			
v/c Ratio	0.48	0.61		0.57	0.60			0.80	0.10		0.87	
Uniform Delay, d1	17.1	18.5		18.0	18.3			22.1	15.1		23.2	
Progression Factor	0.73	0.74		1.50	1.57			0.53	0.45		1.26	
Incremental Delay, d2	8.2	1.9		8.0	1.1			5.0	0.3		9.4	
Delay (s)	20.7	15.5		35.1	29.9			16.7	7.1		38.5	
Level of Service	C	B		D	C			B	A		D	
Approach Delay (s)		16.0			30.5			15.9			38.5	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	559	126	87	752	120	69	880	104	60	753	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3097		1593	3120		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.11	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1593	3097		618	3120		176	3185	1425	301	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	608	137	95	817	130	75	957	113	65	818	299
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	158
Lane Group Flow (vph)	189	724	0	95	933	0	75	957	64	65	818	141
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1434		203	1029		74	1344	601	127	707	601
v/s Ratio Prot	c0.12	0.23			c0.30			0.30			c0.49	
v/s Ratio Perm				0.15			0.42		0.05	0.22		0.10
v/c Ratio	1.26	0.50		0.47	0.91		1.01	0.71	0.11	0.51	1.16	0.24
Uniform Delay, d1	40.8	16.9		23.9	28.8		26.0	21.5	15.7	19.2	26.0	16.7
Progression Factor	0.83	1.17		1.00	1.00		1.03	1.01	1.57	0.66	0.73	0.46
Incremental Delay, d2	154.9	1.1		7.6	13.0		103.8	3.0	0.3	12.4	84.5	0.8
Delay (s)	188.9	20.9		31.5	41.8		130.6	24.7	25.1	25.1	103.4	8.5
Level of Service	F	C		C	D		F	C	C	C	F	A
Approach Delay (s)		54.9			40.9			31.7			75.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	34	50	193	439	286	7	1624	0	9	281	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		197	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	37	54	210	477	311	8	1765	0	10	305	35
RTOR Reduction (vph)	0	0	41	0	0	131	0	0	0	0	0	22
Lane Group Flow (vph)	78	37	13	210	477	180	8	1765	0	10	305	13
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.5	17.0	22.0	10.9	20.4	20.4	5.0	44.1		34.1	34.1	34.1
Effective Green, g (s)	7.5	17.0	22.0	10.9	20.4	20.4	5.0	44.1		34.1	34.1	34.1
Actuated g/C Ratio	0.08	0.19	0.24	0.12	0.23	0.23	0.06	0.49		0.38	0.38	0.38
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	257	316	348	192	721	323	88	1560		74	635	539
v/s Ratio Prot	c0.03	0.02	0.00	c0.13	c0.15		0.01	c0.55			0.18	
v/s Ratio Perm			0.01			0.13				0.05		0.01
v/c Ratio	0.30	0.12	0.04	1.09	0.66	0.56	0.09	1.13		0.14	0.48	0.02
Uniform Delay, d1	38.8	30.3	25.9	39.5	31.7	30.8	40.3	22.9		18.3	21.2	17.5
Progression Factor	1.00	1.00	1.00	1.35	1.23	1.52	1.00	1.00		0.65	0.67	1.00
Incremental Delay, d2	0.7	0.2	0.0	87.9	2.0	1.8	0.4	67.8		3.4	2.3	0.1
Delay (s)	39.5	30.4	26.0	141.3	40.9	48.7	40.8	90.7		15.3	16.6	17.6
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.2			64.5			90.5			16.7	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	71.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	47	76	487	0	0	0	0	0	1173	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1665						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1665						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	51	83	529	0	0	0	0	0	1275	228
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	126
Lane Group Flow (vph)	0	0	38	0	612	0	0	0	0	0	1275	102
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.28	
v/s Ratio Perm			0.03		0.37							0.08
v/c Ratio			0.07		0.83						0.63	0.17
Uniform Delay, d1			14.3		22.0						19.2	15.0
Progression Factor			0.44		2.02						1.53	6.55
Incremental Delay, d2			0.2		5.8						1.3	0.5
Delay (s)			6.5		50.1						30.5	98.5
Level of Service			A		D						C	F
Approach Delay (s)		6.5			50.1			0.0			40.8	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	43	475	131	26	211	0	0	289	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1669	1403		3163			3080	
Flt Permitted					1.00	1.00		0.89			1.00	
Satd. Flow (perm)					1669	1403		2841			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	47	516	142	28	229	0	0	314	65
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	0	563	118	0	257	0	0	360	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					32.2	32.2		48.6			48.6	
Effective Green, g (s)					32.2	32.2		48.6			48.6	
Actuated g/C Ratio					0.36	0.36		0.54			0.54	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					597	501		1534			1663	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.34	0.08		0.09				
v/c Ratio					0.94	0.23		0.17			0.22	
Uniform Delay, d1					28.0	20.3		10.5			10.8	
Progression Factor					1.70	2.07		1.00			1.00	
Incremental Delay, d2					21.5	0.9		0.2			0.3	
Delay (s)					69.1	42.8		10.7			11.1	
Level of Service					E	D		B			B	
Approach Delay (s)		0.0			63.8			10.7			11.1	
Approach LOS		A			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	159	459	0	0	0	0	0	1530	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	173	499	0	0	0	0	0	1663	190
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	0	0	173	499	0	0	0	0	0	1663	96
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.30						c0.36	
v/s Ratio Perm				0.12								0.08
v/c Ratio				0.31	0.76						0.72	0.16
Uniform Delay, d1				19.0	23.8						17.4	12.0
Progression Factor				0.51	0.66						1.00	1.00
Incremental Delay, d2				0.7	4.1						2.0	0.6
Delay (s)				10.4	19.8						19.3	12.6
Level of Service				B	B						B	B
Approach Delay (s)		0.0			17.3			0.0			18.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	559	124	133	1072	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	608	135	145	1165	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	30	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	608	105	0	1293	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					655	513		2288				
v/s Ratio Prot					c0.36							
v/s Ratio Perm						0.08		0.28				
v/c Ratio					0.93	0.20		0.56				
Uniform Delay, d1					26.2	18.1		15.5				
Progression Factor					0.92	0.78		1.00				
Incremental Delay, d2					8.4	0.3		1.0				
Delay (s)					32.4	14.4		16.5				
Level of Service					C	B		B				
Approach Delay (s)		0.0			29.2			16.5			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	657	75	20	579	0	0	940	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	0.99	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1656	1277	1575	3185			3185	1277
Flt Permitted					0.99	1.00	0.17	1.00			1.00	1.00
Satd. Flow (perm)					1656	1277	281	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	714	82	22	629	0	0	1022	75
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	811	68	22	629	0	0	1022	47
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					41.0	41.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					41.0	41.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.46	0.46	0.48	0.48			0.48	0.48
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					754	581	134	1521			1521	610
v/s Ratio Prot								0.20			c0.32	
v/s Ratio Perm					0.49	0.05	0.08					0.04
v/c Ratio					1.08	0.12	0.16	0.41			0.67	0.08
Uniform Delay, d1					24.5	14.1	13.3	15.3			18.1	12.7
Progression Factor					1.46	1.80	1.00	1.00			1.66	3.03
Incremental Delay, d2					36.8	0.0	2.6	0.8			1.5	0.2
Delay (s)					72.5	25.4	15.9	16.1			31.6	38.8
Level of Service					E	C	B	B			C	D
Approach Delay (s)		0.0			68.2			16.1			32.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	37	591	53	66	889	0	0	657	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.70	1.00	1.00			0.94	
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.97	
Flt Protected					1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1635	998	1593	3185			1524	
Flt Permitted					1.00	1.00	0.09	1.00			1.00	
Satd. Flow (perm)					1635	998	151	3185			1524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	40	642	58	72	966	0	0	714	198
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	682	23	72	966	0	0	901	0
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					654	399	74	1574			753	
v/s Ratio Prot								0.30			c0.59	
v/s Ratio Perm					0.42	0.02	0.48					
v/c Ratio					1.04	0.06	0.97	0.61			1.20	
Uniform Delay, d1					27.0	16.6	22.2	16.5			22.8	
Progression Factor					0.57	0.22	1.00	1.00			0.90	
Incremental Delay, d2					44.6	0.2	97.3	1.8			97.3	
Delay (s)					59.8	3.8	119.5	18.3			117.8	
Level of Service					E	A	F	B			F	
Approach Delay (s)		0.0			55.4			25.3			117.8	
Approach LOS		A			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	419	97	51	934	0	0	838	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.23	1.00			1.00	
Satd. Flow (perm)					3159	1425	393	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	455	105	55	1015	0	0	911	120
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	547	44	55	1015	0	0	1020	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	266	2158			2121	
v/s Ratio Prot								0.32			c0.33	
v/s Ratio Perm					0.17	0.03	0.14					
v/c Ratio					0.68	0.12	0.21	0.47			0.48	
Uniform Delay, d1					30.2	25.7	5.4	6.9			6.9	
Progression Factor					1.00	1.00	1.00	1.00			1.51	
Incremental Delay, d2					4.5	0.7	1.8	0.7			0.1	
Delay (s)					34.7	26.4	7.2	7.6			10.5	
Level of Service					C	C	A	A			B	
Approach Delay (s)		0.0			33.4			7.6			10.5	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix G
Opening Year (2020) With 7th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	621	502	229	436	53	66	122	66	182	699	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1450	3185	1232	1580	4406		1587	3185	1220	1344	3084	
Flt Permitted	0.44	1.00	1.00	0.26	1.00		0.20	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	678	3185	1232	430	4406		332	3185	1220	945	3084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	675	546	249	474	58	72	133	72	198	760	88
RTOR Reduction (vph)	0	0	182	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	101	675	364	249	510	0	72	133	51	198	836	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Effective Green, g (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1051	406	358	2196		186	1096	573	230	753	
v/s Ratio Prot		0.21		c0.09	0.12		c0.02	0.04	0.01		c0.27	
v/s Ratio Perm	0.15		c0.30	0.26			0.11		0.03	0.21		
v/c Ratio	0.45	0.64	0.90	0.70	0.23		0.39	0.12	0.09	0.86	1.11	
Uniform Delay, d1	18.5	19.9	22.3	11.4	10.0		17.5	15.7	10.3	25.3	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	3.0	25.1	5.8	0.2		1.3	0.2	0.1	32.0	67.3	
Delay (s)	25.0	23.0	47.5	17.2	10.2		18.8	15.9	10.3	57.3	93.7	
Level of Service	C	C	D	B	B		B	B	B	E	F	
Approach Delay (s)		33.2			12.4			15.2			86.9	
Approach LOS		C			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	557	169	229	550	246	23	82	95	151	1171	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1540	3185	1010	3090	3185	1055	1593	3185	1425	1186	3185	1126
Flt Permitted	0.36	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	584	3185	1010	3090	3185	1055	197	3185	1425	869	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	605	184	249	598	267	25	89	103	164	1273	182
RTOR Reduction (vph)	0	0	138	0	0	100	0	0	93	0	0	51
Lane Group Flow (vph)	147	605	46	249	598	167	25	89	10	164	1273	131
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	789	250	330	1226	406	66	1082	142	295	1082	461
v/s Ratio Prot	0.04	c0.19		c0.08	c0.19			0.03	0.01		c0.40	0.02
v/s Ratio Perm	0.14		0.05			0.16	0.13			0.19		0.10
v/c Ratio	0.58	0.77	0.18	0.75	0.49	0.41	0.38	0.08	0.07	0.56	1.18	0.28
Uniform Delay, d1	25.9	34.9	29.6	43.4	23.3	22.5	25.0	22.4	40.8	26.9	33.0	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	7.0	1.6	9.4	0.3	0.7	15.7	0.1	0.2	7.4	89.3	0.3
Delay (s)	29.3	41.9	31.2	52.8	23.6	23.1	40.7	22.6	41.0	34.2	122.3	20.0
Level of Service	C	D	C	D	C	C	D	C	D	C	F	C
Approach Delay (s)		37.9			30.0			33.4			101.9	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	610	177	165	793	232	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2086
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2086
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	663	192	179	862	252	324
RTOR Reduction (vph)	0	116	0	0	0	24
Lane Group Flow (vph)	663	76	179	862	252	300
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.7	27.7	11.7	42.9	17.3	29.0
Effective Green, g (s)	27.7	27.7	11.7	42.9	17.3	29.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1260	467	266	1951	763	864
v/s Ratio Prot	c0.21		c0.11	0.27	0.08	c0.06
v/s Ratio Perm		0.06				0.09
v/c Ratio	0.53	0.16	0.67	0.44	0.33	0.35
Uniform Delay, d1	16.1	13.7	27.4	7.2	21.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.7	6.6	0.7	0.3	0.2
Delay (s)	17.7	14.4	33.9	7.9	21.9	14.3
Level of Service	B	B	C	A	C	B
Approach Delay (s)	17.0			12.4	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	633	115	105	842	85	90	237	26	60	1095	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00		0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1444	3185	1034	1593	3101		1528	3185	885
Flt Permitted	0.13	1.00	1.00	0.36	1.00	1.00	0.95	1.00		0.58	1.00	1.00
Satd. Flow (perm)	222	3185	1053	553	3185	1034	1593	3101		927	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	688	125	114	915	92	98	258	28	65	1190	152
RTOR Reduction (vph)	0	0	78	0	0	64	0	9	0	0	0	86
Lane Group Flow (vph)	72	688	48	114	915	28	98	277	0	65	1190	66
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	167	962	312	159	1316		409	1174	326
v/s Ratio Prot	0.02	c0.22			c0.29		c0.06	0.09		0.01	c0.37	
v/s Ratio Perm	0.17		0.05	0.21		0.03				0.06		0.07
v/c Ratio	0.50	0.57	0.12	0.68	0.95	0.09	0.62	0.21		0.16	1.01	0.20
Uniform Delay, d1	20.8	22.1	18.1	27.6	30.7	22.5	38.8	16.4		16.2	28.4	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	1.9	0.6	20.3	19.4	0.6	6.9	0.1		0.2	29.7	0.3
Delay (s)	23.4	24.0	18.7	47.9	50.1	23.1	45.8	16.5		16.4	58.1	19.7
Level of Service	C	C	B	D	D	C	D	B		B	E	B
Approach Delay (s)		23.2			47.7			23.9			52.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	547	81	55	744	152	31	336	54	56	536	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.89	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1581	3185	1049	1419	3185	1181	1563	4357		1426	2945	
Flt Permitted	0.23	1.00	1.00	0.43	1.00	1.00	0.18	1.00		0.48	1.00	
Satd. Flow (perm)	391	3185	1049	638	3185	1181	299	4357		726	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	595	88	60	809	165	34	365	59	61	583	268
RTOR Reduction (vph)	0	0	18	0	0	87	0	32	0	0	77	0
Lane Group Flow (vph)	121	595	70	60	809	78	34	392	0	61	774	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	1833	603	288	1442	534	93	1369		228	925	
v/s Ratio Prot	c0.03	0.19			c0.25			0.09			c0.26	
v/s Ratio Perm	0.19		0.07	0.09		0.07	0.11			0.08		
v/c Ratio	0.38	0.32	0.12	0.21	0.56	0.15	0.37	0.29		0.27	0.84	
Uniform Delay, d1	8.0	7.7	6.8	11.6	14.0	11.2	18.6	18.1		18.0	22.3	
Progression Factor	1.00	1.00	1.00	1.10	1.16	2.56	1.95	2.19		1.00	1.00	
Incremental Delay, d2	0.8	0.5	0.4	1.3	1.2	0.4	10.5	0.5		2.9	8.9	
Delay (s)	8.7	8.2	7.1	14.1	17.6	29.1	46.8	40.2		20.8	31.2	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		8.2			19.2			40.7			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	492	76	38	620	7	0	0	0	79	1078	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1578	3185	1249	1506	3173						4545	1255
Flt Permitted	0.25	1.00	1.00	0.45	1.00						1.00	1.00
Satd. Flow (perm)	410	3185	1249	718	3173						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	535	83	41	674	8	0	0	0	86	1172	375
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	74	535	62	41	681	0	0	0	0	0	1258	357
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	286	1446	567	233	1033						1785	600
v/s Ratio Prot	0.02	0.17			c0.21							c0.05
v/s Ratio Perm	0.10		0.05	0.06							0.28	0.23
v/c Ratio	0.26	0.37	0.11	0.18	0.66						0.70	0.60
Uniform Delay, d1	11.7	12.5	11.0	16.9	20.3						17.8	13.3
Progression Factor	1.27	1.19	1.48	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	0.7	0.4	1.6	3.3						2.4	1.6
Delay (s)	15.2	15.6	16.6	18.5	23.6						20.2	14.9
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		15.7			23.3			0.0			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	5	15	49	56	79	11	58	6	37	1190	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.91		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2755		1593	2872		1580	3108		1473	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2755		1593	2872		193	3108		1099	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	5	16	53	61	86	12	63	7	40	1293	324
RTOR Reduction (vph)	0	12	0	0	67	0	0	4	0	0	0	84
Lane Group Flow (vph)	29	9	0	53	80	0	12	66	0	40	1293	240
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Effective Green, g (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Actuated g/C Ratio	0.08	0.26		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	704		68	635		94	1527		540	1565	739
v/s Ratio Prot	0.02	0.00		c0.03	c0.03			0.02			c0.41	0.03
v/s Ratio Perm							0.06			0.04		0.16
v/c Ratio	0.24	0.01		0.78	0.13		0.13	0.04		0.07	0.83	0.32
Uniform Delay, d1	30.4	19.5		33.2	21.8		9.7	9.3		9.4	15.2	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.51	1.49		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0		41.9	0.1		2.8	0.1		0.3	5.1	0.3
Delay (s)	31.4	19.5		75.1	21.9		17.3	13.8		9.7	20.4	8.2
Level of Service	C	B		E	C		B	B		A	C	A
Approach Delay (s)		26.4			36.0			14.3			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	426	0	102	29	78	370	52	20	1128	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.98		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.90	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3009		1567	3049		1439	3185	1239
Flt Permitted		1.00	1.00		1.00		0.13	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1676	1326		3009		220	3049		737	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	463	0	111	32	85	402	57	22	1226	135
RTOR Reduction (vph)	0	0	24	0	21	0	0	16	0	0	0	68
Lane Group Flow (vph)	0	432	439	0	122	0	85	443	0	22	1226	67
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Effective Green, g (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Actuated g/C Ratio		0.36	0.36		0.36		0.49	0.49		0.49	0.49	0.49
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		598	473		1074		108	1507		364	1574	612
v/s Ratio Prot		0.26			0.04			0.15			0.38	
v/s Ratio Perm			c0.33				c0.39			0.03		0.05
v/c Ratio		0.72	0.93		0.11		0.79	0.29		0.06	0.78	0.11
Uniform Delay, d1		19.5	21.6		15.1		14.7	10.5		9.2	14.6	9.5
Progression Factor		1.00	1.00		1.53		1.41	1.46		1.00	1.00	1.00
Incremental Delay, d2		7.4	26.9		0.2		36.7	0.4		0.3	3.9	0.4
Delay (s)		26.9	48.6		23.3		57.5	15.7		9.5	18.4	9.8
Level of Service		C	D		C		E	B		A	B	A
Approach Delay (s)		38.1			23.3			22.2			17.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	558	74	0	389	39	53	350	130	0	631	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2882			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	216	2882			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	607	80	0	423	42	58	380	141	0	686	0
RTOR Reduction (vph)	0	0	51	0	0	27	0	14	0	0	0	0
Lane Group Flow (vph)	0	607	29	0	423	15	58	507	0	0	686	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		25.1	25.1		25.1	25.1	34.5	34.5			25.6	
Effective Green, g (s)		25.1	25.1		25.1	25.1	34.5	34.5			25.6	
Actuated g/C Ratio		0.36	0.36		0.36	0.36	0.49	0.49			0.37	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		600	409		600	473	175	1420			590	
v/s Ratio Prot		c0.36			0.25		0.02	c0.18			c0.42	
v/s Ratio Perm			0.03			0.01	0.15					
v/c Ratio		1.01	0.07		0.70	0.03	0.33	0.36			1.16	
Uniform Delay, d1		22.4	14.8		19.3	14.6	25.6	10.9			22.2	
Progression Factor		0.81	2.06		1.02	1.00	1.79	1.51			0.47	
Incremental Delay, d2		37.6	0.3		5.5	0.1	1.0	0.1			86.0	
Delay (s)		55.8	30.8		25.1	14.7	46.9	16.7			96.5	
Level of Service		E	C		C	B	D	B			F	
Approach Delay (s)		52.8			24.2			19.7			96.5	
Approach LOS		D			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	356	312	107	358	0	0	0	0	27	1155	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.93	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1476	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.35	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	542	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	387	339	116	389	0	0	0	0	29	1255	100
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	46
Lane Group Flow (vph)	0	387	324	116	389	0	0	0	0	29	1255	54
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	179	555					721	1706	362
v/s Ratio Prot		0.23			0.23						c0.39	
v/s Ratio Perm			c0.27	0.21						0.02		0.08
v/c Ratio		0.70	0.83	0.65	0.70					0.04	0.74	0.15
Uniform Delay, d1		20.3	21.6	19.9	20.4					7.7	12.5	8.2
Progression Factor		0.84	0.89	1.00	1.00					0.28	0.30	0.00
Incremental Delay, d2		4.0	10.8	16.7	7.2					0.1	2.3	0.7
Delay (s)		21.1	30.1	36.7	27.6					2.2	6.0	0.7
Level of Service		C	C	D	C					A	A	A
Approach Delay (s)		25.3			29.7			0.0			5.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	23	56	19	60	1127	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.96	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1530	3185	3185	993
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	290	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	61	21	65	1225	183
RTOR Reduction (vph)	0	7	0	0	0	45
Lane Group Flow (vph)	25	54	21	65	1225	138
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	182	2006	2006	625
v/s Ratio Prot				0.02	c0.38	
v/s Ratio Perm	0.02	c0.03	0.07			0.14
v/c Ratio	0.07	0.11	0.12	0.03	0.61	0.22
Uniform Delay, d1	21.0	21.2	5.2	4.9	7.8	5.6
Progression Factor	1.00	1.00	1.00	1.00	0.15	0.00
Incremental Delay, d2	0.1	0.1	1.3	0.0	0.9	0.5
Delay (s)	21.1	21.3	6.5	4.9	2.0	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.3	1.9	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1414	172	58	456	0	0	1104	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3109		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3109		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1537	187	63	496	0	0	1200	229
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	107	1711	0	63	496	0	0	1200	223
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.55			0.16			c0.38	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.15	1.13		0.66	0.36			0.88	0.43
Uniform Delay, d1				10.0	18.0		15.9	13.5			18.3	14.0
Progression Factor				2.01	1.84		0.96	0.89			0.97	0.88
Incremental Delay, d2				0.0	60.7		27.7	0.7			4.8	1.4
Delay (s)				20.1	93.8		43.0	12.7			22.6	13.6
Level of Service				C	F		D	B			C	B
Approach Delay (s)		0.0			89.5			16.1			21.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	15	1608	58	80	438	0	0	317	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3141			1616	1254
Flt Permitted				0.95	1.00	1.00		0.84			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2660			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	1748	63	87	476	0	0	345	309
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	84
Lane Group Flow (vph)	0	0	0	16	1748	25	0	563	0	0	345	225
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1235			750	582
v/s Ratio Prot					c0.55						c0.21	
v/s Ratio Perm				0.01		0.02		0.21				0.18
v/c Ratio				0.03	1.36	0.05		0.46			0.46	0.39
Uniform Delay, d1				12.6	20.9	12.7		12.7			12.8	12.2
Progression Factor				1.91	1.74	6.21		0.76			0.24	0.19
Incremental Delay, d2				0.0	165.3	0.1		0.2			0.2	0.2
Delay (s)				24.1	201.7	79.1		9.9			3.3	2.5
Level of Service				C	F	E		A			A	A
Approach Delay (s)		0.0			195.9			9.9			2.9	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	120.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	439	1353	0	0	0	0	0	1075	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	477	1471	0	0	0	0	0	1168	183
RTOR Reduction (vph)	0	0	0	16	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	461	1471	0	0	0	0	0	1168	167
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.46						c0.26	
v/s Ratio Perm				0.32								0.14
v/c Ratio				0.74	1.07						0.59	0.31
Uniform Delay, d1				16.6	19.9						15.1	13.0
Progression Factor				1.00	1.00						0.81	0.88
Incremental Delay, d2				7.7	45.6						0.8	1.0
Delay (s)				24.3	65.5						13.1	12.4
Level of Service				C	E						B	B
Approach Delay (s)		0.0			55.4			0.0			13.0	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	574	1293	0	0	39	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	624	1405	0	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	624	1405	0	0	42	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.21				
v/s Ratio Perm					c0.01	
v/c Ratio	0.36	0.24			0.23	
Uniform Delay, d1	8.2	1.0			31.4	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.6	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.5	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	879	168	0	0	0	0	690	101	56	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4449		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4449		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	955	183	0	0	0	0	750	110	61	230	0
RTOR Reduction (vph)	0	0	111	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	235	955	72	0	0	0	0	835	0	61	230	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1588		158	780	
v/s Ratio Prot		0.17						c0.19		0.02	c0.14	
v/s Ratio Perm	c0.21		0.05									
v/c Ratio	0.54	0.42	0.14					0.53		0.39	0.29	
Uniform Delay, d1	16.4	15.5	13.6					17.8		32.1	11.6	
Progression Factor	1.23	1.16	2.15					1.10		1.00	1.00	
Incremental Delay, d2	4.7	0.6	0.6					1.1		1.6	1.0	
Delay (s)	24.8	18.5	29.9					20.6		33.7	12.5	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		21.1			0.0			20.6			17.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	762	138	0	0	0	0	481	72	147	1066	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.94	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5470						3052		1490	3185	
Flt Permitted		0.99						1.00		0.37	1.00	
Satd. Flow (perm)		5470						3052		574	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	828	150	0	0	0	0	523	78	160	1159	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	1110	0	0	0	0	0	584	0	160	1159	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1351		254	1410	
v/s Ratio Prot								0.19			c0.36	
v/s Ratio Perm		0.20								0.28		
v/c Ratio		0.46						0.43		0.63	0.82	
Uniform Delay, d1		13.6						13.4		15.1	17.1	
Progression Factor		1.16						1.64		0.92	0.98	
Incremental Delay, d2		0.6						1.0		6.5	3.2	
Delay (s)		16.3						23.0		20.3	19.9	
Level of Service		B						C		C	B	
Approach Delay (s)		16.3			0.0			23.0			19.9	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	811	73	0	0	0	0	443	90	0	408	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5408						2938			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5408						2938			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	882	79	0	0	0	0	482	98	0	443	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	1033	0	0	0	0	0	555	0	0	443	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2704						1036			570	
v/s Ratio Prot								0.19			c0.27	
v/s Ratio Perm		0.19										
v/c Ratio		0.38						0.54			0.78	
Uniform Delay, d1		10.8						18.1			20.2	
Progression Factor		1.81						1.21			0.95	
Incremental Delay, d2		0.4						1.6			9.6	
Delay (s)		20.0						23.5			28.7	
Level of Service		B						C			C	
Approach Delay (s)		20.0			0.0			23.5			28.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	661	164	0	0	0	0	0	0	121	1215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5397									4509	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5397									4509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	718	178	0	0	0	0	0	0	132	1321	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	893	0	0	0	0	0	0	0	0	1435	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.17										
v/s Ratio Perm											0.32	
v/c Ratio		0.33									0.87	
Uniform Delay, d1		10.4									20.8	
Progression Factor		1.63									0.89	
Incremental Delay, d2		0.3									5.4	
Delay (s)		17.2									23.7	
Level of Service		B									C	
Approach Delay (s)		17.2			0.0			0.0			23.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	372	1195	205	0	0	0	0	772	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	404	1299	223	0	0	0	0	839	201
RTOR Reduction (vph)	0	0	0	46	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	269	1556	0	0	0	0	0	839	183
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.30	0.28							c0.19
v/c Ratio				0.70	0.64						0.43	0.44
Uniform Delay, d1				16.3	15.8						14.0	14.1
Progression Factor				1.00	0.91						1.00	1.00
Incremental Delay, d2				7.1	0.9						0.7	3.4
Delay (s)				23.4	15.3						14.7	17.5
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.6			0.0			15.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1253	109	361	787	0	0	0	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5534		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5534		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1362	118	392	855	0	0	0	209
RTOR Reduction (vph)	0	0	0	0	20	0	290	0	0	0	0	193
Lane Group Flow (vph)	0	0	0	0	1460	0	102	855	0	0	0	16
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.19				
v/s Ratio Perm												c0.01
v/c Ratio					0.98		0.13	0.39				0.08
Uniform Delay, d1					25.3		19.8	11.6				29.9
Progression Factor					1.57		1.53	1.06				1.00
Incremental Delay, d2					16.0		0.3	0.4				0.2
Delay (s)					55.8		30.7	12.7				30.1
Level of Service					E		C	B				C
Approach Delay (s)		0.0			55.8			18.4			30.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	1257	88	58	411	0	0	960	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5586		1518	3185			3185	960
Flt Permitted				0.95	1.00		0.17	1.00			1.00	1.00
Satd. Flow (perm)				1004	5586		267	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	1366	96	63	447	0	0	1043	250
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	90	1447	0	63	447	0	0	1043	233
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2314		119	1419			1419	427
v/s Ratio Prot					c0.26			0.14			c0.33	
v/s Ratio Perm				0.09			0.24					0.24
v/c Ratio				0.22	0.63		0.53	0.32			0.74	0.55
Uniform Delay, d1				13.2	16.2		14.1	12.5			16.0	14.2
Progression Factor				0.27	0.37		1.00	0.86			0.48	0.32
Incremental Delay, d2				1.0	1.1		15.7	0.6			2.1	3.0
Delay (s)				4.6	7.0		29.7	11.3			9.8	7.5
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.9			13.6			9.4	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	22	1245	69	42	634	0	0	315	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5570			3175			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5570			2907			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	24	1353	75	46	689	0	0	342	103
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1441	0	0	735	0	0	342	86
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1266			704	429
v/s Ratio Prot											0.21	
v/s Ratio Perm					0.26			c0.25				0.09
v/c Ratio					0.60			0.58			0.49	0.20
Uniform Delay, d1					15.4			14.9			14.1	12.2
Progression Factor					0.69			0.47			0.38	0.22
Incremental Delay, d2					1.1			1.8			1.6	0.7
Delay (s)					11.7			8.7			7.0	3.4
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.7			8.7			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	804	0	0	0	0	0	1291	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	874	0	0	0	0	0	1403	335
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	0	0	0	978	0	0	0	0	0	1403	293
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.31	
v/s Ratio Perm					0.17							0.21
v/c Ratio					0.39						0.70	0.47
Uniform Delay, d1					13.6						16.1	14.0
Progression Factor					1.00						1.10	1.08
Incremental Delay, d2					0.5						1.5	1.8
Delay (s)					14.0						19.2	17.0
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1263	237	0	0	0	0	0	0	129	1133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1373	258	0	0	0	0	0	0	140	1232	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1373	244	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.24										
v/s Ratio Perm			c0.24								0.24	
v/c Ratio		0.55	0.56								0.56	
Uniform Delay, d1		14.8	14.9								14.8	
Progression Factor		1.00	1.00								1.64	
Incremental Delay, d2		0.9	5.2								0.8	
Delay (s)		15.7	20.1								25.0	
Level of Service		B	C								C	
Approach Delay (s)		16.4			0.0			0.0			25.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	409	989	0	0	0	0	0	1156	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6365				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6365				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	1075	0	0	0	0	0	1257	197	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	279	1211	0	0	0	0	0	1432	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2755				
v/s Ratio Prot								c0.23				
v/s Ratio Perm	c0.30	0.23										
v/c Ratio	0.70	0.54						0.52				
Uniform Delay, d1	16.2	14.7						14.5				
Progression Factor	0.25	0.21						1.96				
Incremental Delay, d2	8.2	0.8						0.6				
Delay (s)	12.3	3.8						29.0				
Level of Service	B	A						C				
Approach Delay (s)		5.5			0.0			29.0			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	182	0	0	0	0	342	91	145	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5594						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.50	1.00	
Satd. Flow (perm)		5594						3185	1425	844	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	198	0	0	0	0	372	99	158	939	0
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	951	0	0	0	0	0	372	45	158	939	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	385	2092	
v/s Ratio Prot		c0.17						0.12			c0.21	
v/s Ratio Perm									0.03	0.19		
v/c Ratio		0.37						0.26	0.07	0.41	0.45	
Uniform Delay, d1		12.4						11.7	10.7	12.7	13.0	
Progression Factor		0.50						0.46	0.25	0.82	0.83	
Incremental Delay, d2		0.4						0.4	0.2	2.3	0.5	
Delay (s)		6.6						5.8	2.9	12.6	11.3	
Level of Service		A						A	A	B	B	
Approach Delay (s)		6.6			0.0			5.1			11.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	800	61	0	0	0	0	601	62	0	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5501						3107			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5501						3107			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	870	66	0	0	0	0	653	67	0	361	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	998	0	0	0	0	0	716	0	0	361	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1964						1540			801	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.18										
v/c Ratio		0.51						0.46			0.45	
Uniform Delay, d1		17.7						11.6			11.5	
Progression Factor		0.44						1.85			2.33	
Incremental Delay, d2		0.9						0.8			1.6	
Delay (s)		8.6						22.2			28.3	
Level of Service		A						C			C	
Approach Delay (s)		8.6			0.0			22.2			28.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	792	73	0	0	0	0	0	0	97	1179	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4560	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4560	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	861	79	0	0	0	0	0	0	105	1282	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	929	0	0	0	0	0	0	0	0	1372	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.38									0.69	
Uniform Delay, d1		13.5									15.9	
Progression Factor		0.17									0.71	
Incremental Delay, d2		0.4									1.5	
Delay (s)		2.7									12.8	
Level of Service		A									B	
Approach Delay (s)		2.7			0.0			0.0			12.8	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	253	0	0	399	115	323	1313	133	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	275	0	0	434	125	351	1427	145	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	114	0	0	0
Lane Group Flow (vph)	98	275	0	0	434	6	351	1427	31	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Effective Green, g (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.62			0.50	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	225	1089			1786	62	342	984	295			
v/s Ratio Prot	c0.03	c0.01			0.01	0.00		c0.31				
v/s Ratio Perm		0.16			0.13		0.22		0.02			
v/c Ratio	0.44	0.25			0.24	0.09	1.03	1.45	0.11			
Uniform Delay, d1	44.4	8.6			14.0	45.9	39.2	39.2	31.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.4	0.1			0.1	0.6	55.6	208.3	0.7			
Delay (s)	45.7	8.8			14.0	46.5	94.8	247.6	32.2			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.5			21.3			203.5			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	143.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	263	172	86	396	0	0	0	0	159	904	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.97						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3053						5095	
Flt Permitted		1.00	1.00		0.82						0.99	
Satd. Flow (perm)		1676	971		2535						5095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	286	187	93	430	0	0	0	0	173	983	108
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	286	175	0	523	0	0	0	0	0	1247	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1185						2162	
v/s Ratio Prot		0.17										
v/s Ratio Perm			0.18		c0.21						0.24	
v/c Ratio		0.37	0.39		0.44						0.58	
Uniform Delay, d1		15.4	15.6		16.1						19.7	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.3	2.5		1.2						1.1	
Delay (s)		16.7	18.0		17.3						20.9	
Level of Service		B	B		B						C	
Approach Delay (s)		17.2			17.3			0.0			20.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	292	53	0	457	95	55	358	65	26	220	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2805			2973	
Flt Permitted		1.00	1.00		1.00	1.00		0.89			0.89	
Satd. Flow (perm)		1616	949		3185	775		2500			2670	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	317	58	0	497	103	60	389	71	28	239	26
RTOR Reduction (vph)	0	0	30	0	0	19	0	18	0	0	1	0
Lane Group Flow (vph)	0	317	28	0	497	84	0	502	0	0	292	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1071			1144	
v/s Ratio Prot		c0.20			0.16							
v/s Ratio Perm			0.03			0.11		c0.20			0.11	
v/c Ratio		0.40	0.06		0.32	0.22		0.47			0.26	
Uniform Delay, d1		11.5	9.5		11.0	10.4		14.3			12.8	
Progression Factor		1.00	1.00		0.14	0.04		1.35			1.00	
Incremental Delay, d2		1.5	0.3		0.4	1.1		1.3			0.5	
Delay (s)		13.1	9.8		1.9	1.5		20.6			13.4	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		12.6			1.8			20.6			13.4	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	302	92	50	467	0	0	0	0	123	803	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.49	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	820	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	328	100	54	508	0	0	0	0	134	873	84
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	328	83	54	508	0	0	0	0	134	873	47
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	351	718					513	1369	445
v/s Ratio Prot		0.20			c0.30						c0.27	
v/s Ratio Perm			0.09	0.07						0.11		0.05
v/c Ratio		0.46	0.20	0.15	0.71					0.26	0.64	0.11
Uniform Delay, d1		14.2	12.5	12.2	16.4					12.8	15.7	11.9
Progression Factor		0.83	0.87	1.65	1.65					0.88	0.70	1.04
Incremental Delay, d2		2.0	1.1	0.7	4.6					1.0	1.9	0.4
Delay (s)		13.7	12.0	21.0	31.7					12.3	12.9	12.8
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		13.3			30.7			0.0			12.9	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	469	0	0	410	177	77	1183	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5468				
Flt Permitted	0.33	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	556	1676			1676	976		5468				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	510	0	0	446	192	84	1286	75	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	11	0	0	0	0
Lane Group Flow (vph)	34	510	0	0	446	175	0	1434	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	27.3	27.3			27.3	27.3		33.2				
Effective Green, g (s)	27.3	27.3			27.3	27.3		33.2				
Actuated g/C Ratio	0.39	0.39			0.39	0.39		0.47				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	216	653			653	380		2593				
v/s Ratio Prot		c0.30			0.27							
v/s Ratio Perm	0.06					0.18		0.26				
v/c Ratio	0.16	0.78			0.68	0.46		0.55				
Uniform Delay, d1	13.9	18.7			17.8	15.9		13.1				
Progression Factor	0.68	0.73			1.34	1.47		0.81				
Incremental Delay, d2	1.5	8.6			0.5	0.4		0.7				
Delay (s)	10.9	22.3			24.3	23.7		11.3				
Level of Service	B	C			C	C		B				
Approach Delay (s)		21.6			24.1			11.3			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	276	51	22	492	46	0	388	57	0	856	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2912			2950	
Flt Permitted	0.95	1.00	1.00	0.58	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	929	967	1676	961		2912			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	300	55	24	535	50	0	422	62	0	930	137
RTOR Reduction (vph)	0	0	5	0	0	34	0	17	0	0	17	0
Lane Group Flow (vph)	65	300	50	24	535	16	0	467	0	0	1050	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Effective Green, g (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Actuated g/C Ratio	0.19	0.51	0.51	0.29	0.29	0.29		0.40			0.40	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	295	861	477	276	478	274		1164			1180	
v/s Ratio Prot	0.04	c0.18			c0.32			0.16			c0.36	
v/s Ratio Perm			0.05	0.02		0.02						
v/c Ratio	0.22	0.35	0.10	0.09	1.12	0.06		0.40			0.89	
Uniform Delay, d1	24.2	10.1	8.7	18.3	25.0	18.2		15.0			19.6	
Progression Factor	1.48	0.85	1.07	1.24	1.24	2.00		1.78			1.78	
Incremental Delay, d2	1.1	0.7	0.3	0.5	74.5	0.3		1.0			9.5	
Delay (s)	37.0	9.3	9.6	23.1	105.6	36.8		27.7			44.4	
Level of Service	D	A	A	C	F	D		C			D	
Approach Delay (s)		13.6			96.7			27.7			44.4	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	268	28	11	453	23	8	642	51	0	431	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3032			1616	
Flt Permitted	0.31	1.00	1.00	0.52	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	519	1676	621	875	1676	964		2879			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	291	30	12	492	25	9	698	55	0	468	0
RTOR Reduction (vph)	0	0	17	0	0	15	0	8	0	0	0	0
Lane Group Flow (vph)	18	291	13	12	492	10	0	754	0	0	468	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	215	696	269	363	696	400		1250			701	
v/s Ratio Prot		0.17			c0.29						c0.29	
v/s Ratio Perm	0.03		0.02	0.01		0.01		0.26				
v/c Ratio	0.08	0.42	0.05	0.03	0.71	0.03		0.60			0.67	
Uniform Delay, d1	12.4	14.5	11.4	12.1	16.9	12.1		15.2			15.8	
Progression Factor	0.87	0.86	1.84	1.61	1.28	3.20		0.37			0.80	
Incremental Delay, d2	0.7	1.8	0.3	0.1	5.2	0.1		1.8			4.6	
Delay (s)	11.4	14.2	21.4	19.7	26.8	38.7		7.4			17.2	
Level of Service	B	B	C	B	C	D		A			B	
Approach Delay (s)		14.7			27.2			7.4			17.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	266	71	64	393	0	0	0	0	46	975	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1276	1676						4501	987
Flt Permitted		1.00	1.00	0.54	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	727	1676						4501	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	77	70	427	0	0	0	0	50	1060	135
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	289	51	70	427	0	0	0	0	0	1110	56
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	304	701						1877	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.10							0.25	0.06
v/c Ratio		0.41	0.13	0.23	0.61						0.59	0.14
Uniform Delay, d1		14.3	12.5	13.1	15.9						15.8	12.6
Progression Factor		0.39	0.10	1.00	1.00						0.18	0.07
Incremental Delay, d2		1.7	0.6	1.8	3.9						1.0	0.5
Delay (s)		7.2	1.8	14.9	19.8						3.9	1.4
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.1			19.1			0.0			3.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1571	154	322	1659	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1106	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1106	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1708	167	350	1803	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	74	118	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1708	93	232	1803	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					33.7	33.7	34.0	34.0				
Effective Green, g (s)					33.7	33.7	34.0	34.0				
Actuated g/C Ratio					0.37	0.37	0.38	0.38				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2159	424	417	1729				
v/s Ratio Prot					c0.30			c0.39				
v/s Ratio Perm						0.08	0.21					
v/c Ratio					0.79	0.22	0.56	1.04				
Uniform Delay, d1					25.0	19.2	22.1	28.0				
Progression Factor					1.00	1.00	0.57	0.78				
Incremental Delay, d2					3.1	1.2	0.5	21.3				
Delay (s)					28.1	20.4	13.1	43.1				
Level of Service					C	C	B	D				
Approach Delay (s)		0.0			27.4			38.3			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	1049	66	58	437	0	0	687	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1505	3185			3185	1154
Flt Permitted				0.95	1.00		0.32	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		505	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	1140	72	63	475	0	0	747	168
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	97	1202	0	63	475	0	0	747	166
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		288	1820			1820	659
v/s Ratio Prot					c0.27			0.15			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.21	0.78		0.22	0.26			0.41	0.25
Uniform Delay, d1				16.3	20.6		7.3	7.6			8.4	7.5
Progression Factor				0.38	0.33		0.21	0.23			0.10	0.09
Incremental Delay, d2				0.8	3.1		1.6	0.3			0.4	0.5
Delay (s)				6.9	10.0		3.2	2.1			1.2	1.1
Level of Service				A	A		A	A			A	A
Approach Delay (s)		0.0			9.7			2.2			1.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	28	1033	43	89	669	0	0	328	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5691			3167			1616	1144
Flt Permitted					1.00			0.84			1.00	1.00
Satd. Flow (perm)					5691			2669			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	30	1123	47	97	727	0	0	357	172
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	0	0	0	1192	0	0	824	0	0	357	93
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1788			1485			593	420
v/s Ratio Prot								c0.05			0.22	
v/s Ratio Perm					0.21			c0.25				0.08
v/c Ratio					0.67			0.55			0.60	0.22
Uniform Delay, d1					20.8			10.6			18.0	15.3
Progression Factor					0.77			1.23			1.17	2.21
Incremental Delay, d2					1.8			1.2			3.6	1.0
Delay (s)					17.8			14.2			24.6	34.7
Level of Service					B			B			C	C
Approach Delay (s)		0.0			17.8			14.2			27.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	748	0	0	0	0	0	745	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5638						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5638						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	813	0	0	0	0	0	810	329
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	0	876	0	0	0	0	0	810	294
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.18	
v/s Ratio Perm					0.16							c0.22
v/c Ratio					0.40						0.37	0.47
Uniform Delay, d1					15.4						11.6	12.2
Progression Factor					1.00						0.29	0.20
Incremental Delay, d2					0.5						0.4	2.1
Delay (s)					16.0						3.8	4.5
Level of Service					B						A	A
Approach Delay (s)		0.0			16.0			0.0			4.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	515	1404	0	0	0	0	0	2142	164	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	1526	0	0	0	0	0	2328	178	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	385	1665	0	0	0	0	0	2328	165	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1681						1797	578			
v/s Ratio Prot								c0.73				
v/s Ratio Perm	c0.39	0.31							0.16			
v/c Ratio	1.21	0.99						1.30	0.29			
Uniform Delay, d1	30.7	30.6						19.6	10.2			
Progression Factor	1.00	1.00						1.56	1.61			
Incremental Delay, d2	121.5	19.8						134.5	0.4			
Delay (s)	152.2	50.3						165.2	16.8			
Level of Service	F	D						F	B			
Approach Delay (s)		70.0			0.0			154.6			0.0	
Approach LOS		E			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	116.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1565	195	0	0	0	0	0	0	188	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5671								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5671								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1701	212	0	0	0	0	0	0	204	722	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1889	0	0	0	0	0	0	0	192	722	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2205								785	2845	
v/s Ratio Prot		c0.33									c0.13	
v/s Ratio Perm										0.12		
v/c Ratio		0.86								0.24	0.25	
Uniform Delay, d1		25.2								13.1	13.2	
Progression Factor		1.56								0.55	0.60	
Incremental Delay, d2		2.6								0.6	0.2	
Delay (s)		41.9								7.9	8.1	
Level of Service		D								A	A	
Approach Delay (s)		41.9			0.0			0.0			8.0	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1103	59	0	0	0	0	427	94	56	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5497						2944			3083	
Flt Permitted		0.99						1.00			0.79	
Satd. Flow (perm)		5497						2944			2475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	1199	64	0	0	0	0	464	102	61	228	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1429	0	0	0	0	0	554	0	0	289	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2669						1261			1060	
v/s Ratio Prot								c0.19				
v/s Ratio Perm		0.26									0.12	
v/c Ratio		0.54						0.44			0.27	
Uniform Delay, d1		12.5						14.1			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.8						1.1			0.6	
Delay (s)		13.3						15.2			19.9	
Level of Service		B						B			B	
Approach Delay (s)		13.3			0.0			15.2			19.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱							↰	↑↑↑	
Volume (vph)	0	1358	240	0	0	0	0	0	0	183	937	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1476	261	0	0	0	0	0	0	199	1018	0
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1476	238	0	0	0	0	0	0	177	1018	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.32									c0.22	
v/s Ratio Perm			0.19							0.12		
v/c Ratio		0.74	0.43							0.28	0.53	
Uniform Delay, d1		16.4	13.6							13.5	15.3	
Progression Factor		1.30	1.33							0.29	0.40	
Incremental Delay, d2		2.3	2.2							1.0	1.0	
Delay (s)		23.6	20.4							4.9	7.0	
Level of Service		C	C							A	A	
Approach Delay (s)		23.1			0.0			0.0			6.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	264	1257	0	0	0	0	0	1195	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4471						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4471						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	1366	0	0	0	0	0	1299	101	0	0	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1631	0	0	0	0	0	1299	86	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1603						2308	678			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.36							0.06			
v/c Ratio		1.02						0.56	0.13			
Uniform Delay, d1		22.4						12.0	9.2			
Progression Factor		0.38						1.79	2.14			
Incremental Delay, d2		23.6						0.5	0.2			
Delay (s)		32.1						21.9	19.9			
Level of Service		C						C	B			
Approach Delay (s)		32.1			0.0			21.8			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	1145	53	0	0	0	0	497	72	162	447	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4460						3055		1593	3185	
Flt Permitted		1.00						1.00		0.36	1.00	
Satd. Flow (perm)		4460						3055		599	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	1245	58	0	0	0	0	540	78	176	486	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1354	0	0	0	0	0	615	0	176	486	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1911						1483		290	1547	
v/s Ratio Prot								0.20			0.15	
v/s Ratio Perm		0.30								c0.29		
v/c Ratio		0.71						0.41		0.61	0.31	
Uniform Delay, d1		16.4						11.6		13.1	10.9	
Progression Factor		1.61						1.81		1.86	2.00	
Incremental Delay, d2		0.7						0.8		8.6	0.5	
Delay (s)		27.1						21.8		33.0	22.3	
Level of Service		C						C		C	C	
Approach Delay (s)		27.1			0.0			21.8			25.2	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1288	67	0	0	0	0	706	95	0	349	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4426						3056			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4426						3056			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1400	73	0	0	0	0	767	103	0	379	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	65	1465	0	0	0	0	0	869	0	0	379	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1846						1331			704	
v/s Ratio Prot		c0.33						c0.28			0.23	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.79						0.65			0.54	
Uniform Delay, d1	12.5	17.8						15.6			14.6	
Progression Factor	0.36	0.28						0.36			0.39	
Incremental Delay, d2	0.4	2.7						1.7			2.3	
Delay (s)	4.9	7.7						7.3			8.0	
Level of Service	A	A						A			A	
Approach Delay (s)		7.6			0.0			7.3			8.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	990	75	0	0	0	0	793	94	112	701	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1552	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.26	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	432	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1076	82	0	0	0	0	862	102	122	762	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	117	1146	0	0	0	0	0	862	85	122	762	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	216	1597	
v/s Ratio Prot		c0.26						0.27			0.24	
v/s Ratio Perm	0.08								0.07	c0.28		
v/c Ratio	0.23	0.72						0.54	0.13	0.56	0.48	
Uniform Delay, d1	15.9	19.6						11.9	9.3	12.1	11.4	
Progression Factor	0.93	1.05						0.27	0.07	1.00	1.00	
Incremental Delay, d2	0.6	1.7						0.9	0.3	10.3	1.0	
Delay (s)	15.4	22.4						4.0	0.9	22.4	12.5	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		21.8			0.0			3.7			13.8	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	1165	106	65	1039	180	234	1722	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1350	1570	4577	1177	1449	3185	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	381	4577	1350	486	4577	1177	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	1266	115	71	1129	196	254	1872	187	0	0	0
RTOR Reduction (vph)	0	0	45	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	247	1266	70	71	1129	83	254	1872	152	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1251	816	73	691	177	859	1889	798			
v/s Ratio Prot	c0.10	0.28	0.03		c0.25		0.10	c0.59				
v/s Ratio Perm	0.24		0.02	0.15		0.07	0.08		0.11			
v/c Ratio	1.25	1.01	0.09	0.97	1.63	0.47	0.30	0.99	0.19			
Uniform Delay, d1	31.0	32.7	7.4	38.0	38.2	34.9	9.0	18.1	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.71	1.49	2.12			
Incremental Delay, d2	146.3	28.4	0.0	97.9	291.8	8.7	0.0	4.5	0.0			
Delay (s)	177.3	61.1	7.5	135.9	330.0	43.6	15.5	31.3	17.8			
Level of Service	F	E	A	F	F	D	B	C	B			
Approach Delay (s)		75.0			279.9			28.5			0.0	
Approach LOS		E			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	108.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	103	44	1003	0	0	0	0	80	489	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5727	1425
Flt Permitted		1.00	1.00	0.16	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	270	3185						5727	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	112	48	1090	0	0	0	0	87	532	124
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	1039	48	48	1090	0	0	0	0	0	619	104
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	115	1365						2429	604
v/s Ratio Prot		0.33			c0.34							
v/s Ratio Perm			0.03	0.18							0.11	0.07
v/c Ratio		0.76	0.08	0.42	0.80						0.25	0.17
Uniform Delay, d1		17.0	11.8	13.9	17.4						13.0	12.5
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		4.1	0.3	10.8	5.0						0.3	0.6
Delay (s)		21.0	12.1	24.7	22.3						13.3	13.1
Level of Service		C	B	C	C						B	B
Approach Delay (s)		20.1			22.4			0.0			13.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	1028	60	18	879	76	81	353	39	31	150	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3065			3026			2811	
Flt Permitted	0.18	1.00		0.14	1.00			0.82			0.86	
Satd. Flow (perm)	307	3129		229	3065			2517			2427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	1117	65	20	955	83	88	384	42	34	163	99
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	17	0
Lane Group Flow (vph)	162	1178	0	20	1032	0	0	507	0	0	279	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	154	1570		114	1538			1011			975	
v/s Ratio Prot		0.38			0.34							
v/s Ratio Perm	c0.53			0.09				c0.20			0.11	
v/c Ratio	1.05	0.75		0.18	0.67			0.50			0.29	
Uniform Delay, d1	24.9	19.9		13.6	18.7			22.4			20.2	
Progression Factor	1.00	1.00		0.56	0.47			1.00			1.00	
Incremental Delay, d2	87.0	3.3		2.9	2.0			1.8			0.7	
Delay (s)	111.9	23.2		10.5	10.9			24.2			20.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		33.9			10.9			24.2			20.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	768	100	60	782	0	0	0	0	205	731	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.20	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		328	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	835	109	65	850	0	0	0	0	223	795	163
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	934	0	65	850	0	0	0	0	223	795	114
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		147	1433					716	2059	641
v/s Ratio Prot		c0.30			0.27						c0.17	
v/s Ratio Perm				0.20						0.14		0.08
v/c Ratio		0.66		0.44	0.59					0.31	0.39	0.18
Uniform Delay, d1		21.6		18.9	20.6					17.6	18.3	16.4
Progression Factor		0.32		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.7		9.4	1.8					1.1	0.5	0.6
Delay (s)		8.6		28.2	22.4					18.7	18.9	17.0
Level of Service		A		C	C					B	B	B
Approach Delay (s)		8.6			22.9			0.0			18.6	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	929	0	0	715	106	102	1366	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.23	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	394	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1010	0	0	777	115	111	1485	84	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	34	0	0	0
Lane Group Flow (vph)	161	1010	0	0	889	0	0	1596	50	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	180	1460			1432			1824	570			
v/s Ratio Prot		0.32			0.28							
v/s Ratio Perm	c0.41							0.35	0.03			
v/c Ratio	0.89	0.69			0.62			0.88	0.09			
Uniform Delay, d1	17.4	15.0			14.3			19.4	13.1			
Progression Factor	1.00	1.00			0.66			0.59	0.85			
Incremental Delay, d2	44.0	2.7			1.8			4.3	0.2			
Delay (s)	61.4	17.7			11.3			15.7	11.3			
Level of Service	E	B			B			B	B			
Approach Delay (s)		23.7			11.3			15.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	805	53	62	677	87	46	396	33	48	500	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.26	1.00		0.21	1.00		0.38	1.00		0.43	1.00	1.00
Satd. Flow (perm)	429	3156		357	3131		639	3148		722	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	875	58	67	736	95	50	430	36	52	543	87
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	50
Lane Group Flow (vph)	80	926	0	67	817	0	50	457	0	52	543	37
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	205	1510		170	1498		273	1349		309	1365	610
v/s Ratio Prot		c0.29			0.26			0.15			c0.17	
v/s Ratio Perm	0.19			0.19			0.08			0.07		0.03
v/c Ratio	0.39	0.61		0.39	0.55		0.18	0.34		0.17	0.40	0.06
Uniform Delay, d1	11.7	13.5		11.7	12.9		12.4	13.4		12.3	13.8	11.7
Progression Factor	1.81	1.75		1.12	1.17		1.49	1.52		0.55	0.65	0.27
Incremental Delay, d2	4.2	1.4		5.6	1.2		1.5	0.7		1.1	0.8	0.2
Delay (s)	25.4	25.0		18.6	16.2		19.9	21.0		7.9	9.8	3.3
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		25.0			16.4			20.9			8.8	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	827	45	67	698	57	65	728	73	0	401	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1558	3137		1556	3125			3162	1330		1616	
Flt Permitted	0.26	1.00		0.20	1.00			0.83	1.00		1.00	
Satd. Flow (perm)	418	3137		324	3125			2648	1330		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	899	49	73	759	62	71	791	79	0	436	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	24	0	0	0
Lane Group Flow (vph)	51	942	0	73	812	0	0	862	55	0	436	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1344		138	1339			1134	570		692	
v/s Ratio Prot		c0.30			0.26						0.27	
v/s Ratio Perm	0.12			0.23				c0.33	0.04			
v/c Ratio	0.28	0.70		0.53	0.61			0.76	0.10		0.63	
Uniform Delay, d1	13.0	16.3		14.8	15.4			17.0	11.9		15.7	
Progression Factor	1.53	1.55		1.41	1.49			0.47	0.33		1.55	
Incremental Delay, d2	3.3	2.6		13.0	1.9			4.0	0.3		3.6	
Delay (s)	23.2	27.9		33.9	25.0			12.0	4.2		27.8	
Level of Service	C	C		C	C			B	A		C	
Approach Delay (s)		27.7			25.7			11.3			27.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	674	76	26	424	43	66	792	81	94	586	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3137		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.15	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1593	3137		577	3141		248	3185	1425	358	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	733	83	28	461	47	72	861	88	102	637	203
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	54	0	0	125
Lane Group Flow (vph)	128	804	0	28	497	0	72	861	34	102	637	78
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1465		195	1063		95	1228	549	138	646	549
v/s Ratio Prot	c0.08	c0.26			0.16			0.27			c0.38	
v/s Ratio Perm				0.05			0.29		0.02	0.28		0.05
v/c Ratio	1.02	0.55		0.14	0.47		0.76	0.70	0.06	0.74	0.99	0.14
Uniform Delay, d1	32.2	13.4		16.1	18.2		18.7	18.1	13.5	18.5	21.3	14.0
Progression Factor	0.47	1.09		1.00	1.00		0.62	0.62	0.47	1.36	1.36	4.25
Incremental Delay, d2	76.1	1.1		1.5	1.5		38.6	3.0	0.2	27.3	30.5	0.5
Delay (s)	91.2	15.7		17.6	19.7		50.2	14.2	6.5	52.4	59.5	59.8
Level of Service	F	B		B	B		D	B	A	D	E	E
Approach Delay (s)		25.9			19.6			16.1			58.8	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	24	24	53	91	73	38	2018	10	10	169	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	170	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	26	26	58	99	79	41	2193	11	11	184	21
RTOR Reduction (vph)	0	0	20	0	0	68	0	0	5	0	0	12
Lane Group Flow (vph)	32	26	6	58	99	11	41	2193	6	11	184	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Effective Green, g (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Actuated g/C Ratio	0.10	0.17	0.23	0.08	0.14	0.14	0.06	0.55	0.55	0.44	0.44	0.44
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	319	279	323	127	456	204	95	1762	788	74	733	623
v/s Ratio Prot	0.01	c0.02	0.00	c0.04	0.03		0.03	c0.69			0.11	
v/s Ratio Perm			0.00			0.01			0.00	0.06		0.01
v/c Ratio	0.10	0.09	0.02	0.46	0.22	0.06	0.43	1.24	0.01	0.15	0.25	0.01
Uniform Delay, d1	36.6	31.7	27.0	39.5	34.1	33.3	40.8	20.1	9.0	15.2	16.0	14.3
Progression Factor	1.00	1.00	1.00	1.35	1.28	1.00	1.00	1.00	1.00	1.18	1.20	1.00
Incremental Delay, d2	0.1	0.1	0.0	2.4	0.2	0.1	3.1	115.0	0.0	4.0	0.8	0.0
Delay (s)	36.7	31.9	27.0	55.8	44.0	33.4	43.9	135.1	9.0	22.0	19.9	14.4
Level of Service	D	C	C	E	D	C	D	F	A	C	B	B
Approach Delay (s)		32.2			43.4			132.9			19.5	
Approach LOS		C			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	113.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	10	51	293	0	0	0	0	0	459	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1664						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1664						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	11	55	318	0	0	0	0	0	499	93
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	56
Lane Group Flow (vph)	0	0	5	0	373	0	0	0	0	0	499	37
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		813						1835	571
v/s Ratio Prot											c0.11	
v/s Ratio Perm			0.00		0.22							0.03
v/c Ratio			0.01		0.46						0.27	0.07
Uniform Delay, d1			11.8		15.2						18.1	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		1.9						0.4	0.2
Delay (s)			11.8		17.0						18.5	16.8
Level of Service			B		B						B	B
Approach Delay (s)		11.8			17.0			0.0			18.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	283	105	20	225	0	0	162	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1664	1399		3172			3090	
Flt Permitted					0.99	1.00		0.93			1.00	
Satd. Flow (perm)					1664	1399		2954			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	308	114	22	245	0	0	176	37
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	360	75	0	267	0	0	199	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					17.2	17.2		43.6			43.6	
Effective Green, g (s)					17.2	17.2		43.6			43.6	
Actuated g/C Ratio					0.25	0.25		0.62			0.62	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					408	343		1839			1924	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.22	0.05		c0.09				
v/c Ratio					0.88	0.22		0.15			0.10	
Uniform Delay, d1					25.4	21.0		5.5			5.3	
Progression Factor					1.05	1.06		1.00			1.00	
Incremental Delay, d2					22.7	1.4		0.2			0.1	
Delay (s)					49.4	23.8		5.6			5.4	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			43.2			5.6			5.4	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	84	241	0	0	0	0	0	756	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	91	262	0	0	0	0	0	822	63
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	91	262	0	0	0	0	0	822	32
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.16						c0.18	
v/s Ratio Perm				0.06								0.03
v/c Ratio				0.18	0.43						0.36	0.05
Uniform Delay, d1				15.3	17.0						10.4	8.8
Progression Factor				0.41	0.46						1.00	1.00
Incremental Delay, d2				0.7	2.0						0.4	0.2
Delay (s)				7.0	9.8						10.9	9.0
Level of Service				A	A						B	A
Approach Delay (s)		0.0			9.1			0.0			10.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	246	66	80	1491	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	267	72	87	1621	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	267	56	0	1694	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.16							
v/s Ratio Perm						0.04		0.37				
v/c Ratio					0.43	0.11		0.76				
Uniform Delay, d1					16.3	14.3		14.4				
Progression Factor					1.70	2.00		1.00				
Incremental Delay, d2					1.9	0.4		2.4				
Delay (s)					29.6	28.9		16.8				
Level of Service					C	C		B				
Approach Delay (s)		0.0			29.4			16.8			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	26	232	38	28	423	0	0	658	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1374	1542	3185			3185	1263
Flt Permitted					1.00	1.00	0.34	1.00			1.00	1.00
Satd. Flow (perm)					1657	1374	557	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	28	252	41	30	460	0	0	715	46
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	0	280	15	30	460	0	0	715	28
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					497	412	342	1956			1956	775
v/s Ratio Prot								0.14			c0.22	
v/s Ratio Perm					0.17	0.01	0.05					0.02
v/c Ratio					0.56	0.04	0.09	0.24			0.37	0.04
Uniform Delay, d1					20.6	17.3	5.5	6.1			6.7	5.3
Progression Factor					0.85	1.13	1.00	1.00			0.75	0.23
Incremental Delay, d2					4.2	0.2	0.5	0.3			0.5	0.1
Delay (s)					21.7	19.7	6.0	6.4			5.5	1.3
Level of Service					C	B	A	A			A	A
Approach Delay (s)		0.0			21.4			6.3			5.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	218	34	72	854	0	0	407	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.69
Flpb, ped/bikes					0.93	1.00	0.88	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1548	984	1402	3185			1616	955
Flt Permitted					0.99	1.00	0.40	1.00			1.00	1.00
Satd. Flow (perm)					1548	984	595	3185			1616	955
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	237	37	78	928	0	0	442	193
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	30
Lane Group Flow (vph)	0	0	0	0	288	14	78	928	0	0	442	163
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					574	365	293	1569			796	470
v/s Ratio Prot								c0.29			0.27	
v/s Ratio Perm					0.19	0.01	0.13					0.17
v/c Ratio					0.50	0.04	0.27	0.59			0.56	0.35
Uniform Delay, d1					17.0	14.0	10.4	12.7			12.4	10.9
Progression Factor					1.45	1.97	1.00	1.00			1.47	1.77
Incremental Delay, d2					3.0	0.2	2.2	1.6			2.4	1.7
Delay (s)					27.7	27.8	12.6	14.4			20.5	21.0
Level of Service					C	C	B	B			C	C
Approach Delay (s)		0.0			27.7			14.2			20.7	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	181	48	62	912	0	0	593	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3154	1425	1593	3185			3107	
Flt Permitted					0.99	1.00	0.32	1.00			1.00	
Satd. Flow (perm)					3154	1425	529	3185			3107	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	197	52	67	991	0	0	645	126
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	245	16	67	991	0	0	748	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	317	1911			1864	
v/s Ratio Prot								c0.31			0.24	
v/s Ratio Perm					0.08	0.01	0.13					
v/c Ratio					0.25	0.04	0.21	0.52			0.40	
Uniform Delay, d1					17.8	16.6	6.4	8.1			7.4	
Progression Factor					1.00	1.00	1.00	1.00			1.74	
Incremental Delay, d2					0.6	0.2	1.5	1.0			0.3	
Delay (s)					18.4	16.8	7.9	9.1			13.2	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.2			9.1			13.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	769	203	197	725	115	214	564	221	130	323	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1512	3185	1097	1593	4368		1544	3185	1229	1488	3043	
Flt Permitted	0.30	1.00	1.00	0.17	1.00		0.43	1.00	1.00	0.42	1.00	
Satd. Flow (perm)	478	3185	1097	283	4368		695	3185	1229	658	3043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	836	221	214	788	125	233	613	240	141	351	57
RTOR Reduction (vph)	0	0	146	0	24	0	0	0	15	0	15	0
Lane Group Flow (vph)	216	836	75	214	889	0	233	613	225	141	393	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	1079	371	229	1965		344	1362	621	222	1031	
v/s Ratio Prot		0.26		c0.07	0.20		c0.04	0.19	0.03		0.13	
v/s Ratio Perm	c0.45		0.07	0.35			c0.25		0.16	0.21		
v/c Ratio	1.34	0.77	0.20	0.93	0.45		0.68	0.45	0.36	0.64	0.38	
Uniform Delay, d1	29.8	26.7	21.1	19.6	17.1		20.2	18.2	13.5	25.1	22.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	189.4	5.4	1.2	41.4	0.8		5.2	1.1	0.4	13.1	1.1	
Delay (s)	219.1	32.1	22.3	61.0	17.8		25.5	19.3	13.8	38.1	23.7	
Level of Service	F	C	C	E	B		C	B	B	D	C	
Approach Delay (s)		62.1			26.0			19.4			27.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	719	139	239	877	488	33	579	167	60	846	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1589	3185	1165	3090	3185	1230	1521	3185	1425	1543	3185	1132
Flt Permitted	0.16	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	259	3185	1165	3090	3185	1230	261	3185	1425	356	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	782	151	260	953	530	36	629	182	65	920	147
RTOR Reduction (vph)	0	0	103	0	0	40	0	0	139	0	0	55
Lane Group Flow (vph)	267	782	48	260	953	490	36	629	43	65	920	92
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	43.9	31.9	31.9	13.1	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	43.9	31.9	31.9	13.1	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.13	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	1016	371	404	1369	528	63	780	142	87	780	413
v/s Ratio Prot	c0.12	0.25		0.08	0.30			0.20	0.03		c0.29	0.03
v/s Ratio Perm	c0.31		0.04			c0.40	0.14			0.18		0.05
v/c Ratio	0.98	0.77	0.13	0.64	0.70	0.93	0.57	0.81	0.31	0.75	1.18	0.22
Uniform Delay, d1	22.1	30.7	24.2	41.2	23.2	27.0	33.1	35.5	41.8	34.9	37.8	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.8	5.6	0.7	3.5	1.6	22.5	32.6	8.7	1.2	44.1	93.8	0.3
Delay (s)	69.9	36.4	24.9	44.7	24.7	49.5	65.7	44.3	43.0	79.0	131.6	22.2
Level of Service	E	D	C	D	C	D	E	D	D	E	F	C
Approach Delay (s)		42.4			35.2			44.9			114.4	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	832	75	81	932	652	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2379
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	904	82	88	1013	709	1008
RTOR Reduction (vph)	0	49	0	0	0	13
Lane Group Flow (vph)	904	33	88	1013	709	995
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	35.7	35.7	15.4	54.6	25.6	41.0
Effective Green, g (s)	35.7	35.7	15.4	54.6	25.6	41.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.28	0.46
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1263	416	272	1932	878	1083
v/s Ratio Prot	c0.28		0.06	0.32	0.23	c0.16
v/s Ratio Perm		0.03				0.26
v/c Ratio	0.72	0.08	0.32	0.52	0.81	0.92
Uniform Delay, d1	22.9	16.9	32.7	10.2	29.9	22.9
Progression Factor	1.00	1.00	0.64	1.96	1.00	1.00
Incremental Delay, d2	3.5	0.4	0.5	0.8	5.5	12.1
Delay (s)	26.4	17.3	21.4	20.8	35.4	35.0
Level of Service	C	B	C	C	D	D
Approach Delay (s)	25.6			20.8	35.2	
Approach LOS	C			C	D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1057	38	53	643	63	123	702	45	88	878	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1143	1547	3185	1196	1593	3140		1584	3185	976
Flt Permitted	0.17	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.29	1.00	1.00
Satd. Flow (perm)	286	3185	1143	275	3185	1196	1593	3140		485	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1149	41	58	699	68	134	763	49	96	954	162
RTOR Reduction (vph)	0	0	25	0	0	50	0	5	0	0	0	110
Lane Group Flow (vph)	272	1149	16	58	699	18	134	807	0	96	954	52
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.7	35.9		33.8	29.0	29.0
Effective Green, g (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.7	35.9		33.8	29.0	29.0
Actuated g/C Ratio	0.40	0.40	0.40	0.26	0.26	0.26	0.13	0.40		0.38	0.32	0.32
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	1263	453	72	838	314	207	1252		240	1026	314
v/s Ratio Prot	c0.11	0.36			0.22		c0.08	0.26		0.02	c0.30	
v/s Ratio Perm	c0.33		0.01	0.21		0.01				0.13		0.05
v/c Ratio	1.12	0.91	0.04	0.81	0.83	0.06	0.65	0.64		0.40	0.93	0.17
Uniform Delay, d1	22.6	25.6	16.6	31.0	31.3	24.8	37.2	21.9		18.8	29.5	21.8
Progression Factor	1.08	1.07	1.00	0.92	0.96	1.00	0.63	1.61		1.00	1.00	1.00
Incremental Delay, d2	80.0	6.9	0.1	52.2	7.9	0.3	4.9	0.8		1.1	14.0	0.3
Delay (s)	104.3	34.3	16.7	80.6	37.9	25.1	28.3	36.0		19.9	43.5	22.1
Level of Service	F	C	B	F	D	C	C	D		B	D	C
Approach Delay (s)		46.8			39.8			34.9			38.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1093	81	45	719	78	60	562	125	80	426	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.92	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	834	1470	3185	1050	1536	4287		1500	2926	
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.25	1.00		0.27	1.00	
Satd. Flow (perm)	374	3185	834	367	3185	1050	410	4287		428	2926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1188	88	49	782	85	65	611	136	87	463	198
RTOR Reduction (vph)	0	0	29	0	0	50	0	24	0	0	53	0
Lane Group Flow (vph)	266	1188	59	49	782	35	65	723	0	87	608	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1886	493	152	1327	437	132	1381		137	942	
v/s Ratio Prot	c0.10	0.37			0.25			0.17			c0.21	
v/s Ratio Perm	c0.30		0.07	0.13		0.03	0.16			0.20		
v/c Ratio	0.68	0.63	0.12	0.32	0.59	0.08	0.49	0.52		0.64	0.65	
Uniform Delay, d1	11.2	11.9	8.0	17.7	20.3	15.8	24.6	24.9		26.0	26.1	
Progression Factor	1.31	1.61	1.94	0.59	0.62	0.68	1.08	1.14		1.00	1.00	
Incremental Delay, d2	3.2	1.1	0.3	4.8	1.7	0.3	12.3	1.4		20.3	3.4	
Delay (s)	17.9	20.3	15.9	15.2	14.3	11.1	38.8	29.8		46.3	29.5	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		19.6			14.1			30.5			31.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	1106	52	36	668	6	0	0	0	87	578	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1574	3185	1027	1525	3174						4468	1265
Flt Permitted	0.26	1.00	1.00	0.19	1.00						0.99	1.00
Satd. Flow (perm)	424	3185	1027	310	3174						4468	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1202	57	39	726	7	0	0	0	95	628	195
RTOR Reduction (vph)	0	0	19	0	1	0	0	0	0	0	0	24
Lane Group Flow (vph)	110	1202	38	39	732	0	0	0	0	0	723	171
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Effective Green, g (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	331	1691	545	125	1287						1563	559
v/s Ratio Prot	0.03	c0.38			0.23							0.03
v/s Ratio Perm	0.15		0.04	0.13							0.16	0.11
v/c Ratio	0.33	0.71	0.07	0.31	0.57						0.46	0.31
Uniform Delay, d1	11.7	15.9	10.3	18.2	20.7						22.7	16.2
Progression Factor	1.24	1.07	1.79	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	2.0	0.2	6.4	1.8						1.0	0.3
Delay (s)	15.0	19.0	18.6	24.6	22.5						23.7	16.5
Level of Service	B	B	B	C	C						C	B
Approach Delay (s)		18.6			22.6			0.0			22.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	15	33	37	68	150	20	414	17	14	1062	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2635		1593	2508		1582	3148		1472	3185	1337
Flt Permitted	0.95	1.00		0.95	1.00		0.17	1.00		0.47	1.00	1.00
Satd. Flow (perm)	1593	2635		1593	2508		284	3148		731	3185	1337
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	16	36	40	74	163	22	450	18	15	1154	117
RTOR Reduction (vph)	0	27	0	0	82	0	0	2	0	0	0	25
Lane Group Flow (vph)	126	25	0	40	155	0	22	466	0	15	1154	92
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Effective Green, g (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Actuated g/C Ratio	0.08	0.25		0.03	0.20		0.55	0.55		0.55	0.55	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	127	658		53	509		157	1741		404	1762	846
v/s Ratio Prot	c0.08	0.01		0.03	c0.06			0.15			c0.36	0.01
v/s Ratio Perm							0.08			0.02		0.06
v/c Ratio	0.99	0.04		0.75	0.30		0.14	0.27		0.04	0.65	0.11
Uniform Delay, d1	41.4	25.6		43.1	30.4		9.7	10.5		9.2	14.1	6.5
Progression Factor	1.00	1.00		1.00	1.00		1.12	1.11		1.00	1.00	1.00
Incremental Delay, d2	77.2	0.0		45.2	0.3		1.8	0.4		0.2	1.9	0.1
Delay (s)	118.5	25.6		88.4	30.8		12.8	12.1		9.3	16.0	6.6
Level of Service	F	C		F	C		B	B		A	B	A
Approach Delay (s)		91.4			39.1			12.1			15.1	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	172	0	340	16	91	806	45	32	1023	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.96	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3153		1577	3125		1533	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.18	1.00	1.00
Satd. Flow (perm)		1676	1277		3153		187	3125		291	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	187	0	370	17	99	876	49	35	1112	39
RTOR Reduction (vph)	0	0	15	0	4	0	0	4	0	0	0	24
Lane Group Flow (vph)	0	443	172	0	383	0	99	921	0	35	1112	15
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1236		115	1259	514
v/s Ratio Prot		c0.26			0.12			0.29			0.35	
v/s Ratio Perm			0.13				c0.53			0.12		0.01
v/c Ratio		0.54	0.28		0.25		1.36	0.74		0.30	0.88	0.03
Uniform Delay, d1		16.0	13.6		13.4		27.2	23.3		18.7	25.3	16.6
Progression Factor		1.00	1.00		0.85		0.93	0.91		0.55	0.71	0.31
Incremental Delay, d2		2.6	1.1		0.3		223.4	3.9		3.8	5.5	0.1
Delay (s)		18.5	14.7		11.7		248.7	25.0		14.2	23.6	5.2
Level of Service		B	B		B		F	C		B	C	A
Approach Delay (s)		17.4			11.7			46.7			22.7	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	581	79	0	497	42	110	478	83	0	494	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3024			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.18	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	304	3024			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	632	86	0	540	46	120	520	90	0	537	0
RTOR Reduction (vph)	0	0	49	0	0	26	0	17	0	0	0	0
Lane Group Flow (vph)	0	632	37	0	540	20	120	594	0	0	537	0
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		39.1	39.1		39.1	39.1	40.5	40.5			28.6	
Effective Green, g (s)		39.1	39.1		39.1	39.1	40.5	40.5			28.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.45	0.45			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		728	440		728	584	229	1360			513	
v/s Ratio Prot		c0.38			0.32		0.04	c0.20			c0.33	
v/s Ratio Perm			0.04			0.01	0.20					
v/c Ratio		0.87	0.08		0.74	0.03	0.52	0.44			1.05	
Uniform Delay, d1		23.1	14.9		21.2	14.6	32.4	16.9			30.7	
Progression Factor		0.67	0.03		0.29	0.69	0.79	0.85			0.91	
Incremental Delay, d2		12.5	0.4		4.4	0.1	2.0	0.2			49.2	
Delay (s)		28.1	0.8		10.7	10.2	27.6	14.6			77.3	
Level of Service		C	A		B	B	C	B			E	
Approach Delay (s)		24.8			10.6			16.8			77.3	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	475	174	56	542	0	0	0	0	17	605	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1504	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.29	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	466	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	189	61	589	0	0	0	0	18	658	40
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	22
Lane Group Flow (vph)	0	516	176	61	589	0	0	0	0	18	658	18
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	208	748					614	1433	275
v/s Ratio Prot		0.31			c0.35						c0.21	
v/s Ratio Perm			0.16	0.13						0.01		0.03
v/c Ratio		0.69	0.35	0.29	0.79					0.03	0.46	0.07
Uniform Delay, d1		19.9	16.3	15.9	21.3					13.8	17.2	14.0
Progression Factor		1.36	1.61	1.00	1.00					0.20	0.19	0.00
Incremental Delay, d2		2.9	1.1	3.6	8.2					0.1	1.0	0.4
Delay (s)		30.0	27.3	19.4	29.5					2.9	4.2	0.5
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		29.3			28.5			0.0			3.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	158	117	24	286	1026	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.93	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1473	3185	3185	748
Flt Permitted	0.95	1.00	0.22	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	336	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	127	26	311	1115	84
RTOR Reduction (vph)	0	27	0	0	0	19
Lane Group Flow (vph)	172	100	26	311	1115	65
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.6	19.6	60.7	60.7	60.7	60.7
Effective Green, g (s)	19.6	19.6	60.7	60.7	60.7	60.7
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	410	226	2148	2148	504
v/s Ratio Prot				0.10	c0.35	
v/s Ratio Perm	c0.12	0.05	0.08			0.09
v/c Ratio	0.56	0.24	0.12	0.14	0.52	0.13
Uniform Delay, d1	31.3	29.1	5.2	5.3	7.3	5.2
Progression Factor	1.00	1.00	1.00	1.00	2.27	3.38
Incremental Delay, d2	2.2	0.3	1.0	0.1	0.7	0.4
Delay (s)	33.5	29.4	6.2	5.4	17.3	18.1
Level of Service	C	C	A	A	B	B
Approach Delay (s)	31.8			5.5	17.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1406	176	58	460	0	0	1210	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1528	191	63	500	0	0	1315	230
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	107	1708	0	63	500	0	0	1315	219
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.55			0.16			c0.41	
v/s Ratio Perm				0.08			0.31					0.19
v/c Ratio				0.13	0.98		0.85	0.43			1.13	0.51
Uniform Delay, d1				9.1	18.9		26.2	21.4			28.5	22.2
Progression Factor				1.29	0.95		1.32	1.36			1.36	1.53
Incremental Delay, d2				0.2	12.9		59.3	0.9			65.8	3.2
Delay (s)				12.0	30.9		94.0	30.0			104.4	37.1
Level of Service				B	C		F	C			F	D
Approach Delay (s)		0.0			29.8			37.2			94.4	
Approach LOS		A			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	1232	80	137	429	0	0	237	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.96			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3006			1616	941
Flt Permitted				0.95	1.00	1.00		0.75			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2273			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	1339	87	149	466	0	0	258	157
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	64
Lane Group Flow (vph)	0	0	0	42	1339	49	0	615	0	0	258	93
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		947			673	392
v/s Ratio Prot					c0.42						0.16	
v/s Ratio Perm				0.04		0.04		c0.27				0.10
v/c Ratio				0.09	0.88	0.09		0.65			0.38	0.24
Uniform Delay, d1				12.7	21.0	12.7		21.0			18.2	17.0
Progression Factor				0.92	1.17	1.55		0.25			0.98	1.09
Incremental Delay, d2				0.3	5.6	0.2		1.3			0.6	0.5
Delay (s)				12.1	30.1	19.9		6.6			18.5	19.1
Level of Service				B	C	B		A			B	B
Approach Delay (s)		0.0			29.0			6.6			18.8	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	274	892	0	0	0	0	0	884	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	298	970	0	0	0	0	0	961	309
RTOR Reduction (vph)	0	0	0	66	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	232	970	0	0	0	0	0	961	296
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.30						0.21	
v/s Ratio Perm				0.18								c0.26
v/c Ratio				0.49	0.85						0.39	0.48
Uniform Delay, d1				22.5	26.7						12.2	13.0
Progression Factor				1.00	1.00						1.50	1.56
Incremental Delay, d2				3.6	8.1						0.5	2.6
Delay (s)				26.1	34.8						18.8	23.0
Level of Service				C	C						B	C
Approach Delay (s)		0.0			32.7			0.0			19.8	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	1176	0	0	116	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	1278	0	0	126	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	86	1278	0	0	126	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	54.8	74.5			9.0	
Effective Green, g (s)	54.8	74.5			9.0	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1881	5620			309	
v/s Ratio Prot	0.03	c0.19				
v/s Ratio Perm					c0.04	
v/c Ratio	0.05	0.23			0.41	
Uniform Delay, d1	7.1	1.6			38.0	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.1	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.1	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1003	138	0	0	0	0	1393	311	109	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4388		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4388		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	1090	150	0	0	0	0	1514	338	118	230	0
RTOR Reduction (vph)	0	0	98	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	121	1090	52	0	0	0	0	1832	0	118	230	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1857		236	912	
v/s Ratio Prot		c0.19						c0.42		c0.04	0.14	
v/s Ratio Perm	0.11		0.04									
v/c Ratio	0.31	0.55	0.12					0.99		0.50	0.25	
Uniform Delay, d1	21.6	23.8	20.1					25.7		39.9	10.8	
Progression Factor	1.01	1.02	1.35					0.49		1.00	1.00	
Incremental Delay, d2	2.1	1.1	0.5					15.7		1.7	0.7	
Delay (s)	24.0	25.4	27.6					28.3		41.6	11.5	
Level of Service	C	C	C					C		D	B	
Approach Delay (s)		25.5			0.0			28.3			21.7	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1352	116	0	0	0	0	721	92	109	1001	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.94	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3029		1502	3185	
Flt Permitted		1.00						1.00		0.23	1.00	
Satd. Flow (perm)		5642						3029		369	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1470	126	0	0	0	0	784	100	118	1088	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1611	0	0	0	0	0	881	0	118	1088	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1480		180	1557	
v/s Ratio Prot								0.29			c0.34	
v/s Ratio Perm		0.29								0.32		
v/c Ratio		0.68						0.60		0.66	0.70	
Uniform Delay, d1		21.0						16.6		17.3	17.9	
Progression Factor		0.75						0.65		0.35	0.17	
Incremental Delay, d2		1.2						1.6		1.7	0.2	
Delay (s)		17.0						12.4		7.7	3.2	
Level of Service		B						B		A	A	
Approach Delay (s)		17.0			0.0			12.4			3.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1321	73	0	0	0	0	426	161	0	331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5388						2737			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5388						2737			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1436	79	0	0	0	0	463	175	0	360	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1659	0	0	0	0	0	636	0	0	360	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2574						1116			658	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.31										
v/c Ratio		0.64						0.57			0.55	
Uniform Delay, d1		17.7						20.6			20.3	
Progression Factor		0.43						0.92			1.14	
Incremental Delay, d2		0.9						2.0			3.2	
Delay (s)		8.5						20.8			26.4	
Level of Service		A						C			C	
Approach Delay (s)		8.5			0.0			20.8			26.4	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1353	194	0	0	0	0	0	0	294	1045	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5451									4330	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5451									4330	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1471	211	0	0	0	0	0	0	320	1136	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1664	0	0	0	0	0	0	0	0	1444	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2495									1900	
v/s Ratio Prot		c0.31										
v/s Ratio Perm											0.33	
v/c Ratio		0.67									0.76	
Uniform Delay, d1		19.0									21.3	
Progression Factor		1.40									0.48	
Incremental Delay, d2		1.1									2.8	
Delay (s)		27.7									12.9	
Level of Service		C									B	
Approach Delay (s)		27.7			0.0			0.0			12.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	391	1329	254	0	0	0	0	883	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	425	1445	276	0	0	0	0	960	254
RTOR Reduction (vph)	0	0	0	34	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	319	1749	0	0	0	0	0	960	241
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.21	
v/s Ratio Perm				c0.43	0.32							c0.26
v/c Ratio				0.96	0.72						0.47	0.58
Uniform Delay, d1				24.2	20.4						17.6	18.7
Progression Factor				1.29	1.26						1.00	1.00
Incremental Delay, d2				37.2	1.6						0.8	5.8
Delay (s)				68.5	27.3						18.4	24.5
Level of Service				E	C						B	C
Approach Delay (s)		0.0			34.1			0.0			19.7	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	976	82	572	1326	0	0	0	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5519		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5519		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1061	89	622	1441	0	0	0	402
RTOR Reduction (vph)	0	0	0	0	12	0	451	0	0	0	0	377
Lane Group Flow (vph)	0	0	0	0	1138	0	171	1441	0	0	0	25
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2017		851	2013				153
v/s Ratio Prot					c0.21		0.06	c0.31				
v/s Ratio Perm												c0.01
v/c Ratio					0.56		0.20	0.72				0.16
Uniform Delay, d1					22.8		25.0	20.6				40.1
Progression Factor					1.07		4.49	1.58				1.00
Incremental Delay, d2					1.0		0.4	1.6				0.5
Delay (s)					25.5		112.7	34.1				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			25.5			57.8			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	799	140	73	682	0	0	883	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5349		1499	3185			3185	936
Flt Permitted				0.95	1.00		0.23	1.00			1.00	1.00
Satd. Flow (perm)				862	5349		370	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	868	152	79	741	0	0	960	167
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	93	985	0	79	741	0	0	960	156
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		206	1776			1776	522
v/s Ratio Prot					c0.18			0.23			c0.30	
v/s Ratio Perm				0.11			0.21					0.17
v/c Ratio				0.32	0.55		0.38	0.42			0.54	0.30
Uniform Delay, d1				22.4	24.5		11.2	11.5			12.6	10.6
Progression Factor				0.32	0.29		1.13	1.16			1.94	2.04
Incremental Delay, d2				2.7	1.1		4.8	0.7			0.8	1.0
Delay (s)				9.8	8.3		17.5	13.9			25.3	22.6
Level of Service				A	A		B	B			C	C
Approach Delay (s)		0.0			8.5			14.3			24.9	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	884	63	45	506	0	0	343	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5403			3122			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5403			2800			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	961	68	49	550	0	0	373	66
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1061	0	0	599	0	0	373	54
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1415			816	404
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.20			0.21				0.07
v/c Ratio					0.50			0.42			0.46	0.13
Uniform Delay, d1					20.9			14.0			14.3	11.8
Progression Factor					0.50			1.51			1.83	2.15
Incremental Delay, d2					0.8			0.8			1.5	0.6
Delay (s)					11.3			22.0			27.8	26.0
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.3			22.0			27.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	664	0	0	0	0	0	976	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	722	0	0	0	0	0	1061	208
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	0	0	834	0	0	0	0	0	1061	161
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.15							0.11
v/c Ratio					0.37						0.46	0.22
Uniform Delay, d1					19.5						14.3	12.4
Progression Factor					1.00						0.54	0.48
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.9						8.2	6.4
Level of Service					B						A	A
Approach Delay (s)		0.0			19.9			0.0			7.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1526	171	0	0	0	0	0	0	188	1255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5500	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1659	186	0	0	0	0	0	0	204	1364	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1659	176	0	0	0	0	0	0	0	1556	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2468	
v/s Ratio Prot		c0.29										
v/s Ratio Perm			0.19								0.28	
v/c Ratio		0.64	0.43								0.63	
Uniform Delay, d1		19.3	17.0								19.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	3.2								1.1	
Delay (s)		20.5	20.2								23.0	
Level of Service		C	C								C	
Approach Delay (s)		20.5			0.0			0.0			23.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	579	1116	0	0	0	0	0	1495	196	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5044						6420				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5044						6420				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	1213	0	0	0	0	0	1625	213	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	347	1471	0	0	0	0	0	1823	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2874				
v/s Ratio Prot								c0.28				
v/s Ratio Perm	c0.41	0.29										
v/c Ratio	0.92	0.65						0.63				
Uniform Delay, d1	23.5	19.5						19.2				
Progression Factor	0.47	0.39						0.79				
Incremental Delay, d2	25.5	1.1						0.8				
Delay (s)	36.4	8.6						16.0				
Level of Service	D	A						B				
Approach Delay (s)		14.1			0.0			16.0			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1037	140	0	0	0	0	747	104	93	854	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.28	1.00	
Satd. Flow (perm)		5664						3185	1425	463	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1127	152	0	0	0	0	812	113	101	928	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	1252	0	0	0	0	0	812	103	101	928	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	252	2491	
v/s Ratio Prot		c0.22						c0.25			0.20	
v/s Ratio Perm									0.07	0.22		
v/c Ratio		0.57						0.47	0.13	0.40	0.37	
Uniform Delay, d1		21.6						12.5	10.1	11.9	11.7	
Progression Factor		0.28						0.43	0.44	0.38	0.40	
Incremental Delay, d2		0.8						0.8	0.3	4.1	0.4	
Delay (s)		6.8						6.1	4.8	8.6	5.1	
Level of Service		A						A	A	A	A	
Approach Delay (s)		6.8			0.0			5.9			5.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	965	119	0	0	0	0	561	98	0	383	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5151						2938			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5151						2938			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	1049	129	0	0	0	0	610	107	0	416	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1313	0	0	0	0	0	713	0	0	416	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2289						1295			712	
v/s Ratio Prot								0.24			c0.26	
v/s Ratio Perm		0.25										
v/c Ratio		0.57						0.55			0.58	
Uniform Delay, d1		18.6						18.6			18.9	
Progression Factor		0.29						1.52			1.05	
Incremental Delay, d2		0.9						1.3			3.2	
Delay (s)		6.3						29.6			23.0	
Level of Service		A						C			C	
Approach Delay (s)		6.3			0.0			29.6			23.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1001	125	0	0	0	0	0	0	212	979	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1088	136	0	0	0	0	0	0	230	1064	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	1199	0	0	0	0	0	0	0	0	1271	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.28	
v/c Ratio		0.47									0.62	
Uniform Delay, d1		17.4									18.9	
Progression Factor		0.19									0.93	
Incremental Delay, d2		0.5									1.3	
Delay (s)		3.8									18.9	
Level of Service		A									B	
Approach Delay (s)		3.8			0.0			0.0			18.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	253	0	0	431	137	266	1358	108	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	275	0	0	468	149	289	1476	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	85	0	0	0
Lane Group Flow (vph)	105	275	0	0	468	13	289	1476	32	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Effective Green, g (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	242	1024			1664	96	435	1251	375			
v/s Ratio Prot	c0.03	0.02			c0.02	0.01		c0.32				
v/s Ratio Perm		0.15			0.13		0.18		0.02			
v/c Ratio	0.43	0.27			0.28	0.13	0.66	1.18	0.09			
Uniform Delay, d1	52.8	12.1			19.0	52.6	38.7	43.6	32.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.2	0.1			0.1	0.6	7.8	89.5	0.4			
Delay (s)	54.0	12.3			19.1	53.3	46.5	133.1	32.9			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.8			27.4			113.6			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	83.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	182	73	406	0	0	0	0	43	1307	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3070						5514	
Flt Permitted		1.00	1.00		0.84						1.00	
Satd. Flow (perm)		1676	932		2603						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	315	198	79	441	0	0	0	0	47	1421	78
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	315	186	0	520	0	0	0	0	0	1537	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1217						2340	
v/s Ratio Prot		0.19										
v/s Ratio Perm			c0.20		0.20						0.28	
v/c Ratio		0.40	0.43		0.43						0.66	
Uniform Delay, d1		15.7	15.9		15.9						20.7	
Progression Factor		1.00	1.00		0.27						1.00	
Incremental Delay, d2		1.5	3.1		1.1						1.5	
Delay (s)		17.2	19.0		5.3						22.1	
Level of Service		B	B		A						C	
Approach Delay (s)		17.9			5.3			0.0			22.1	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	323	59	0	435	77	68	358	66	38	322	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.92			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2761			3030	
Flt Permitted		1.00	1.00		1.00	1.00		0.84			0.87	
Satd. Flow (perm)		1616	762		3185	650		2332			2643	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	351	64	0	473	84	74	389	72	41	350	15
RTOR Reduction (vph)	0	0	8	0	0	9	0	5	0	0	1	0
Lane Group Flow (vph)	0	351	56	0	473	75	0	530	0	0	405	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		1010			1145	
v/s Ratio Prot		c0.22			0.15							
v/s Ratio Perm			0.07			0.12		c0.23			0.15	
v/c Ratio		0.43	0.15		0.30	0.23		0.53			0.35	
Uniform Delay, d1		14.4	12.1		13.2	12.7		18.7			17.1	
Progression Factor		0.47	0.41		1.16	1.22		1.08			1.00	
Incremental Delay, d2		1.6	0.8		0.4	1.4		1.7			0.9	
Delay (s)		8.4	5.8		15.7	16.9		21.8			17.9	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		8.0			15.9			21.8			17.9	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	348	70	39	443	0	0	0	0	196	1367	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.82	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1304	1676					933	3185	959
Flt Permitted		1.00	1.00	0.43	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	584	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	378	76	42	482	0	0	0	0	213	1486	51
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	378	63	42	482	0	0	0	0	213	1486	38
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	259	744					415	1419	427
v/s Ratio Prot		0.23			c0.29						c0.47	
v/s Ratio Perm			0.08	0.07						0.23		0.04
v/c Ratio		0.51	0.17	0.16	0.65					0.51	1.05	0.09
Uniform Delay, d1		17.9	15.0	15.0	19.5					17.9	24.9	14.4
Progression Factor		1.44	1.58	0.39	0.34					2.05	1.91	2.72
Incremental Delay, d2		2.3	0.9	1.1	3.4					3.8	35.6	0.3
Delay (s)		28.1	24.6	6.9	10.0					40.5	83.1	39.5
Level of Service		C	C	A	A					D	F	D
Approach Delay (s)		27.5			9.7			0.0			76.6	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	55.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	569	0	0	462	154	110	1288	99	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5256				
Flt Permitted	0.37	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	613	1676			1676	803		5256				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	618	0	0	502	167	120	1400	108	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	48	618	0	0	502	157	0	1616	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	328	899			899	430		1880				
v/s Ratio Prot		c0.37			0.30							
v/s Ratio Perm	0.08					0.20		0.31				
v/c Ratio	0.15	0.69			0.56	0.36		0.86				
Uniform Delay, d1	10.5	15.3			13.8	12.0		26.8				
Progression Factor	0.65	0.60			1.43	1.50		0.84				
Incremental Delay, d2	0.9	3.9			1.1	1.1		0.5				
Delay (s)	7.7	13.1			20.9	19.1		23.2				
Level of Service	A	B			C	B		C				
Approach Delay (s)		12.7			20.4			23.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	421	61	21	435	108	0	685	51	0	970	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	1.00	1.00	1.00	0.77	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	801	1227	1676	799		3003			2804	
Flt Permitted	0.95	1.00	1.00	0.50	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	801	644	1676	799		3003			2804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	458	66	23	473	117	0	745	55	0	1054	201
RTOR Reduction (vph)	0	0	2	0	0	56	0	4	0	0	17	0
Lane Group Flow (vph)	84	458	64	23	473	61	0	796	0	0	1238	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Effective Green, g (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.33	0.33	0.33		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	177	800	382	214	558	266		1368			1277	
v/s Ratio Prot	0.05	c0.27			c0.28			0.26			c0.44	
v/s Ratio Perm			0.08	0.04		0.08						
v/c Ratio	0.47	0.57	0.17	0.11	0.85	0.23		0.58			0.97	
Uniform Delay, d1	37.5	16.9	13.3	20.7	27.9	21.7		18.1			23.9	
Progression Factor	0.64	1.06	0.84	1.72	1.66	2.91		1.34			1.31	
Incremental Delay, d2	6.1	2.0	0.6	0.9	13.4	1.8		1.6			18.3	
Delay (s)	30.3	20.0	11.9	36.6	59.7	64.7		25.9			49.6	
Level of Service	C	B	B	D	E	E		C			D	
Approach Delay (s)		20.5			59.8			25.9			49.6	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	406	37	12	422	58	10	710	57	0	592	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1377	1676	439	1593	1676	881		2995			1616	
Flt Permitted	0.35	1.00	1.00	0.36	1.00	1.00		0.94			1.00	
Satd. Flow (perm)	503	1676	439	611	1676	881		2820			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	441	40	13	459	63	11	772	62	0	643	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	0
Lane Group Flow (vph)	27	441	22	13	459	45	0	841	0	0	643	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	224	746	195	272	746	392		1234			707	
v/s Ratio Prot		0.26			c0.27						c0.40	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.30				
v/c Ratio	0.12	0.59	0.11	0.05	0.62	0.12		0.68			0.91	
Uniform Delay, d1	14.6	18.8	14.6	14.1	19.1	14.6		20.3			23.6	
Progression Factor	0.99	1.18	1.67	0.88	1.08	1.23		0.79			0.49	
Incremental Delay, d2	0.9	2.8	1.0	0.3	3.3	0.5		1.7			16.2	
Delay (s)	15.4	25.1	25.3	12.8	23.9	18.4		17.7			27.8	
Level of Service	B	C	C	B	C	B		B			C	
Approach Delay (s)		24.6			23.0			17.7			27.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	71	58	375	0	0	0	0	64	878	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1372	1676						4400	618
Flt Permitted		1.00	1.00	0.36	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	517	1676						4400	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	77	63	408	0	0	0	0	70	954	139
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	443	57	63	408	0	0	0	0	0	1024	62
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	220	713						1965	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.07	0.12							0.23	0.10
v/c Ratio		0.62	0.16	0.29	0.57						0.52	0.22
Uniform Delay, d1		20.2	15.9	16.9	19.6						18.0	15.3
Progression Factor		1.65	2.07	1.00	1.00						1.42	4.60
Incremental Delay, d2		3.3	0.8	3.3	3.3						0.8	1.5
Delay (s)		36.6	33.8	20.2	22.9						26.2	71.9
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.2			22.6			0.0			31.7	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1990	341	241	2135	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2163	371	262	2321	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	91	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2163	255	171	2321	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					32.7	32.7	35.0	35.0				
Effective Green, g (s)					32.7	32.7	35.0	35.0				
Actuated g/C Ratio					0.36	0.36	0.39	0.39				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2095	406	619	1779				
v/s Ratio Prot					c0.38			c0.51				
v/s Ratio Perm						0.23	0.11					
v/c Ratio					1.03	0.63	0.28	1.30				
Uniform Delay, d1					28.6	23.6	18.8	27.5				
Progression Factor					1.00	1.00	0.77	0.86				
Incremental Delay, d2					28.6	7.2	0.8	140.2				
Delay (s)					57.2	30.8	15.3	163.8				
Level of Service					E	C	B	F				
Approach Delay (s)		0.0			53.4			148.8			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	101.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	1191	105	66	687	0	0	874	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4416		1505	3185			3185	975
Flt Permitted				0.95	1.00		0.22	1.00			1.00	1.00
Satd. Flow (perm)				1160	4416		353	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	1295	114	72	747	0	0	950	179
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	92	1397	0	72	747	0	0	950	178
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1717		192	1734			1734	530
v/s Ratio Prot					c0.32			0.23			c0.30	
v/s Ratio Perm				0.08			0.20					0.18
v/c Ratio				0.20	0.81		0.38	0.43			0.55	0.34
Uniform Delay, d1				18.3	24.6		11.7	12.2			13.3	11.4
Progression Factor				1.89	1.83		0.96	0.82			1.01	1.07
Incremental Delay, d2				0.8	3.5		5.1	0.7			0.5	0.7
Delay (s)				35.4	48.4		16.4	10.7			13.9	13.0
Level of Service				D	D		B	B			B	B
Approach Delay (s)		0.0			47.6			11.2			13.8	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	71	1146	66	94	722	0	0	434	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5600			3167			1616	936
Flt Permitted					1.00			0.65			1.00	1.00
Satd. Flow (perm)					5600			2076			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	77	1246	72	102	785	0	0	472	212
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	61
Lane Group Flow (vph)	0	0	0	0	1386	0	0	887	0	0	472	151
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2364			1067			497	288
v/s Ratio Prot								c0.08			c0.29	
v/s Ratio Perm					0.25			0.30				0.16
v/c Ratio					0.59			0.83			0.95	0.52
Uniform Delay, d1					20.0			21.1			30.5	25.7
Progression Factor					1.85			1.51			1.67	2.22
Incremental Delay, d2					0.9			5.5			18.6	3.4
Delay (s)					37.9			37.4			69.4	60.5
Level of Service					D			D			E	E
Approach Delay (s)		0.0			37.9			37.4			66.6	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	117	1082	0	0	0	0	0	697	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5564						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5564						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	127	1176	0	0	0	0	0	758	211
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1283	0	0	0	0	0	758	200
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2244						2263	634
v/s Ratio Prot											c0.17	
v/s Ratio Perm					0.23							0.16
v/c Ratio					0.57						0.33	0.32
Uniform Delay, d1					20.8						13.8	13.6
Progression Factor					1.00						1.80	1.91
Incremental Delay, d2					1.1						0.4	1.2
Delay (s)					21.9						25.2	27.2
Level of Service					C						C	C
Approach Delay (s)		0.0			21.9			0.0			25.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	1616	0	0	0	0	0	1419	176	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	1757	0	0	0	0	0	1542	191	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	299	1775	0	0	0	0	0	1542	176	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2079						1585	476			
v/s Ratio Prot								c0.48				
v/s Ratio Perm	0.27	0.33							0.18			
v/c Ratio	0.71	0.85						0.97	0.37			
Uniform Delay, d1	23.5	25.4						22.0	13.9			
Progression Factor	1.00	1.00						1.28	1.59			
Incremental Delay, d2	9.9	4.7						8.1	0.7			
Delay (s)	33.4	30.1						36.4	22.9			
Level of Service	C	C						D	C			
Approach Delay (s)		30.6			0.0			34.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1337	262	0	0	0	0	0	0	164	1307	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5625								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5625								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1453	285	0	0	0	0	0	0	178	1421	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1725	0	0	0	0	0	0	0	166	1421	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2187								785	2845	
v/s Ratio Prot		c0.31									c0.25	
v/s Ratio Perm										0.10		
v/c Ratio		0.79								0.21	0.50	
Uniform Delay, d1		24.2								12.9	15.3	
Progression Factor		1.73								0.50	0.73	
Incremental Delay, d2		1.7								0.5	0.5	
Delay (s)		43.6								6.9	11.7	
Level of Service		D								A	B	
Approach Delay (s)		43.6			0.0			0.0			11.2	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	1302	42	0	0	0	0	581	90	94	384	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.98	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5449						2977			3098	
Flt Permitted		0.99						1.00			0.71	
Satd. Flow (perm)		5449						2977			2226	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	1415	46	0	0	0	0	632	98	102	417	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1644	0	0	0	0	0	730	0	0	519	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1937						1720			1286	
v/s Ratio Prot								c0.25				
v/s Ratio Perm		0.30									0.23	
v/c Ratio		0.85						0.42			0.40	
Uniform Delay, d1		26.8						10.6			10.5	
Progression Factor		1.22						1.00			0.46	
Incremental Delay, d2		3.4						0.8			0.9	
Delay (s)		36.0						11.4			5.7	
Level of Service		D						B			A	
Approach Delay (s)		36.0			0.0			11.4			5.7	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱							↰	↑↑↑	
Volume (vph)	0	1591	236	0	0	0	0	0	0	228	1818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1729	257	0	0	0	0	0	0	248	1976	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1729	244	0	0	0	0	0	0	233	1976	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.38									c0.43	
v/s Ratio Perm			0.21							0.16		
v/c Ratio		0.96	0.52							0.32	0.88	
Uniform Delay, d1		26.4	20.7							13.8	20.5	
Progression Factor		0.77	0.65							0.94	0.75	
Incremental Delay, d2		10.6	3.1							0.8	3.8	
Delay (s)		31.0	16.5							13.9	19.1	
Level of Service		C	B							B	B	
Approach Delay (s)		29.1			0.0			0.0			18.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	499	2423	0	0	0	0	0	2010	303	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4413						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4413						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	2634	0	0	0	0	0	2185	329	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	3163	0	0	0	0	0	2185	317	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1770						2252	635			
v/s Ratio Prot								c0.48				
v/s Ratio Perm		0.72							0.25			
v/c Ratio		1.79						0.97	0.50			
Uniform Delay, d1		26.9						22.2	15.4			
Progression Factor		1.16						0.68	0.59			
Incremental Delay, d2		356.2						12.4	2.6			
Delay (s)		387.4						27.4	11.7			
Level of Service		F						C	B			
Approach Delay (s)		387.4			0.0			25.4			0.0	
Approach LOS		F			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	227.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	1404	52	0	0	0	0	641	67	112	928	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.92	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4463						3050		1469	3185	
Flt Permitted		1.00						1.00		0.30	1.00	
Satd. Flow (perm)		4463						3050		470	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1526	57	0	0	0	0	697	73	122	1009	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1616	0	0	0	0	0	770	0	122	1009	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1586						1762		271	1840	
v/s Ratio Prot								0.25			c0.32	
v/s Ratio Perm		0.36								0.26		
v/c Ratio		1.02						0.44		0.45	0.55	
Uniform Delay, d1		29.0						10.7		10.8	11.7	
Progression Factor		1.56						0.18		0.34	0.32	
Incremental Delay, d2		12.4						0.6		4.8	1.1	
Delay (s)		57.6						2.6		8.4	4.8	
Level of Service		E						A		A	A	
Approach Delay (s)		57.6			0.0			2.6			5.2	
Approach LOS		E			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1393	104	0	0	0	0	828	108	0	538	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4360						3005			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4360						3005			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1514	113	0	0	0	0	900	117	0	585	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	193	1617	0	0	0	0	0	1016	0	0	585	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1899						1352			727	
v/s Ratio Prot		c0.37						0.34			c0.36	
v/s Ratio Perm	0.18											
v/c Ratio	0.41	0.85						0.75			0.80	
Uniform Delay, d1	17.5	22.8						20.6			21.3	
Progression Factor	0.54	0.72						0.77			0.41	
Incremental Delay, d2	1.1	2.2						2.4			4.9	
Delay (s)	10.6	18.5						18.2			13.6	
Level of Service	B	B						B			B	
Approach Delay (s)		17.6			0.0			18.2			13.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	936	124	0	0	0	0	1179	91	72	843	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4333						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1221	4333						3185	1110	225	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	1017	135	0	0	0	0	1282	99	78	916	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	327	1133	0	0	0	0	0	1282	87	78	916	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1434						1772	617	125	1772	
v/s Ratio Prot		0.26						c0.40			0.29	
v/s Ratio Perm	c0.27								0.08	0.35		
v/c Ratio	0.81	0.79						0.72	0.14	0.62	0.52	
Uniform Delay, d1	27.5	27.3						14.8	9.6	13.6	12.4	
Progression Factor	1.62	1.66						1.64	2.05	1.00	1.00	
Incremental Delay, d2	8.7	2.3						1.7	0.3	21.2	1.1	
Delay (s)	53.4	47.5						26.0	19.9	34.8	13.5	
Level of Service	D	D						C	B	C	B	
Approach Delay (s)		48.8			0.0			25.6			15.2	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	970	206	98	1500	215	247	1348	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.76	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1078	1457	4577	950	1164	3185	1246			
Flt Permitted	0.15	1.00	1.00	0.26	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1078	398	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1054	224	107	1630	234	268	1465	200	0	0	0
RTOR Reduction (vph)	0	0	88	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	187	1054	136	107	1630	134	268	1465	156	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	656	99	1149	238	561	1535	600			
v/s Ratio Prot	c0.08	0.23	0.05		c0.36		0.11	c0.46				
v/s Ratio Perm	0.26		0.08	0.27		0.14	0.12		0.13			
v/c Ratio	0.87	0.60	0.21	1.08	1.42	0.56	0.48	0.95	0.26			
Uniform Delay, d1	22.5	22.2	7.9	33.7	33.7	29.4	15.7	22.4	13.8			
Progression Factor	1.00	1.00	1.00	1.08	1.04	1.23	0.52	0.73	0.28			
Incremental Delay, d2	28.4	1.5	0.2	95.3	191.7	6.0	0.1	2.0	0.1			
Delay (s)	50.9	23.7	8.0	131.9	226.8	42.1	8.3	18.2	4.0			
Level of Service	D	C	A	F	F	D	A	B	A			
Approach Delay (s)		24.8			199.7			15.4			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	60	51	1245	0	0	0	0	63	1205	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.18	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	295	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	65	55	1353	0	0	0	0	68	1310	411
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1039	50	55	1353	0	0	0	0	0	1378	397
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	140	1521						2345	581
v/s Ratio Prot		0.33			c0.42							
v/s Ratio Perm			0.04	0.19							0.24	c0.28
v/c Ratio		0.68	0.07	0.39	0.89						0.59	0.68
Uniform Delay, d1		18.2	12.7	15.1	21.3						20.8	21.9
Progression Factor		0.38	0.12	1.00	1.00						1.69	1.69
Incremental Delay, d2		2.2	0.2	8.1	8.2						0.9	5.5
Delay (s)		9.1	1.8	23.2	29.5						36.1	42.6
Level of Service		A	A	C	C						D	D
Approach Delay (s)		8.7			29.3			0.0			37.6	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	961	40	29	1014	66	91	480	49	28	279	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3128		1593	3086			3043			2886	
Flt Permitted	0.14	1.00		0.17	1.00			0.77			0.88	
Satd. Flow (perm)	233	3128		279	3086			2367			2545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1045	43	32	1102	72	99	522	53	30	303	115
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	7	0
Lane Group Flow (vph)	132	1085	0	32	1169	0	0	667	0	0	441	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	116	1570		140	1549			951			1023	
v/s Ratio Prot		0.35			0.38							
v/s Ratio Perm	c0.57			0.11				c0.28			0.17	
v/c Ratio	1.14	0.69		0.23	0.75			0.70			0.43	
Uniform Delay, d1	24.9	19.0		14.0	20.0			24.9			21.6	
Progression Factor	1.00	1.00		0.47	0.58			1.00			1.00	
Incremental Delay, d2	125.4	2.5		2.4	2.2			4.3			1.3	
Delay (s)	150.3	21.5		9.0	13.8			29.2			23.0	
Level of Service	F	C		A	B			C			C	
Approach Delay (s)		35.4			13.6			29.2			23.0	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	892	101	101	1198	0	0	0	0	111	1465	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3137		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.17	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3137		283	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	970	110	110	1302	0	0	0	0	121	1592	277
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	1078	0	110	1302	0	0	0	0	121	1592	258
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		141	1592					637	1830	570
v/s Ratio Prot		0.34			c0.41						c0.35	
v/s Ratio Perm				0.39						0.08		0.18
v/c Ratio		0.69		0.78	0.82					0.19	0.87	0.45
Uniform Delay, d1		19.0		20.5	21.1					19.5	27.6	22.0
Progression Factor		0.98		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.8		33.8	4.8					0.7	6.0	2.6
Delay (s)		20.5		54.3	25.9					20.1	33.6	24.6
Level of Service		C		D	C					C	C	C
Approach Delay (s)		20.5			28.1			0.0			31.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	884	0	0	1131	80	138	931	43	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3131			4529	1327			
Flt Permitted	0.11	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	179	3185			3131			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	961	0	0	1229	87	150	1012	47	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	29	0	0	0
Lane Group Flow (vph)	170	961	0	0	1310	0	0	1162	18	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	91	1631			1603			1710	501			
v/s Ratio Prot		0.30			0.42							
v/s Ratio Perm	c0.95							0.26	0.01			
v/c Ratio	1.87	0.59			0.82			0.68	0.04			
Uniform Delay, d1	21.9	15.3			18.4			23.4	17.7			
Progression Factor	1.00	1.00			0.66			0.52	0.29			
Incremental Delay, d2	429.4	1.6			4.6			1.9	0.1			
Delay (s)	451.3	16.9			16.8			14.1	5.2			
Level of Service	F	B			B			B	A			
Approach Delay (s)		82.2			16.8			13.8			0.0	
Approach LOS		F			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	723	53	43	611	71	43	593	53	49	853	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1551	3111		1523	3104		1593	3110		1541	3185	1230
Flt Permitted	0.32	1.00		0.28	1.00		0.13	1.00		0.23	1.00	1.00
Satd. Flow (perm)	525	3111		446	3104		216	3110		377	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	786	58	47	664	77	47	645	58	53	927	158
RTOR Reduction (vph)	0	6	0	0	10	0	0	7	0	0	0	80
Lane Group Flow (vph)	70	838	0	47	731	0	47	696	0	53	927	78
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	306	1814		260	1810		74	1071		129	1097	423
v/s Ratio Prot		c0.27			0.24			0.22			c0.29	
v/s Ratio Perm	0.13			0.11			0.22			0.14		0.06
v/c Ratio	0.23	0.46		0.18	0.40		0.64	0.65		0.41	0.85	0.18
Uniform Delay, d1	9.0	10.7		8.7	10.2		24.8	24.9		22.5	27.3	20.7
Progression Factor	2.28	2.19		1.20	0.90		0.48	0.43		1.49	1.48	2.65
Incremental Delay, d2	1.4	0.7		1.2	0.5		32.8	2.8		8.1	6.9	0.8
Delay (s)	22.0	24.1		11.7	9.8		44.7	13.5		41.6	47.4	55.5
Level of Service	C	C		B	A		D	B		D	D	E
Approach Delay (s)		24.0			9.9			15.5			48.2	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	716	77	89	675	100	35	753	70	0	620	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.96	1.00		0.94	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1527	3053		1502	3042			3178	1263		1616	
Flt Permitted	0.24	1.00		0.24	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	394	3053		374	3042			2377	1263		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	778	84	97	734	109	38	818	76	0	674	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	23	0	0	0
Lane Group Flow (vph)	86	853	0	97	830	0	0	856	53	0	674	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1390		170	1385			1030	547		700	
v/s Ratio Prot		c0.28			0.27						c0.42	
v/s Ratio Perm	0.22			0.26				0.36	0.04			
v/c Ratio	0.48	0.61		0.57	0.60			0.83	0.10		0.96	
Uniform Delay, d1	17.1	18.5		18.0	18.3			22.6	15.1		24.8	
Progression Factor	0.73	0.73		1.50	1.57			0.55	0.45		1.22	
Incremental Delay, d2	8.2	1.9		8.0	1.1			6.5	0.3		17.9	
Delay (s)	20.7	15.4		35.1	29.9			18.9	7.1		48.2	
Level of Service	C	B		D	C			B	A		D	
Approach Delay (s)		15.9			30.5			17.9			48.2	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	559	126	87	752	120	69	880	104	60	753	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3097		1593	3120		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.11	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1593	3097		618	3120		176	3185	1425	301	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	608	137	95	817	130	75	957	113	65	818	299
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	158
Lane Group Flow (vph)	189	724	0	95	933	0	75	957	64	65	818	141
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1434		203	1029		74	1344	601	127	707	601
v/s Ratio Prot	c0.12	0.23			c0.30			0.30			c0.49	
v/s Ratio Perm				0.15			0.42		0.05	0.22		0.10
v/c Ratio	1.26	0.50		0.47	0.91		1.01	0.71	0.11	0.51	1.16	0.24
Uniform Delay, d1	40.8	16.9		23.9	28.8		26.0	21.5	15.7	19.2	26.0	16.7
Progression Factor	0.83	1.17		1.00	1.00		1.03	1.01	1.57	0.66	0.73	0.46
Incremental Delay, d2	154.9	1.1		7.6	13.0		103.8	3.0	0.3	12.4	84.5	0.8
Delay (s)	188.9	20.9		31.5	41.8		130.6	24.7	25.1	25.1	103.4	8.5
Level of Service	F	C		C	D		F	C	C	C	F	A
Approach Delay (s)		54.9			40.9			31.7			75.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	34	50	193	439	325	7	1624	0	9	281	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		197	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	37	54	210	477	353	8	1765	0	10	305	35
RTOR Reduction (vph)	0	0	41	0	0	131	0	0	0	0	0	22
Lane Group Flow (vph)	78	37	13	210	477	222	8	1765	0	10	305	13
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.3	17.0	22.0	10.9	20.6	20.6	5.0	44.1		34.1	34.1	34.1
Effective Green, g (s)	7.3	17.0	22.0	10.9	20.6	20.6	5.0	44.1		34.1	34.1	34.1
Actuated g/C Ratio	0.08	0.19	0.24	0.12	0.23	0.23	0.06	0.49		0.38	0.38	0.38
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	250	316	348	192	729	326	88	1560		74	635	539
v/s Ratio Prot	c0.03	0.02	0.00	c0.13	0.15		0.01	c0.55			0.18	
v/s Ratio Perm			0.01			c0.16				0.05		0.01
v/c Ratio	0.31	0.12	0.04	1.09	0.65	0.68	0.09	1.13		0.14	0.48	0.02
Uniform Delay, d1	39.0	30.3	25.9	39.5	31.5	31.7	40.3	22.9		18.3	21.2	17.5
Progression Factor	1.00	1.00	1.00	1.35	1.23	1.44	1.00	1.00		0.65	0.67	1.00
Incremental Delay, d2	0.7	0.2	0.0	86.8	1.8	4.8	0.4	67.8		3.4	2.3	0.1
Delay (s)	39.7	30.4	26.0	140.3	40.6	50.5	40.8	90.7		15.3	16.6	17.6
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.3			64.1			90.5			16.7	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	71.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	47	76	526	0	0	0	0	0	1173	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1666						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1666						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	51	83	572	0	0	0	0	0	1275	228
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	0	38	0	655	0	0	0	0	0	1275	116
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.28	
v/s Ratio Perm			0.03		0.39							0.09
v/c Ratio			0.07		0.89						0.63	0.19
Uniform Delay, d1			14.3		22.9						19.2	15.1
Progression Factor			0.44		1.84						1.53	4.74
Incremental Delay, d2			0.2		10.7						1.3	0.6
Delay (s)			6.5		52.9						30.5	72.5
Level of Service			A		D						C	E
Approach Delay (s)		6.5			52.9			0.0			36.9	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	43	514	131	26	211	0	0	289	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1670	1403		3163			3080	
Flt Permitted					1.00	1.00		0.89			1.00	
Satd. Flow (perm)					1670	1403		2835			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	47	559	142	28	229	0	0	314	65
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	606	120	0	257	0	0	359	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					41.2	41.2		39.6			39.6	
Effective Green, g (s)					41.2	41.2		39.6			39.6	
Actuated g/C Ratio					0.46	0.46		0.44			0.44	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					764	642		1247			1355	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.36	0.09		0.09				
v/c Ratio					0.79	0.19		0.21			0.27	
Uniform Delay, d1					20.8	14.5		15.5			16.0	
Progression Factor					1.62	2.16		1.00			1.00	
Incremental Delay, d2					6.2	0.5		0.4			0.5	
Delay (s)					39.8	31.7		15.9			16.5	
Level of Service					D	C		B			B	
Approach Delay (s)		0.0			38.3			15.9			16.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	159	498	0	0	0	0	0	1530	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	173	541	0	0	0	0	0	1663	190
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	0	0	173	541	0	0	0	0	0	1663	102
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.32						c0.36	
v/s Ratio Perm				0.12								0.09
v/c Ratio				0.31	0.83						0.72	0.17
Uniform Delay, d1				19.0	24.6						17.4	12.1
Progression Factor				0.49	0.64						1.00	1.00
Incremental Delay, d2				0.6	4.8						2.0	0.6
Delay (s)				9.8	20.7						19.3	12.7
Level of Service				A	C						B	B
Approach Delay (s)		0.0			18.1			0.0			18.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	598	124	133	1072	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	650	135	145	1165	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	30	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	650	105	0	1293	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					655	513		2288				
v/s Ratio Prot					c0.39							
v/s Ratio Perm						0.08		0.28				
v/c Ratio					0.99	0.20		0.56				
Uniform Delay, d1					27.3	18.1		15.5				
Progression Factor					0.84	0.67		1.00				
Incremental Delay, d2					20.4	0.4		1.0				
Delay (s)					43.2	12.5		16.5				
Level of Service					D	B		B				
Approach Delay (s)		0.0			37.9			16.5			0.0	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	696	75	20	579	0	0	940	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1277	1593	3185			3185	1277
Flt Permitted					0.99	1.00	0.14	1.00			1.00	1.00
Satd. Flow (perm)					1657	1277	233	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	757	82	22	629	0	0	1022	75
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	854	69	22	629	0	0	1022	47
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					46.0	46.0	38.0	38.0			38.0	38.0
Effective Green, g (s)					46.0	46.0	38.0	38.0			38.0	38.0
Actuated g/C Ratio					0.51	0.51	0.42	0.42			0.42	0.42
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					846	652	98	1344			1344	539
v/s Ratio Prot								0.20			c0.32	
v/s Ratio Perm					0.52	0.05	0.09					0.04
v/c Ratio					1.01	0.11	0.22	0.47			0.76	0.09
Uniform Delay, d1					22.0	11.4	16.6	18.7			22.1	15.6
Progression Factor					1.35	1.75	1.00	1.00			1.51	2.62
Incremental Delay, d2					23.7	0.2	5.2	1.2			2.7	0.2
Delay (s)					53.4	20.0	21.8	19.9			36.2	41.1
Level of Service					D	C	C	B			D	D
Approach Delay (s)		0.0			50.4			20.0			36.5	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	37	591	53	66	889	0	0	657	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.71
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1635	998	1593	3185			1616	972
Flt Permitted					1.00	1.00	0.17	1.00			1.00	1.00
Satd. Flow (perm)					1635	998	283	3185			1616	972
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	40	642	58	72	966	0	0	714	240
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	0	682	23	72	966	0	0	714	224
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					654	399	139	1574			799	480
v/s Ratio Prot								0.30			c0.44	
v/s Ratio Perm					0.42	0.02	0.25					0.23
v/c Ratio					1.04	0.06	0.52	0.61			0.89	0.47
Uniform Delay, d1					27.0	16.6	15.5	16.5			20.6	15.0
Progression Factor					0.57	0.22	1.00	1.00			0.93	1.10
Incremental Delay, d2					44.6	0.2	13.1	1.8			9.3	1.9
Delay (s)					59.8	3.8	28.6	18.3			28.4	18.4
Level of Service					E	A	C	B			C	B
Approach Delay (s)		0.0			55.4			19.0			25.9	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	419	97	51	934	0	0	838	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.23	1.00			1.00	
Satd. Flow (perm)					3159	1425	393	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	455	105	55	1015	0	0	911	120
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	547	44	55	1015	0	0	1020	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	266	2158			2121	
v/s Ratio Prot								0.32			c0.33	
v/s Ratio Perm					0.17	0.03	0.14					
v/c Ratio					0.68	0.12	0.21	0.47			0.48	
Uniform Delay, d1					30.2	25.7	5.4	6.9			6.9	
Progression Factor					1.00	1.00	1.00	1.00			1.51	
Incremental Delay, d2					4.5	0.7	1.8	0.7			0.1	
Delay (s)					34.7	26.4	7.2	7.6			10.5	
Level of Service					C	C	A	A			B	
Approach Delay (s)		0.0			33.4			7.6			10.5	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	621	502	229	436	53	66	122	66	182	699	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1450	3185	1232	1580	4406		1587	3185	1220	1344	3084	
Flt Permitted	0.44	1.00	1.00	0.26	1.00		0.20	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	678	3185	1232	430	4406		332	3185	1220	945	3084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	675	546	249	474	58	72	133	72	198	760	88
RTOR Reduction (vph)	0	0	182	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	101	675	364	249	510	0	72	133	51	198	836	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Effective Green, g (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1051	406	358	2196		186	1096	573	230	753	
v/s Ratio Prot		0.21		c0.09	0.12		c0.02	0.04	0.01		c0.27	
v/s Ratio Perm	0.15		c0.30	0.26			0.11		0.03	0.21		
v/c Ratio	0.45	0.64	0.90	0.70	0.23		0.39	0.12	0.09	0.86	1.11	
Uniform Delay, d1	18.5	19.9	22.3	11.4	10.0		17.5	15.7	10.3	25.3	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	3.0	25.1	5.8	0.2		1.3	0.2	0.1	32.0	67.3	
Delay (s)	25.0	23.0	47.5	17.2	10.2		18.8	15.9	10.3	57.3	93.7	
Level of Service	C	C	D	B	B		B	B	B	E	F	
Approach Delay (s)		33.2			12.4			15.2			86.9	
Approach LOS		C			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	557	169	190	550	246	23	82	56	151	1171	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1539	3185	1050	3090	3185	1091	1593	3185	1150	1227	3185	1171
Flt Permitted	0.39	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	633	3185	1050	3090	3185	1091	227	3185	1150	899	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	605	184	207	598	267	25	89	61	164	1273	182
RTOR Reduction (vph)	0	0	79	0	0	116	0	0	16	0	0	46
Lane Group Flow (vph)	147	605	105	207	598	151	25	89	45	164	1273	136
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Effective Green, g (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Actuated g/C Ratio	0.47	0.38	0.38	0.13	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	384	1210	399	387	1312	449	74	1043	521	294	1043	493
v/s Ratio Prot	0.04	c0.19		c0.07	c0.19			0.03	0.01		c0.40	0.03
v/s Ratio Perm	0.15		0.10			0.14	0.11		0.03	0.18		0.09
v/c Ratio	0.38	0.50	0.26	0.53	0.46	0.34	0.34	0.09	0.09	0.56	1.22	0.28
Uniform Delay, d1	13.9	21.4	19.2	36.9	19.1	18.0	22.9	20.9	14.0	24.9	30.2	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.5	1.6	1.4	1.1	2.0	11.9	0.2	0.1	7.4	108.0	0.3
Delay (s)	14.5	22.8	20.8	38.3	20.3	20.1	34.8	21.1	14.1	32.3	138.3	17.4
Level of Service	B	C	C	D	C	C	C	C	B	C	F	B
Approach Delay (s)		21.1			23.7			20.6			113.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	61.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	571	177	165	754	232	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2086
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2086
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	192	179	820	252	324
RTOR Reduction (vph)	0	116	0	0	0	30
Lane Group Flow (vph)	621	76	179	820	252	294
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.7	27.7	11.7	42.9	17.3	29.0
Effective Green, g (s)	27.7	27.7	11.7	42.9	17.3	29.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1260	467	266	1951	763	864
v/s Ratio Prot	c0.19		c0.11	0.26	0.08	c0.06
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.49	0.16	0.67	0.42	0.33	0.34
Uniform Delay, d1	15.9	13.7	27.4	7.1	21.6	14.0
Progression Factor	1.00	1.00	1.06	2.04	1.00	1.00
Incremental Delay, d2	1.4	0.7	3.7	0.4	0.3	0.2
Delay (s)	17.3	14.4	32.7	14.8	21.9	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.6			18.0	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	594	115	105	842	85	51	237	65	60	1095	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1464	3185	1116	1508	3017		1555	3185	927
Flt Permitted	0.17	1.00	1.00	0.41	1.00	1.00	0.16	1.00		0.50	1.00	1.00
Satd. Flow (perm)	285	3185	1132	627	3185	1116	248	3017		812	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	646	125	114	915	92	55	258	71	65	1190	152
RTOR Reduction (vph)	0	0	51	0	0	65	0	34	0	0	0	83
Lane Group Flow (vph)	72	646	74	114	915	27	55	295	0	65	1190	69
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Effective Green, g (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.37	0.37		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	185	1246	443	182	928	325	92	1120		403	1456	423
v/s Ratio Prot	0.02	c0.20			c0.29			0.10		0.01	c0.37	
v/s Ratio Perm	0.13		0.07	0.18		0.02	0.22			0.07		0.07
v/c Ratio	0.39	0.52	0.17	0.63	0.99	0.08	0.60	0.26		0.16	0.82	0.16
Uniform Delay, d1	15.5	16.3	13.9	21.5	24.7	18.0	17.8	15.3		10.8	16.5	11.2
Progression Factor	0.98	0.72	0.66	0.99	1.03	3.72	2.05	2.46		1.00	1.00	1.00
Incremental Delay, d2	1.2	1.4	0.7	12.2	23.2	0.4	9.8	0.1		0.2	3.7	0.2
Delay (s)	16.5	13.2	9.8	33.5	48.5	67.4	46.2	37.8		11.0	20.2	11.3
Level of Service	B	B	A	C	D	E	D	D		B	C	B
Approach Delay (s)		13.0			48.5			39.0			18.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	547	81	55	744	152	31	336	54	56	536	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.89	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1581	3185	1049	1419	3185	1181	1563	4357		1426	2945	
Flt Permitted	0.23	1.00	1.00	0.43	1.00	1.00	0.18	1.00		0.48	1.00	
Satd. Flow (perm)	391	3185	1049	638	3185	1181	299	4357		726	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	595	88	60	809	165	34	365	59	61	583	268
RTOR Reduction (vph)	0	0	18	0	0	87	0	32	0	0	77	0
Lane Group Flow (vph)	121	595	70	60	809	78	34	392	0	61	774	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	1833	603	288	1442	534	93	1369		228	925	
v/s Ratio Prot	c0.03	0.19			c0.25			0.09			c0.26	
v/s Ratio Perm	0.19		0.07	0.09		0.07	0.11			0.08		
v/c Ratio	0.38	0.32	0.12	0.21	0.56	0.15	0.37	0.29		0.27	0.84	
Uniform Delay, d1	8.0	7.7	6.8	11.6	14.0	11.2	18.6	18.1		18.0	22.3	
Progression Factor	0.97	1.17	1.15	1.10	1.16	2.56	1.95	2.19		1.00	1.00	
Incremental Delay, d2	0.7	0.4	0.4	1.3	1.2	0.4	10.5	0.5		2.9	8.9	
Delay (s)	8.4	9.5	8.1	14.1	17.6	29.1	46.8	40.2		20.8	31.2	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		9.2			19.2			40.7			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	492	76	38	620	7	0	0	0	79	1078	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1578	3185	1249	1506	3173						4545	1255
Flt Permitted	0.25	1.00	1.00	0.45	1.00						1.00	1.00
Satd. Flow (perm)	410	3185	1249	718	3173						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	535	83	41	674	8	0	0	0	86	1172	375
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	74	535	62	41	681	0	0	0	0	0	1258	357
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	286	1446	567	233	1033						1785	600
v/s Ratio Prot	0.02	0.17			c0.21							c0.05
v/s Ratio Perm	0.10		0.05	0.06							0.28	0.23
v/c Ratio	0.26	0.37	0.11	0.18	0.66						0.70	0.60
Uniform Delay, d1	11.7	12.5	11.0	16.9	20.3						17.8	13.3
Progression Factor	1.52	1.46	1.85	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	0.7	0.4	1.6	3.3						2.4	1.6
Delay (s)	18.2	19.0	20.7	18.5	23.6						20.2	14.9
Level of Service	B	B	C	B	C						C	B
Approach Delay (s)		19.1			23.3			0.0			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	769	203	197	725	115	214	564	221	130	323	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1512	3185	1097	1593	4368		1544	3185	1229	1488	3043	
Flt Permitted	0.30	1.00	1.00	0.17	1.00		0.43	1.00	1.00	0.42	1.00	
Satd. Flow (perm)	478	3185	1097	283	4368		695	3185	1229	658	3043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	836	221	214	788	125	233	613	240	141	351	57
RTOR Reduction (vph)	0	0	146	0	24	0	0	0	15	0	15	0
Lane Group Flow (vph)	216	836	75	214	889	0	233	613	225	141	393	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	1079	371	229	1965		344	1362	621	222	1031	
v/s Ratio Prot		0.26		c0.07	0.20		c0.04	0.19	0.03		0.13	
v/s Ratio Perm	c0.45		0.07	0.35			c0.25		0.16	0.21		
v/c Ratio	1.34	0.77	0.20	0.93	0.45		0.68	0.45	0.36	0.64	0.38	
Uniform Delay, d1	29.8	26.7	21.1	19.6	17.1		20.2	18.2	13.5	25.1	22.6	
Progression Factor	1.00	1.00	1.00	1.96	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	189.4	5.4	1.2	33.4	0.5		5.2	1.1	0.4	13.1	1.1	
Delay (s)	219.1	32.1	22.3	71.8	13.5		25.5	19.3	13.8	38.1	23.7	
Level of Service	F	C	C	E	B		C	B	B	D	C	
Approach Delay (s)		62.1			24.6			19.4			27.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	719	139	200	877	488	33	579	128	60	846	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1589	3185	1190	3090	3185	1248	1514	3185	1316	1543	3185	1121
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	281	3185	1190	3090	3185	1248	229	3185	1316	497	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	782	151	217	953	530	36	629	139	65	920	147
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	267	782	103	217	953	482	36	629	122	65	920	130
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Effective Green, g (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270	1259	470	305	1256	492	77	1079	576	168	1079	491
v/s Ratio Prot	c0.10	0.25		0.07	0.30			0.20	0.02		c0.29	0.03
v/s Ratio Perm	c0.39		0.09			0.39	0.16		0.07	0.13		0.09
v/c Ratio	0.99	0.62	0.22	0.71	0.76	0.98	0.47	0.58	0.21	0.39	0.85	0.27
Uniform Delay, d1	17.0	21.8	18.0	39.3	23.5	26.9	23.4	24.5	15.7	22.6	27.7	16.0
Progression Factor	2.09	0.82	0.96	0.81	1.10	1.09	1.09	1.06	1.02	1.00	1.00	1.00
Incremental Delay, d2	43.3	1.7	0.8	6.4	3.6	32.3	18.2	2.2	0.2	6.6	8.6	0.3
Delay (s)	78.9	19.5	18.1	38.3	29.4	61.6	43.7	28.3	16.2	29.2	36.2	16.3
Level of Service	E	B	B	D	C	E	D	C	B	C	D	B
Approach Delay (s)		32.5			40.6			26.9			33.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	793	75	81	893	652	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2379
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	82	88	971	709	1008
RTOR Reduction (vph)	0	49	0	0	0	16
Lane Group Flow (vph)	862	33	88	971	709	992
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	35.7	35.7	15.4	54.6	25.6	41.0
Effective Green, g (s)	35.7	35.7	15.4	54.6	25.6	41.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.28	0.46
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1263	416	272	1932	878	1083
v/s Ratio Prot	c0.27		0.06	0.30	0.23	c0.16
v/s Ratio Perm		0.03				0.26
v/c Ratio	0.68	0.08	0.32	0.50	0.81	0.92
Uniform Delay, d1	22.5	16.9	32.7	10.0	29.9	22.9
Progression Factor	1.56	3.51	0.78	1.93	1.00	1.00
Incremental Delay, d2	2.5	0.3	0.5	0.7	5.5	11.8
Delay (s)	37.7	59.7	26.0	20.0	35.4	34.7
Level of Service	D	E	C	C	D	C
Approach Delay (s)	39.6			20.5	35.0	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1018	38	53	643	63	84	702	84	88	878	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00	0.93	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1143	1535	3185	1196	1474	3105		1590	3185	976
Flt Permitted	0.17	1.00	1.00	0.21	1.00	1.00	0.26	1.00		0.17	1.00	1.00
Satd. Flow (perm)	276	3185	1143	342	3185	1196	403	3105		280	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1107	41	58	699	68	91	763	91	96	954	162
RTOR Reduction (vph)	0	0	23	0	0	50	0	10	0	0	0	88
Lane Group Flow (vph)	272	1107	18	58	699	18	91	844	0	96	954	74
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	38.5	38.5	38.5	23.2	23.2	23.2	31.5	31.5		40.9	40.9	40.9
Effective Green, g (s)	38.5	38.5	38.5	23.2	23.2	23.2	31.5	31.5		40.9	40.9	40.9
Actuated g/C Ratio	0.43	0.43	0.43	0.26	0.26	0.26	0.35	0.35		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	297	1362	488	88	821	308	141	1086		220	1447	443
v/s Ratio Prot	c0.13	0.35			0.22			c0.27		0.03	c0.30	
v/s Ratio Perm	c0.27		0.02	0.17		0.01	0.23			0.17		0.08
v/c Ratio	0.92	0.81	0.04	0.66	0.85	0.06	0.65	0.78		0.44	0.66	0.17
Uniform Delay, d1	19.9	22.6	15.0	29.9	31.8	25.2	24.6	26.1		16.2	19.1	14.5
Progression Factor	1.11	1.10	0.91	0.90	0.95	3.90	1.53	1.49		1.00	1.00	1.00
Incremental Delay, d2	21.1	3.2	0.1	27.0	8.9	0.3	7.0	2.5		1.4	1.1	0.2
Delay (s)	43.2	28.1	13.7	53.9	39.1	98.5	44.5	41.4		17.6	20.2	14.7
Level of Service	D	C	B	D	D	F	D	D		B	C	B
Approach Delay (s)		30.6			45.1			41.7			19.3	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1093	81	45	719	78	60	562	125	80	426	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.92	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	834	1470	3185	1050	1536	4287		1500	2926	
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.25	1.00		0.27	1.00	
Satd. Flow (perm)	374	3185	834	367	3185	1050	410	4287		428	2926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1188	88	49	782	85	65	611	136	87	463	198
RTOR Reduction (vph)	0	0	29	0	0	50	0	24	0	0	53	0
Lane Group Flow (vph)	266	1188	59	49	782	35	65	723	0	87	608	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1886	493	152	1327	437	132	1381		137	942	
v/s Ratio Prot	c0.10	0.37			0.25			0.17			c0.21	
v/s Ratio Perm	c0.30		0.07	0.13		0.03	0.16			0.20		
v/c Ratio	0.68	0.63	0.12	0.32	0.59	0.08	0.49	0.52		0.64	0.65	
Uniform Delay, d1	11.2	11.9	8.0	17.7	20.3	15.8	24.6	24.9		26.0	26.1	
Progression Factor	1.36	1.64	1.97	0.59	0.62	0.69	1.08	1.14		1.00	1.00	
Incremental Delay, d2	3.6	1.2	0.4	4.8	1.7	0.3	12.3	1.4		20.3	3.4	
Delay (s)	18.8	20.9	16.3	15.3	14.4	11.2	38.9	29.8		46.3	29.5	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		20.2			14.1			30.5			31.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	1106	52	36	668	6	0	0	0	87	578	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1574	3185	1027	1525	3174						4468	1265
Flt Permitted	0.26	1.00	1.00	0.19	1.00						0.99	1.00
Satd. Flow (perm)	424	3185	1027	310	3174						4468	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1202	57	39	726	7	0	0	0	95	628	195
RTOR Reduction (vph)	0	0	19	0	1	0	0	0	0	0	0	24
Lane Group Flow (vph)	110	1202	38	39	732	0	0	0	0	0	723	171
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Effective Green, g (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	331	1691	545	125	1287						1563	559
v/s Ratio Prot	0.03	c0.38			0.23							0.03
v/s Ratio Perm	0.15		0.04	0.13							0.16	0.11
v/c Ratio	0.33	0.71	0.07	0.31	0.57						0.46	0.31
Uniform Delay, d1	11.7	15.9	10.3	18.2	20.7						22.7	16.2
Progression Factor	1.21	1.04	1.76	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	2.0	0.2	6.4	1.8						1.0	0.3
Delay (s)	14.6	18.6	18.3	24.6	22.5						23.7	16.5
Level of Service	B	B	B	C	C						C	B
Approach Delay (s)		18.2			22.6			0.0			22.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix H
Opening Year (2020) With 9th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	621	502	229	436	53	66	122	66	182	699	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1450	3185	1232	1580	4406		1587	3185	1220	1344	3084	
Flt Permitted	0.44	1.00	1.00	0.26	1.00		0.20	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	678	3185	1232	430	4406		332	3185	1220	945	3084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	675	546	249	474	58	72	133	72	198	760	88
RTOR Reduction (vph)	0	0	182	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	101	675	364	249	510	0	72	133	51	198	836	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Effective Green, g (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1051	406	358	2196		186	1096	573	230	753	
v/s Ratio Prot		0.21		c0.09	0.12		c0.02	0.04	0.01		c0.27	
v/s Ratio Perm	0.15		c0.30	0.26			0.11		0.03	0.21		
v/c Ratio	0.45	0.64	0.90	0.70	0.23		0.39	0.12	0.09	0.86	1.11	
Uniform Delay, d1	18.5	19.9	22.3	11.4	10.0		17.5	15.7	10.3	25.3	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	3.0	25.1	5.8	0.2		1.3	0.2	0.1	32.0	67.3	
Delay (s)	25.0	23.0	47.5	17.2	10.2		18.8	15.9	10.3	57.3	93.7	
Level of Service	C	C	D	B	B		B	B	B	E	F	
Approach Delay (s)		33.2			12.4			15.2			86.9	
Approach LOS		C			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	557	169	229	550	246	23	82	95	151	1171	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1540	3185	1010	3090	3185	1055	1593	3185	1425	1186	3185	1126
Flt Permitted	0.36	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	584	3185	1010	3090	3185	1055	197	3185	1425	869	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	605	184	249	598	267	25	89	103	164	1273	182
RTOR Reduction (vph)	0	0	138	0	0	100	0	0	93	0	0	51
Lane Group Flow (vph)	147	605	46	249	598	167	25	89	10	164	1273	131
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.8	24.8	24.8	10.7	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	789	250	330	1226	406	66	1082	142	295	1082	461
v/s Ratio Prot	0.04	c0.19		c0.08	c0.19			0.03	0.01		c0.40	0.02
v/s Ratio Perm	0.14		0.05			0.16	0.13			0.19		0.10
v/c Ratio	0.58	0.77	0.18	0.75	0.49	0.41	0.38	0.08	0.07	0.56	1.18	0.28
Uniform Delay, d1	25.9	34.9	29.6	43.4	23.3	22.5	25.0	22.4	40.8	26.9	33.0	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	7.0	1.6	9.4	0.3	0.7	15.7	0.1	0.2	7.4	89.3	0.3
Delay (s)	29.3	41.9	31.2	52.8	23.6	23.1	40.7	22.6	41.0	34.2	122.3	20.0
Level of Service	C	D	C	D	C	C	D	C	D	C	F	C
Approach Delay (s)		37.9			30.0			33.4			101.9	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	610	177	165	793	232	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2086
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2086
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	663	192	179	862	252	324
RTOR Reduction (vph)	0	116	0	0	0	24
Lane Group Flow (vph)	663	76	179	862	252	300
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.7	27.7	11.7	42.9	17.3	29.0
Effective Green, g (s)	27.7	27.7	11.7	42.9	17.3	29.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1260	467	266	1951	763	864
v/s Ratio Prot	c0.21		c0.11	0.27	0.08	c0.06
v/s Ratio Perm		0.06				0.09
v/c Ratio	0.53	0.16	0.67	0.44	0.33	0.35
Uniform Delay, d1	16.1	13.7	27.4	7.2	21.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.7	6.6	0.7	0.3	0.2
Delay (s)	17.7	14.4	33.9	7.9	21.9	14.3
Level of Service	B	B	C	A	C	B
Approach Delay (s)	17.0			12.4	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	633	115	105	842	85	90	237	26	60	1095	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00		0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1444	3185	1034	1593	3101		1528	3185	885
Flt Permitted	0.13	1.00	1.00	0.36	1.00	1.00	0.95	1.00		0.58	1.00	1.00
Satd. Flow (perm)	222	3185	1053	553	3185	1034	1593	3101		927	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	688	125	114	915	92	98	258	28	65	1190	152
RTOR Reduction (vph)	0	0	78	0	0	64	0	9	0	0	0	86
Lane Group Flow (vph)	72	688	48	114	915	28	98	277	0	65	1190	66
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	167	962	312	159	1316		409	1174	326
v/s Ratio Prot	0.02	c0.22			c0.29		c0.06	0.09		0.01	c0.37	
v/s Ratio Perm	0.17		0.05	0.21		0.03				0.06		0.07
v/c Ratio	0.50	0.57	0.12	0.68	0.95	0.09	0.62	0.21		0.16	1.01	0.20
Uniform Delay, d1	20.8	22.1	18.1	27.6	30.7	22.5	38.8	16.4		16.2	28.4	19.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.7	1.9	0.6	20.3	19.4	0.6	6.9	0.1		0.2	29.7	0.3
Delay (s)	23.4	24.0	18.7	47.9	50.1	23.1	45.8	16.5		16.4	58.1	19.7
Level of Service	C	C	B	D	D	C	D	B		B	E	B
Approach Delay (s)		23.2			47.7			23.9			52.0	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	547	81	55	744	152	31	336	54	56	536	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.89	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1581	3185	1049	1419	3185	1181	1563	4357		1426	2945	
Flt Permitted	0.23	1.00	1.00	0.43	1.00	1.00	0.18	1.00		0.48	1.00	
Satd. Flow (perm)	391	3185	1049	638	3185	1181	299	4357		726	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	595	88	60	809	165	34	365	59	61	583	268
RTOR Reduction (vph)	0	0	18	0	0	87	0	32	0	0	77	0
Lane Group Flow (vph)	121	595	70	60	809	78	34	392	0	61	774	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	1833	603	288	1442	534	93	1369		228	925	
v/s Ratio Prot	c0.03	0.19			c0.25			0.09			c0.26	
v/s Ratio Perm	0.19		0.07	0.09		0.07	0.11			0.08		
v/c Ratio	0.38	0.32	0.12	0.21	0.56	0.15	0.37	0.29		0.27	0.84	
Uniform Delay, d1	8.0	7.7	6.8	11.6	14.0	11.2	18.6	18.1		18.0	22.3	
Progression Factor	1.00	1.00	1.00	1.10	1.16	2.56	1.95	2.19		1.00	1.00	
Incremental Delay, d2	0.8	0.5	0.4	1.3	1.2	0.4	10.5	0.5		2.9	8.9	
Delay (s)	8.7	8.2	7.1	14.1	17.6	29.1	46.8	40.2		20.8	31.2	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		8.2			19.2			40.7			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	492	76	38	620	7	0	0	0	79	1078	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1578	3185	1249	1506	3173						4545	1255
Flt Permitted	0.25	1.00	1.00	0.45	1.00						1.00	1.00
Satd. Flow (perm)	410	3185	1249	718	3173						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	535	83	41	674	8	0	0	0	86	1172	375
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	74	535	62	41	681	0	0	0	0	0	1258	357
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	286	1446	567	233	1033						1785	600
v/s Ratio Prot	0.02	0.17			c0.21							c0.05
v/s Ratio Perm	0.10		0.05	0.06							0.28	0.23
v/c Ratio	0.26	0.37	0.11	0.18	0.66						0.70	0.60
Uniform Delay, d1	11.7	12.5	11.0	16.9	20.3						17.8	13.3
Progression Factor	1.27	1.19	1.48	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	0.7	0.4	1.6	3.3						2.4	1.6
Delay (s)	15.2	15.6	16.6	18.5	23.6						20.2	14.9
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		15.7			23.3			0.0			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	5	15	49	56	79	11	58	6	37	1190	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.89		1.00	0.91		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2755		1593	2872		1580	3108		1473	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1593	2755		1593	2872		193	3108		1099	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	5	16	53	61	86	12	63	7	40	1293	324
RTOR Reduction (vph)	0	12	0	0	67	0	0	4	0	0	0	84
Lane Group Flow (vph)	29	9	0	53	80	0	12	66	0	40	1293	240
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Effective Green, g (s)	5.4	17.9		3.0	15.5		34.4	34.4		34.4	34.4	39.8
Actuated g/C Ratio	0.08	0.26		0.04	0.22		0.49	0.49		0.49	0.49	0.57
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	122	704		68	635		94	1527		540	1565	739
v/s Ratio Prot	0.02	0.00		c0.03	c0.03			0.02			c0.41	0.03
v/s Ratio Perm							0.06			0.04		0.16
v/c Ratio	0.24	0.01		0.78	0.13		0.13	0.04		0.07	0.83	0.32
Uniform Delay, d1	30.4	19.5		33.2	21.8		9.7	9.3		9.4	15.2	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.51	1.49		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0		41.9	0.1		2.8	0.1		0.3	5.1	0.3
Delay (s)	31.4	19.5		75.1	21.9		17.3	13.8		9.7	20.4	8.2
Level of Service	C	B		E	C		B	B		A	C	A
Approach Delay (s)		26.4			36.0			14.3			17.7	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	426	0	102	29	78	370	52	20	1128	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.98		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.98	1.00		0.90	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3009		1567	3049		1439	3185	1239
Flt Permitted		1.00	1.00		1.00		0.13	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1676	1326		3009		220	3049		737	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	432	463	0	111	32	85	402	57	22	1226	135
RTOR Reduction (vph)	0	0	24	0	21	0	0	16	0	0	0	68
Lane Group Flow (vph)	0	432	439	0	122	0	85	443	0	22	1226	67
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Effective Green, g (s)		25.0	25.0		25.0		34.6	34.6		34.6	34.6	34.6
Actuated g/C Ratio		0.36	0.36		0.36		0.49	0.49		0.49	0.49	0.49
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		598	473		1074		108	1507		364	1574	612
v/s Ratio Prot		0.26			0.04			0.15			0.38	
v/s Ratio Perm			c0.33				c0.39			0.03		0.05
v/c Ratio		0.72	0.93		0.11		0.79	0.29		0.06	0.78	0.11
Uniform Delay, d1		19.5	21.6		15.1		14.7	10.5		9.2	14.6	9.5
Progression Factor		1.00	1.00		1.53		1.41	1.46		1.00	1.00	1.00
Incremental Delay, d2		7.4	26.9		0.2		36.7	0.4		0.3	3.9	0.4
Delay (s)		26.9	48.6		23.3		57.5	15.7		9.5	18.4	9.8
Level of Service		C	D		C		E	B		A	B	A
Approach Delay (s)		38.1			23.3			22.2			17.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	558	74	0	389	39	53	350	130	0	631	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2882			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	216	2882			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	607	80	0	423	42	58	380	141	0	686	0
RTOR Reduction (vph)	0	0	51	0	0	27	0	14	0	0	0	0
Lane Group Flow (vph)	0	607	29	0	423	15	58	507	0	0	686	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		25.1	25.1		25.1	25.1	34.5	34.5			25.6	
Effective Green, g (s)		25.1	25.1		25.1	25.1	34.5	34.5			25.6	
Actuated g/C Ratio		0.36	0.36		0.36	0.36	0.49	0.49			0.37	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		600	409		600	473	175	1420			590	
v/s Ratio Prot		c0.36			0.25		0.02	c0.18			c0.42	
v/s Ratio Perm			0.03			0.01	0.15					
v/c Ratio		1.01	0.07		0.70	0.03	0.33	0.36			1.16	
Uniform Delay, d1		22.4	14.8		19.3	14.6	25.6	10.9			22.2	
Progression Factor		0.81	2.06		1.02	1.00	1.79	1.51			0.47	
Incremental Delay, d2		37.6	0.3		5.5	0.1	1.0	0.1			86.0	
Delay (s)		55.8	30.8		25.1	14.7	46.9	16.7			96.5	
Level of Service		E	C		C	B	D	B			F	
Approach Delay (s)		52.8			24.2			19.7			96.5	
Approach LOS		D			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	51.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	356	312	107	358	0	0	0	0	27	1155	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.93	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1476	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.35	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	542	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	387	339	116	389	0	0	0	0	29	1255	100
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	46
Lane Group Flow (vph)	0	387	324	116	389	0	0	0	0	29	1255	54
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	179	555					721	1706	362
v/s Ratio Prot		0.23			0.23						c0.39	
v/s Ratio Perm			c0.27	0.21						0.02		0.08
v/c Ratio		0.70	0.83	0.65	0.70					0.04	0.74	0.15
Uniform Delay, d1		20.3	21.6	19.9	20.4					7.7	12.5	8.2
Progression Factor		0.84	0.89	1.00	1.00					0.28	0.30	0.00
Incremental Delay, d2		4.0	10.8	16.7	7.2					0.1	2.3	0.7
Delay (s)		21.1	30.1	36.7	27.6					2.2	6.0	0.7
Level of Service		C	C	D	C					A	A	A
Approach Delay (s)		25.3			29.7			0.0			5.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	23	56	19	60	1127	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.96	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1530	3185	3185	993
Flt Permitted	0.95	1.00	0.18	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	290	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	61	21	65	1225	183
RTOR Reduction (vph)	0	7	0	0	0	45
Lane Group Flow (vph)	25	54	21	65	1225	138
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.2	16.2	44.1	44.1	44.1	44.1
Effective Green, g (s)	16.2	16.2	44.1	44.1	44.1	44.1
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	492	182	2006	2006	625
v/s Ratio Prot				0.02	c0.38	
v/s Ratio Perm	0.02	c0.03	0.07			0.14
v/c Ratio	0.07	0.11	0.12	0.03	0.61	0.22
Uniform Delay, d1	21.0	21.2	5.2	4.9	7.8	5.6
Progression Factor	1.00	1.00	1.00	1.00	0.15	0.00
Incremental Delay, d2	0.1	0.1	1.3	0.0	0.9	0.5
Delay (s)	21.1	21.3	6.5	4.9	2.0	0.6
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.3	1.9	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1414	172	58	456	0	0	1104	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3109		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3109		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1537	187	63	496	0	0	1200	229
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	107	1711	0	63	496	0	0	1200	223
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.55			0.16			c0.38	
v/s Ratio Perm				0.07			0.28					0.18
v/c Ratio				0.15	1.13		0.66	0.36			0.88	0.43
Uniform Delay, d1				10.0	18.0		15.9	13.5			18.3	14.0
Progression Factor				2.01	1.84		0.96	0.89			0.97	0.88
Incremental Delay, d2				0.0	60.7		27.7	0.7			4.8	1.4
Delay (s)				20.1	93.8		43.0	12.7			22.6	13.6
Level of Service				C	F		D	B			C	B
Approach Delay (s)		0.0			89.5			16.1			21.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	15	1608	58	80	438	0	0	317	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3141			1616	1254
Flt Permitted				0.95	1.00	1.00		0.84			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2660			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	1748	63	87	476	0	0	345	309
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	84
Lane Group Flow (vph)	0	0	0	16	1748	25	0	563	0	0	345	225
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1235			750	582
v/s Ratio Prot					c0.55						c0.21	
v/s Ratio Perm				0.01		0.02		0.21				0.18
v/c Ratio				0.03	1.36	0.05		0.46			0.46	0.39
Uniform Delay, d1				12.6	20.9	12.7		12.7			12.8	12.2
Progression Factor				1.91	1.74	6.21		0.76			0.24	0.19
Incremental Delay, d2				0.0	165.3	0.1		0.2			0.2	0.2
Delay (s)				24.1	201.7	79.1		9.9			3.3	2.5
Level of Service				C	F	E		A			A	A
Approach Delay (s)		0.0			195.9			9.9			2.9	
Approach LOS		A			F			A			A	

Intersection Summary			
HCM 2000 Control Delay	120.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	439	1353	0	0	0	0	0	1075	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	477	1471	0	0	0	0	0	1168	183
RTOR Reduction (vph)	0	0	0	16	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	461	1471	0	0	0	0	0	1168	167
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.46						c0.26	
v/s Ratio Perm				0.32								0.14
v/c Ratio				0.74	1.07						0.59	0.31
Uniform Delay, d1				16.6	19.9						15.1	13.0
Progression Factor				1.00	1.00						0.81	0.88
Incremental Delay, d2				7.7	45.6						0.8	1.0
Delay (s)				24.3	65.5						13.1	12.4
Level of Service				C	E						B	B
Approach Delay (s)		0.0			55.4			0.0			13.0	
Approach LOS		A			E			A			B	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	574	1293	0	0	39	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	624	1405	0	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	624	1405	0	0	42	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.8	59.3			4.2	
Effective Green, g (s)	39.8	59.3			4.2	
Actuated g/C Ratio	0.57	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1756	5752			185	
v/s Ratio Prot	c0.20	c0.21				
v/s Ratio Perm					c0.01	
v/c Ratio	0.36	0.24			0.23	
Uniform Delay, d1	8.2	1.0			31.4	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.6	0.1			0.6	
Delay (s)	8.7	1.1			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.5	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	216	879	168	0	0	0	0	690	101	56	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4449		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4449		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	955	183	0	0	0	0	750	110	61	230	0
RTOR Reduction (vph)	0	0	111	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	235	955	72	0	0	0	0	835	0	61	230	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1588		158	780	
v/s Ratio Prot		0.17						c0.19		0.02	c0.14	
v/s Ratio Perm	c0.21		0.05									
v/c Ratio	0.54	0.42	0.14					0.53		0.39	0.29	
Uniform Delay, d1	16.4	15.5	13.6					17.8		32.1	11.6	
Progression Factor	1.23	1.16	2.15					1.09		1.00	1.00	
Incremental Delay, d2	4.7	0.6	0.6					1.1		1.6	1.0	
Delay (s)	24.8	18.5	29.9					20.6		33.7	12.5	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		21.1			0.0			20.6			17.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	762	138	0	0	0	0	481	72	147	1066	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.94	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5470						3052		1490	3185	
Flt Permitted		0.99						1.00		0.37	1.00	
Satd. Flow (perm)		5470						3052		574	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	828	150	0	0	0	0	523	78	160	1159	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	1110	0	0	0	0	0	584	0	160	1159	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1351		254	1410	
v/s Ratio Prot								0.19			c0.36	
v/s Ratio Perm		0.20								0.28		
v/c Ratio		0.46						0.43		0.63	0.82	
Uniform Delay, d1		13.6						13.4		15.1	17.1	
Progression Factor		1.16						1.64		0.92	0.98	
Incremental Delay, d2		0.6						1.0		6.5	3.2	
Delay (s)		16.3						23.0		20.3	19.9	
Level of Service		B						C		C	B	
Approach Delay (s)		16.3			0.0			23.0			19.9	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	811	73	0	0	0	0	443	90	0	408	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5408						2938			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5408						2938			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	882	79	0	0	0	0	482	98	0	443	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	1033	0	0	0	0	0	555	0	0	443	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2704						1036			570	
v/s Ratio Prot								0.19			c0.27	
v/s Ratio Perm		0.19										
v/c Ratio		0.38						0.54			0.78	
Uniform Delay, d1		10.8						18.1			20.2	
Progression Factor		1.81						1.21			0.95	
Incremental Delay, d2		0.4						1.6			9.6	
Delay (s)		20.0						23.5			28.7	
Level of Service		B						C			C	
Approach Delay (s)		20.0			0.0			23.5			28.7	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	661	164	0	0	0	0	0	0	121	1215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5397									4509	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5397									4509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	718	178	0	0	0	0	0	0	132	1321	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	893	0	0	0	0	0	0	0	0	1435	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.17										
v/s Ratio Perm											0.32	
v/c Ratio		0.33									0.87	
Uniform Delay, d1		10.4									20.8	
Progression Factor		1.63									0.89	
Incremental Delay, d2		0.3									5.4	
Delay (s)		17.2									23.7	
Level of Service		B									C	
Approach Delay (s)		17.2			0.0			0.0			23.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	372	1195	205	0	0	0	0	772	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5634						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5634						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	404	1299	223	0	0	0	0	839	201
RTOR Reduction (vph)	0	0	0	46	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	269	1556	0	0	0	0	0	839	183
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2414						1961	415
v/s Ratio Prot											0.18	
v/s Ratio Perm				c0.30	0.28							c0.19
v/c Ratio				0.70	0.64						0.43	0.44
Uniform Delay, d1				16.3	15.8						14.0	14.1
Progression Factor				1.00	0.91						1.00	1.00
Incremental Delay, d2				7.1	0.9						0.7	3.4
Delay (s)				23.4	15.2						14.7	17.5
Level of Service				C	B						B	B
Approach Delay (s)		0.0			16.5			0.0			15.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1253	109	361	787	0	0	0	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5534		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5534		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1362	118	392	855	0	0	0	209
RTOR Reduction (vph)	0	0	0	0	20	0	290	0	0	0	0	193
Lane Group Flow (vph)	0	0	0	0	1460	0	102	855	0	0	0	16
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.26		0.03	c0.19				
v/s Ratio Perm												c0.01
v/c Ratio					0.98		0.13	0.39				0.08
Uniform Delay, d1					25.3		19.8	11.6				29.9
Progression Factor					1.57		1.41	0.99				1.00
Incremental Delay, d2					16.0		0.3	0.4				0.2
Delay (s)					55.8		28.3	12.0				30.1
Level of Service					E		C	B				C
Approach Delay (s)		0.0			55.8			17.1			30.1	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	83	1257	88	58	411	0	0	960	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5586		1518	3185			3185	960
Flt Permitted				0.95	1.00		0.17	1.00			1.00	1.00
Satd. Flow (perm)				1004	5586		267	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	90	1366	96	63	447	0	0	1043	250
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	90	1447	0	63	447	0	0	1043	233
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2314		119	1419			1419	427
v/s Ratio Prot					c0.26			0.14			c0.33	
v/s Ratio Perm				0.09			0.24					0.24
v/c Ratio				0.22	0.63		0.53	0.32			0.74	0.55
Uniform Delay, d1				13.2	16.2		14.1	12.5			16.0	14.2
Progression Factor				0.27	0.37		1.02	0.91			0.48	0.32
Incremental Delay, d2				1.0	1.1		15.7	0.6			2.1	3.0
Delay (s)				4.6	7.0		30.1	12.0			9.8	7.5
Level of Service				A	A		C	B			A	A
Approach Delay (s)		0.0			6.9			14.2			9.4	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	22	1245	69	42	634	0	0	315	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5570			3175			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5570			2907			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	24	1353	75	46	689	0	0	342	103
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1441	0	0	735	0	0	342	86
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1266			704	429
v/s Ratio Prot											0.21	
v/s Ratio Perm					0.26			c0.25				0.09
v/c Ratio					0.60			0.58			0.49	0.20
Uniform Delay, d1					15.4			14.9			14.1	12.2
Progression Factor					0.69			0.47			0.38	0.22
Incremental Delay, d2					1.1			1.8			1.6	0.7
Delay (s)					11.7			8.7			7.0	3.4
Level of Service					B			A			A	A
Approach Delay (s)		0.0			11.7			8.7			6.2	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	804	0	0	0	0	0	1291	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	874	0	0	0	0	0	1403	335
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	0	0	0	978	0	0	0	0	0	1403	293
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.31	
v/s Ratio Perm					0.17							0.21
v/c Ratio					0.39						0.70	0.47
Uniform Delay, d1					13.6						16.1	14.0
Progression Factor					1.00						1.10	1.08
Incremental Delay, d2					0.5						1.5	1.8
Delay (s)					14.0						19.2	17.0
Level of Service					B						B	B
Approach Delay (s)		0.0			14.0			0.0			18.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1263	237	0	0	0	0	0	0	129	1133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1373	258	0	0	0	0	0	0	140	1232	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1373	244	0	0	0	0	0	0	0	1357	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.24										
v/s Ratio Perm			c0.24								0.24	
v/c Ratio		0.55	0.56								0.56	
Uniform Delay, d1		14.8	14.9								14.8	
Progression Factor		1.00	1.00								1.64	
Incremental Delay, d2		0.9	5.2								0.8	
Delay (s)		15.7	20.1								25.0	
Level of Service		B	C								C	
Approach Delay (s)		16.4			0.0			0.0			25.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	409	989	0	0	0	0	0	1156	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6365				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6365				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	1075	0	0	0	0	0	1257	197	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	279	1211	0	0	0	0	0	1432	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2755				
v/s Ratio Prot								c0.23				
v/s Ratio Perm	c0.30	0.23										
v/c Ratio	0.70	0.54						0.52				
Uniform Delay, d1	16.2	14.7						14.5				
Progression Factor	0.25	0.21						1.70				
Incremental Delay, d2	8.2	0.8						0.6				
Delay (s)	12.3	3.8						25.4				
Level of Service	B	A						C				
Approach Delay (s)		5.5			0.0			25.4			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	182	0	0	0	0	342	91	145	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5594						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.50	1.00	
Satd. Flow (perm)		5594						3185	1425	844	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	198	0	0	0	0	372	99	158	939	0
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	0	951	0	0	0	0	0	372	45	158	939	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	385	2092	
v/s Ratio Prot		c0.17						0.12			c0.21	
v/s Ratio Perm									0.03	0.19		
v/c Ratio		0.37						0.26	0.07	0.41	0.45	
Uniform Delay, d1		12.4						11.7	10.7	12.7	13.0	
Progression Factor		0.49						0.93	1.33	0.82	0.83	
Incremental Delay, d2		0.4						0.4	0.2	2.3	0.5	
Delay (s)		6.4						11.3	14.4	12.6	11.3	
Level of Service		A						B	B	B	B	
Approach Delay (s)		6.4			0.0			11.9			11.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	800	61	0	0	0	0	601	62	0	332	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5501						3107			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5501						3107			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	870	66	0	0	0	0	653	67	0	361	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	998	0	0	0	0	0	716	0	0	361	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1964						1540			801	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.18										
v/c Ratio		0.51						0.46			0.45	
Uniform Delay, d1		17.7						11.6			11.5	
Progression Factor		0.43						1.85			2.33	
Incremental Delay, d2		0.9						0.8			1.6	
Delay (s)		8.4						22.2			28.3	
Level of Service		A						C			C	
Approach Delay (s)		8.4			0.0			22.2			28.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	792	73	0	0	0	0	0	0	97	1179	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4560	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4560	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	861	79	0	0	0	0	0	0	105	1282	0
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	929	0	0	0	0	0	0	0	0	1372	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.16										
v/s Ratio Perm											0.30	
v/c Ratio		0.38									0.69	
Uniform Delay, d1		13.5									15.9	
Progression Factor		0.17									0.71	
Incremental Delay, d2		0.4									1.5	
Delay (s)		2.7									12.8	
Level of Service		A									B	
Approach Delay (s)		2.7			0.0			0.0			12.8	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	253	0	0	399	115	323	1313	94	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	275	0	0	434	125	351	1427	102	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	120	0	0	80	0	0	0
Lane Group Flow (vph)	98	275	0	0	434	6	351	1427	22	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Effective Green, g (s)	7.3	61.8			50.5	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.07	0.62			0.50	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	225	1089			1786	62	342	984	295			
v/s Ratio Prot	c0.03	c0.01			0.01	0.00		c0.31				
v/s Ratio Perm		0.16			0.13		0.22		0.02			
v/c Ratio	0.44	0.25			0.24	0.09	1.03	1.45	0.07			
Uniform Delay, d1	44.4	8.6			14.0	45.9	39.2	39.2	31.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.4	0.1			0.1	0.6	55.6	208.3	0.5			
Delay (s)	45.7	8.8			14.0	46.5	94.8	247.6	31.8			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.5			21.3			207.3			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	145.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	224	172	86	396	0	0	0	0	159	904	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.96						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3042						5095	
Flt Permitted		1.00	1.00		0.84						0.99	
Satd. Flow (perm)		1676	971		2577						5095	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	243	187	93	430	0	0	0	0	173	983	108
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	243	175	0	523	0	0	0	0	0	1247	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1205						2162	
v/s Ratio Prot		0.14										
v/s Ratio Perm			0.18		c0.20						0.24	
v/c Ratio		0.31	0.39		0.43						0.58	
Uniform Delay, d1		14.9	15.6		16.0						19.7	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.0	2.5		1.1						1.1	
Delay (s)		15.9	18.0		17.1						20.9	
Level of Service		B	B		B						C	
Approach Delay (s)		16.8			17.1			0.0			20.9	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	253	53	0	457	95	55	358	65	26	220	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2805			2973	
Flt Permitted		1.00	1.00		1.00	1.00		0.89			0.89	
Satd. Flow (perm)		1616	949		3185	775		2500			2670	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	275	58	0	497	103	60	389	71	28	239	26
RTOR Reduction (vph)	0	0	30	0	0	19	0	18	0	0	1	0
Lane Group Flow (vph)	0	275	28	0	497	84	0	502	0	0	292	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1071			1144	
v/s Ratio Prot		c0.17			0.16							
v/s Ratio Perm			0.03			0.11		c0.20			0.11	
v/c Ratio		0.35	0.06		0.32	0.22		0.47			0.26	
Uniform Delay, d1		11.2	9.5		11.0	10.4		14.3			12.8	
Progression Factor		1.00	1.00		0.14	0.04		1.35			1.00	
Incremental Delay, d2		1.2	0.3		0.4	1.1		1.3			0.5	
Delay (s)		12.4	9.8		1.9	1.5		20.7			13.4	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		11.9			1.8			20.7			13.4	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	263	92	50	467	0	0	0	0	123	803	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.53	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	896	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	286	100	54	508	0	0	0	0	134	873	84
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	286	83	54	508	0	0	0	0	134	873	47
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	384	718					513	1369	445
v/s Ratio Prot		0.17			c0.30						c0.27	
v/s Ratio Perm			0.09	0.06						0.11		0.05
v/c Ratio		0.40	0.20	0.14	0.71					0.26	0.64	0.11
Uniform Delay, d1		13.8	12.5	12.2	16.4					12.8	15.7	11.9
Progression Factor		0.78	0.77	1.74	1.73					0.88	0.70	1.04
Incremental Delay, d2		1.6	1.1	0.6	4.4					1.0	1.9	0.4
Delay (s)		12.3	10.7	21.7	32.7					12.3	12.9	12.8
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		11.9			31.6			0.0			12.9	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	430	0	0	410	177	77	1183	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5468				
Flt Permitted	0.30	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	511	1676			1676	976		5468				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	467	0	0	446	192	84	1286	75	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	11	0	0	0	0
Lane Group Flow (vph)	34	467	0	0	446	174	0	1434	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	184	605			605	352		2749				
v/s Ratio Prot		c0.28			0.27							
v/s Ratio Perm	0.07					0.18		0.26				
v/c Ratio	0.18	0.77			0.74	0.49		0.52				
Uniform Delay, d1	15.3	19.8			19.5	17.4		11.7				
Progression Factor	0.75	0.76			1.35	1.48		0.53				
Incremental Delay, d2	2.1	9.0			5.0	3.1		0.5				
Delay (s)	13.6	24.1			31.3	28.9		6.7				
Level of Service	B	C			C	C		A				
Approach Delay (s)		23.3			30.6			6.7			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	276	51	22	492	46	0	427	57	0	856	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.94			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2933			2950	
Flt Permitted	0.24	1.00	1.00	0.47	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	394	1676	929	794	1676	961		2933			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	300	55	24	535	50	0	464	62	0	930	137
RTOR Reduction (vph)	0	0	17	0	0	29	0	14	0	0	12	0
Lane Group Flow (vph)	23	300	38	24	535	21	0	513	0	0	1056	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	163	694	384	328	694	398		1466			1475	
v/s Ratio Prot		0.18			c0.32			0.17			c0.36	
v/s Ratio Perm	0.06		0.04	0.03		0.02						
v/c Ratio	0.14	0.43	0.10	0.07	0.77	0.05		0.35			0.72	
Uniform Delay, d1	12.8	14.6	12.5	12.4	17.6	12.3		10.6			13.6	
Progression Factor	0.26	0.24	0.07	1.75	1.69	3.19		1.42			0.68	
Incremental Delay, d2	1.2	1.3	0.3	0.4	6.7	0.2		0.6			2.8	
Delay (s)	4.5	4.8	1.3	22.0	36.6	39.3		15.7			12.0	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.3			36.2			15.7			12.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	268	28	11	453	23	8	642	51	0	431	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3032			1616	
Flt Permitted	0.31	1.00	1.00	0.52	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	519	1676	621	875	1676	964		2879			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	291	30	12	492	25	9	698	55	0	468	0
RTOR Reduction (vph)	0	0	17	0	0	15	0	8	0	0	0	0
Lane Group Flow (vph)	18	291	13	12	492	10	0	754	0	0	468	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	215	696	269	363	696	400		1250			701	
v/s Ratio Prot		0.17			c0.29						c0.29	
v/s Ratio Perm	0.03		0.02	0.01		0.01		0.26				
v/c Ratio	0.08	0.42	0.05	0.03	0.71	0.03		0.60			0.67	
Uniform Delay, d1	12.4	14.5	11.4	12.1	16.9	12.1		15.2			15.8	
Progression Factor	0.39	0.50	2.65	1.61	1.28	3.20		0.37			0.80	
Incremental Delay, d2	0.7	1.7	0.3	0.1	5.2	0.1		1.8			4.6	
Delay (s)	5.5	8.9	30.7	19.7	26.8	38.7		7.4			17.2	
Level of Service	A	A	C	B	C	D		A			B	
Approach Delay (s)		10.6			27.2			7.4			17.2	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	266	71	64	393	0	0	0	0	46	975	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.80	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1276	1676						4501	987
Flt Permitted		1.00	1.00	0.54	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	727	1676						4501	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	77	70	427	0	0	0	0	50	1060	135
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	289	51	70	427	0	0	0	0	0	1110	56
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	304	701						1877	411
v/s Ratio Prot		0.17			c0.25							
v/s Ratio Perm			0.05	0.10							0.25	0.06
v/c Ratio		0.41	0.13	0.23	0.61						0.59	0.14
Uniform Delay, d1		14.3	12.5	13.1	15.9						15.8	12.6
Progression Factor		0.39	0.10	1.00	1.00						0.18	0.07
Incremental Delay, d2		1.7	0.6	1.8	3.9						1.0	0.5
Delay (s)		7.2	1.8	14.9	19.8						3.9	1.4
Level of Service		A	A	B	B						A	A
Approach Delay (s)		6.1			19.1			0.0			3.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1571	154	322	1620	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1708	167	350	1761	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	74	117	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1708	93	233	1761	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	1678				
v/s Ratio Prot					c0.30			c0.38				
v/s Ratio Perm						0.08	0.21					
v/c Ratio					0.77	0.21	0.58	1.05				
Uniform Delay, d1					24.1	18.5	22.9	28.5				
Progression Factor					1.00	1.00	0.59	0.79				
Incremental Delay, d2					2.6	1.1	0.5	24.1				
Delay (s)					26.8	19.6	14.0	46.5				
Level of Service					C	B	B	D				
Approach Delay (s)		0.0			26.1			41.1			0.0	
Approach LOS		A			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	1049	66	58	476	0	0	687	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1505	3185			3185	1154
Flt Permitted				0.95	1.00		0.32	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		505	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	1140	72	63	517	0	0	747	168
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	97	1202	0	63	517	0	0	747	166
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		288	1820			1820	659
v/s Ratio Prot					c0.27			0.16			c0.23	
v/s Ratio Perm				0.07			0.12					0.14
v/c Ratio				0.21	0.78		0.22	0.28			0.41	0.25
Uniform Delay, d1				16.3	20.6		7.3	7.7			8.4	7.5
Progression Factor				0.38	0.33		0.31	0.33			1.21	1.28
Incremental Delay, d2				0.8	3.1		1.6	0.4			0.5	0.7
Delay (s)				6.9	10.0		3.9	2.9			10.7	10.3
Level of Service				A	A		A	A			B	B
Approach Delay (s)		0.0			9.7			3.0			10.6	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	28	1033	43	89	669	0	0	328	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5691			3167			1616	1144
Flt Permitted					1.00			0.84			1.00	1.00
Satd. Flow (perm)					5691			2669			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	30	1123	47	97	727	0	0	357	172
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	0	0	0	1192	0	0	824	0	0	357	93
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1788			1485			593	420
v/s Ratio Prot								c0.05			0.22	
v/s Ratio Perm					0.21			c0.25				0.08
v/c Ratio					0.67			0.55			0.60	0.22
Uniform Delay, d1					20.8			10.6			18.0	15.3
Progression Factor					0.77			1.23			1.17	2.21
Incremental Delay, d2					1.8			1.2			3.6	1.0
Delay (s)					17.8			14.2			24.7	34.7
Level of Service					B			B			C	C
Approach Delay (s)		0.0			17.8			14.2			27.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	82	748	0	0	0	0	0	745	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5638						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5638						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	89	813	0	0	0	0	0	810	329
RTOR Reduction (vph)	0	0	0	0	26	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	0	876	0	0	0	0	0	810	294
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.18	
v/s Ratio Perm					0.16							c0.22
v/c Ratio					0.40						0.37	0.47
Uniform Delay, d1					15.4						11.6	12.2
Progression Factor					1.00						0.29	0.20
Incremental Delay, d2					0.5						0.4	2.1
Delay (s)					16.0						3.8	4.5
Level of Service					B						A	A
Approach Delay (s)		0.0			16.0			0.0			4.0	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	515	1404	0	0	0	0	0	2103	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	1526	0	0	0	0	0	2286	221	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	385	1665	0	0	0	0	0	2286	208	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1681						1797	578			
v/s Ratio Prot								c0.72				
v/s Ratio Perm	c0.39	0.31							0.20			
v/c Ratio	1.21	0.99						1.27	0.36			
Uniform Delay, d1	30.7	30.6						19.6	10.7			
Progression Factor	1.00	1.00						1.56	1.63			
Incremental Delay, d2	121.5	19.8						124.1	0.6			
Delay (s)	152.2	50.3						154.7	18.1			
Level of Service	F	D						F	B			
Approach Delay (s)		70.0			0.0			142.7			0.0	
Approach LOS		E			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	109.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1604	195	0	0	0	0	0	0	188	664	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5673								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5673								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1743	212	0	0	0	0	0	0	204	722	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1931	0	0	0	0	0	0	0	192	722	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2206								785	2845	
v/s Ratio Prot		c0.34									c0.13	
v/s Ratio Perm										0.12		
v/c Ratio		0.88								0.24	0.25	
Uniform Delay, d1		25.5								13.1	13.2	
Progression Factor		1.53								0.55	0.60	
Incremental Delay, d2		3.0								0.6	0.2	
Delay (s)		42.0								7.8	8.0	
Level of Service		D								A	A	
Approach Delay (s)		42.0			0.0			0.0			8.0	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	161	1142	59	0	0	0	0	427	94	56	210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5505						2944			3083	
Flt Permitted		0.99						1.00			0.79	
Satd. Flow (perm)		5505						2944			2475	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	1241	64	0	0	0	0	464	102	61	228	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	1471	0	0	0	0	0	555	0	0	289	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2673						1261			1060	
v/s Ratio Prot								c0.19				
v/s Ratio Perm		0.27									0.12	
v/c Ratio		0.55						0.44			0.27	
Uniform Delay, d1		12.6						14.1			12.9	
Progression Factor		1.00						1.00			1.49	
Incremental Delay, d2		0.8						1.1			0.6	
Delay (s)		13.5						15.2			19.9	
Level of Service		B						B			B	
Approach Delay (s)		13.5			0.0			15.2			19.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1397	240	0	0	0	0	0	0	183	937	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1518	261	0	0	0	0	0	0	199	1018	0
RTOR Reduction (vph)	0	0	23	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1518	238	0	0	0	0	0	0	177	1018	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.33									c0.22	
v/s Ratio Perm			0.19							0.12		
v/c Ratio		0.76	0.43							0.28	0.53	
Uniform Delay, d1		16.6	13.6							13.5	15.3	
Progression Factor		1.30	1.33							0.29	0.40	
Incremental Delay, d2		2.6	2.2							1.0	1.0	
Delay (s)		24.2	20.4							4.9	7.1	
Level of Service		C	C							A	A	
Approach Delay (s)		23.6			0.0			0.0			6.7	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	264	1296	0	0	0	0	0	1195	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4474						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4474						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	287	1409	0	0	0	0	0	1299	101	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1681	0	0	0	0	0	1299	84	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		29.1						31.3	31.3			
Effective Green, g (s)		29.1						31.3	31.3			
Actuated g/C Ratio		0.42						0.45	0.45			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1859						2046	601			
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.38							0.06			
v/c Ratio		0.90						0.63	0.14			
Uniform Delay, d1		19.1						14.9	11.4			
Progression Factor		0.46						1.65	2.00			
Incremental Delay, d2		5.6						0.7	0.2			
Delay (s)		14.5						25.4	23.1			
Level of Service		B						C	C			
Approach Delay (s)		14.5			0.0			25.2			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	1145	53	0	0	0	0	497	72	162	447	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4437						3055		1593	3185	
Flt Permitted		1.00						1.00		0.36	1.00	
Satd. Flow (perm)		4437						3055		599	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	1245	58	0	0	0	0	540	78	176	486	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1397	0	0	0	0	0	615	0	176	486	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1901						1483		290	1547	
v/s Ratio Prot								0.20			0.15	
v/s Ratio Perm		0.31								c0.29		
v/c Ratio		0.73						0.41		0.61	0.31	
Uniform Delay, d1		16.7						11.6		13.1	10.9	
Progression Factor		1.54						1.81		1.21	1.07	
Incremental Delay, d2		1.3						0.8		8.6	0.5	
Delay (s)		27.0						21.8		24.4	12.2	
Level of Service		C						C		C	B	
Approach Delay (s)		27.0			0.0			21.8			15.5	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	1288	67	0	0	0	0	706	95	0	349	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4426						3056			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4426						3056			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1400	73	0	0	0	0	767	103	0	379	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	65	1465	0	0	0	0	0	869	0	0	379	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1846						1331			704	
v/s Ratio Prot		c0.33						c0.28			0.23	
v/s Ratio Perm	0.05											
v/c Ratio	0.12	0.79						0.65			0.54	
Uniform Delay, d1	12.5	17.8						15.6			14.6	
Progression Factor	0.38	0.28						0.36			0.39	
Incremental Delay, d2	0.4	2.6						1.7			2.3	
Delay (s)	5.1	7.7						7.3			8.0	
Level of Service	A	A						A			A	
Approach Delay (s)		7.6			0.0			7.3			8.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	990	75	0	0	0	0	793	94	112	701	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.97	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1552	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.26	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	432	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	1076	82	0	0	0	0	862	102	122	762	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	117	1146	0	0	0	0	0	862	85	122	762	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	216	1597	
v/s Ratio Prot		c0.26						0.27			0.24	
v/s Ratio Perm	0.08								0.07	c0.28		
v/c Ratio	0.23	0.72						0.54	0.13	0.56	0.48	
Uniform Delay, d1	15.9	19.6						11.9	9.3	12.1	11.4	
Progression Factor	0.92	1.04						0.27	0.07	1.00	1.00	
Incremental Delay, d2	0.6	1.7						0.9	0.3	10.3	1.0	
Delay (s)	15.2	22.2						4.0	0.9	22.4	12.5	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		21.5			0.0			3.7			13.8	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	1165	106	65	1039	180	234	1722	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1350	1570	4577	1177	1449	3185	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	381	4577	1350	486	4577	1177	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	1266	115	71	1129	196	254	1872	187	0	0	0
RTOR Reduction (vph)	0	0	45	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	247	1266	70	71	1129	83	254	1872	152	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.4	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.60	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1251	816	73	691	177	859	1889	798			
v/s Ratio Prot	c0.10	0.28	0.03		c0.25		0.10	c0.59				
v/s Ratio Perm	0.24		0.02	0.15		0.07	0.08		0.11			
v/c Ratio	1.25	1.01	0.09	0.97	1.63	0.47	0.30	0.99	0.19			
Uniform Delay, d1	31.0	32.7	7.4	38.0	38.2	34.9	9.0	18.1	8.4			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.71	1.49	2.12			
Incremental Delay, d2	146.3	28.4	0.0	97.9	291.8	8.7	0.0	4.5	0.0			
Delay (s)	177.3	61.1	7.5	135.9	330.0	43.6	15.5	31.3	17.8			
Level of Service	F	E	A	F	F	D	B	C	B			
Approach Delay (s)		75.0			279.9			28.5			0.0	
Approach LOS		E			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	108.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	103	44	1003	0	0	0	0	80	489	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5727	1425
Flt Permitted		1.00	1.00	0.16	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	270	3185						5727	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	112	48	1090	0	0	0	0	87	532	124
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	1039	48	48	1090	0	0	0	0	0	619	104
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	115	1365						2429	604
v/s Ratio Prot		0.33			c0.34							
v/s Ratio Perm			0.03	0.18							0.11	0.07
v/c Ratio		0.76	0.08	0.42	0.80						0.25	0.17
Uniform Delay, d1		17.0	11.8	13.9	17.4						13.0	12.5
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		4.1	0.3	10.8	5.0						0.3	0.6
Delay (s)		21.0	12.1	24.7	22.3						13.3	13.1
Level of Service		C	B	C	C						B	B
Approach Delay (s)		20.1			22.4			0.0			13.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	1028	60	18	879	76	81	353	39	31	150	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3065			3026			2811	
Flt Permitted	0.18	1.00		0.14	1.00			0.82			0.86	
Satd. Flow (perm)	307	3129		229	3065			2517			2427	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	1117	65	20	955	83	88	384	42	34	163	99
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	17	0
Lane Group Flow (vph)	162	1178	0	20	1032	0	0	507	0	0	279	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	154	1570		114	1538			1011			975	
v/s Ratio Prot		0.38			0.34							
v/s Ratio Perm	c0.53			0.09				c0.20			0.11	
v/c Ratio	1.05	0.75		0.18	0.67			0.50			0.29	
Uniform Delay, d1	24.9	19.9		13.6	18.7			22.4			20.2	
Progression Factor	1.00	1.00		0.56	0.47			1.00			1.00	
Incremental Delay, d2	87.0	3.3		2.9	2.0			1.8			0.7	
Delay (s)	111.9	23.2		10.5	10.9			24.2			20.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		33.9			10.9			24.2			20.9	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	768	100	60	782	0	0	0	0	205	731	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.20	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		328	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	835	109	65	850	0	0	0	0	223	795	163
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	934	0	65	850	0	0	0	0	223	795	114
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		147	1433					716	2059	641
v/s Ratio Prot		c0.30			0.27						c0.17	
v/s Ratio Perm				0.20						0.14		0.08
v/c Ratio		0.66		0.44	0.59					0.31	0.39	0.18
Uniform Delay, d1		21.6		18.9	20.6					17.6	18.3	16.4
Progression Factor		0.32		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.7		9.4	1.8					1.1	0.5	0.6
Delay (s)		8.6		28.2	22.4					18.7	18.9	17.0
Level of Service		A		C	C					B	B	B
Approach Delay (s)		8.6			22.9			0.0			18.6	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	929	0	0	715	106	102	1366	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.23	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	394	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1010	0	0	777	115	111	1485	84	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	34	0	0	0
Lane Group Flow (vph)	161	1010	0	0	889	0	0	1596	50	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	180	1460			1432			1824	570			
v/s Ratio Prot		0.32			0.28							
v/s Ratio Perm	c0.41							0.35	0.03			
v/c Ratio	0.89	0.69			0.62			0.88	0.09			
Uniform Delay, d1	17.4	15.0			14.3			19.4	13.1			
Progression Factor	1.00	1.00			0.65			0.59	0.85			
Incremental Delay, d2	44.0	2.7			1.8			4.3	0.2			
Delay (s)	61.4	17.7			11.1			15.7	11.3			
Level of Service	E	B			B			B	B			
Approach Delay (s)		23.7			11.1			15.4			0.0	
Approach LOS		C			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	805	53	62	677	87	46	396	33	48	500	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.26	1.00		0.21	1.00		0.38	1.00		0.43	1.00	1.00
Satd. Flow (perm)	429	3156		357	3131		639	3148		722	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	875	58	67	736	95	50	430	36	52	543	87
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	50
Lane Group Flow (vph)	80	926	0	67	817	0	50	457	0	52	543	37
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	205	1510		170	1498		273	1349		309	1365	610
v/s Ratio Prot		c0.29			0.26			0.15			c0.17	
v/s Ratio Perm	0.19			0.19			0.08			0.07		0.03
v/c Ratio	0.39	0.61		0.39	0.55		0.18	0.34		0.17	0.40	0.06
Uniform Delay, d1	11.7	13.5		11.7	12.9		12.4	13.4		12.3	13.8	11.7
Progression Factor	1.81	1.75		1.12	1.17		1.49	1.52		0.52	0.58	0.27
Incremental Delay, d2	4.2	1.4		5.6	1.2		1.5	0.7		1.1	0.8	0.2
Delay (s)	25.4	25.0		18.6	16.2		19.9	21.0		7.6	8.8	3.3
Level of Service	C	C		B	B		B	C		A	A	A
Approach Delay (s)		25.0			16.4			20.9			8.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	827	45	67	698	57	65	728	73	0	401	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1558	3137		1556	3125			3162	1330		1616	
Flt Permitted	0.26	1.00		0.20	1.00			0.83	1.00		1.00	
Satd. Flow (perm)	418	3137		324	3125			2648	1330		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	899	49	73	759	62	71	791	79	0	436	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	24	0	0	0
Lane Group Flow (vph)	51	942	0	73	812	0	0	862	55	0	436	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1344		138	1339			1134	570		692	
v/s Ratio Prot		c0.30			0.26						0.27	
v/s Ratio Perm	0.12			0.23				c0.33	0.04			
v/c Ratio	0.28	0.70		0.53	0.61			0.76	0.10		0.63	
Uniform Delay, d1	13.0	16.3		14.8	15.4			17.0	11.9		15.7	
Progression Factor	1.55	1.56		1.41	1.49			0.47	0.33		1.55	
Incremental Delay, d2	3.3	2.6		13.0	1.9			4.0	0.3		3.6	
Delay (s)	23.4	28.1		33.9	25.0			12.0	4.2		27.8	
Level of Service	C	C		C	C			B	A		C	
Approach Delay (s)		27.9			25.7			11.3			27.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	674	76	26	424	43	66	792	81	94	586	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3137		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.15	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1593	3137		577	3141		248	3185	1425	358	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	733	83	28	461	47	72	861	88	102	637	203
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	54	0	0	125
Lane Group Flow (vph)	128	804	0	28	497	0	72	861	34	102	637	78
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1465		195	1063		95	1228	549	138	646	549
v/s Ratio Prot	c0.08	c0.26			0.16			0.27			c0.38	
v/s Ratio Perm				0.05			0.29		0.02	0.28		0.05
v/c Ratio	1.02	0.55		0.14	0.47		0.76	0.70	0.06	0.74	0.99	0.14
Uniform Delay, d1	32.2	13.4		16.1	18.2		18.7	18.1	13.5	18.5	21.3	14.0
Progression Factor	0.47	1.09		1.00	1.00		0.62	0.62	0.47	1.36	1.36	4.25
Incremental Delay, d2	76.1	1.1		1.5	1.5		38.6	3.0	0.2	27.3	30.5	0.5
Delay (s)	91.2	15.7		17.6	19.7		50.2	14.2	6.5	52.4	59.5	59.8
Level of Service	F	B		B	B		D	B	A	D	E	E
Approach Delay (s)		25.9			19.6			16.1			58.8	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	24	24	53	91	73	38	2018	10	10	169	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	170	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	26	26	58	99	79	41	2193	11	11	184	21
RTOR Reduction (vph)	0	0	20	0	0	68	0	0	5	0	0	12
Lane Group Flow (vph)	32	26	6	58	99	11	41	2193	6	11	184	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Effective Green, g (s)	9.3	15.0	20.4	7.2	12.9	12.9	5.4	49.8	49.8	39.4	39.4	39.4
Actuated g/C Ratio	0.10	0.17	0.23	0.08	0.14	0.14	0.06	0.55	0.55	0.44	0.44	0.44
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	319	279	323	127	456	204	95	1762	788	74	733	623
v/s Ratio Prot	0.01	c0.02	0.00	c0.04	0.03		0.03	c0.69			0.11	
v/s Ratio Perm			0.00			0.01			0.00	0.06		0.01
v/c Ratio	0.10	0.09	0.02	0.46	0.22	0.06	0.43	1.24	0.01	0.15	0.25	0.01
Uniform Delay, d1	36.6	31.7	27.0	39.5	34.1	33.3	40.8	20.1	9.0	15.2	16.0	14.3
Progression Factor	1.00	1.00	1.00	1.35	1.28	1.00	1.00	1.00	1.00	1.18	1.20	1.00
Incremental Delay, d2	0.1	0.1	0.0	2.4	0.2	0.1	3.1	115.0	0.0	4.0	0.8	0.0
Delay (s)	36.7	31.9	27.0	55.8	44.0	33.4	43.9	135.1	9.0	22.0	19.9	14.4
Level of Service	D	C	C	E	D	C	D	F	A	C	B	B
Approach Delay (s)		32.2			43.4			132.9			19.5	
Approach LOS		C			D			F			B	

Intersection Summary			
HCM 2000 Control Delay	113.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	10	51	293	0	0	0	0	0	459	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1664						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1664						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	11	55	318	0	0	0	0	0	499	93
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	56
Lane Group Flow (vph)	0	0	5	0	373	0	0	0	0	0	499	37
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		813						1835	571
v/s Ratio Prot											c0.11	
v/s Ratio Perm			0.00		0.22							0.03
v/c Ratio			0.01		0.46						0.27	0.07
Uniform Delay, d1			11.8		15.2						18.1	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		1.9						0.4	0.2
Delay (s)			11.8		17.0						18.5	16.8
Level of Service			B		B						B	B
Approach Delay (s)		11.8			17.0			0.0			18.2	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	283	105	20	225	0	0	162	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1664	1399		3172			3090	
Flt Permitted					0.99	1.00		0.93			1.00	
Satd. Flow (perm)					1664	1399		2954			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	308	114	22	245	0	0	176	37
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	360	75	0	267	0	0	199	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					17.2	17.2		43.6			43.6	
Effective Green, g (s)					17.2	17.2		43.6			43.6	
Actuated g/C Ratio					0.25	0.25		0.62			0.62	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					408	343		1839			1924	
v/s Ratio Prot											0.06	
v/s Ratio Perm					0.22	0.05		c0.09				
v/c Ratio					0.88	0.22		0.15			0.10	
Uniform Delay, d1					25.4	21.0		5.5			5.3	
Progression Factor					1.05	1.06		1.00			1.00	
Incremental Delay, d2					22.7	1.4		0.2			0.1	
Delay (s)					49.4	23.8		5.6			5.4	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			43.2			5.6			5.4	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	84	241	0	0	0	0	0	756	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	91	262	0	0	0	0	0	822	63
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	91	262	0	0	0	0	0	822	32
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.16						c0.18	
v/s Ratio Perm				0.06								0.03
v/c Ratio				0.18	0.43						0.36	0.05
Uniform Delay, d1				15.3	17.0						10.4	8.8
Progression Factor				0.41	0.46						1.00	1.00
Incremental Delay, d2				0.7	2.0						0.4	0.2
Delay (s)				7.0	9.8						10.9	9.0
Level of Service				A	A						B	A
Approach Delay (s)		0.0			9.1			0.0			10.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	246	66	80	1491	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	267	72	87	1621	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	267	56	0	1694	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.16							
v/s Ratio Perm						0.04		0.37				
v/c Ratio					0.43	0.11		0.76				
Uniform Delay, d1					16.3	14.3		14.4				
Progression Factor					1.70	2.00		1.00				
Incremental Delay, d2					1.9	0.4		2.4				
Delay (s)					29.6	28.9		16.8				
Level of Service					C	C		B				
Approach Delay (s)		0.0			29.4			16.8			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	26	232	38	28	423	0	0	658	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1374	1542	3185			3185	1263
Flt Permitted					1.00	1.00	0.34	1.00			1.00	1.00
Satd. Flow (perm)					1657	1374	557	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	28	252	41	30	460	0	0	715	46
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	0	280	15	30	460	0	0	715	28
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					497	412	342	1956			1956	775
v/s Ratio Prot								0.14			c0.22	
v/s Ratio Perm					0.17	0.01	0.05					0.02
v/c Ratio					0.56	0.04	0.09	0.24			0.37	0.04
Uniform Delay, d1					20.6	17.3	5.5	6.1			6.7	5.3
Progression Factor					0.85	1.13	1.00	1.00			0.69	0.23
Incremental Delay, d2					4.2	0.2	0.5	0.3			0.5	0.1
Delay (s)					21.7	19.7	6.0	6.4			5.1	1.3
Level of Service					C	B	A	A			A	A
Approach Delay (s)		0.0			21.4			6.3			4.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	218	34	72	854	0	0	407	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.69
Flpb, ped/bikes					0.93	1.00	0.88	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1548	984	1402	3185			1616	955
Flt Permitted					0.99	1.00	0.40	1.00			1.00	1.00
Satd. Flow (perm)					1548	984	595	3185			1616	955
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	237	37	78	928	0	0	442	193
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	0	30
Lane Group Flow (vph)	0	0	0	0	288	14	78	928	0	0	442	163
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					574	365	293	1569			796	470
v/s Ratio Prot								c0.29			0.27	
v/s Ratio Perm					0.19	0.01	0.13					0.17
v/c Ratio					0.50	0.04	0.27	0.59			0.56	0.35
Uniform Delay, d1					17.0	14.0	10.4	12.7			12.4	10.9
Progression Factor					1.45	1.97	1.00	1.00			1.47	1.77
Incremental Delay, d2					3.0	0.2	2.2	1.6			2.4	1.7
Delay (s)					27.7	27.8	12.6	14.4			20.5	20.9
Level of Service					C	C	B	B			C	C
Approach Delay (s)		0.0			27.7			14.2			20.6	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	181	48	62	912	0	0	593	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3154	1425	1593	3185			3107	
Flt Permitted					0.99	1.00	0.32	1.00			1.00	
Satd. Flow (perm)					3154	1425	529	3185			3107	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	197	52	67	991	0	0	645	126
RTOR Reduction (vph)	0	0	0	0	0	36	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	245	16	67	991	0	0	748	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	317	1911			1864	
v/s Ratio Prot								c0.31			0.24	
v/s Ratio Perm					0.08	0.01	0.13					
v/c Ratio					0.25	0.04	0.21	0.52			0.40	
Uniform Delay, d1					17.8	16.6	6.4	8.1			7.4	
Progression Factor					1.00	1.00	1.00	1.00			1.74	
Incremental Delay, d2					0.6	0.2	1.5	1.0			0.3	
Delay (s)					18.4	16.8	7.9	9.1			13.2	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.2			9.1			13.2	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	769	203	197	725	115	214	564	221	130	323	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1512	3185	1097	1593	4368		1544	3185	1229	1488	3043	
Flt Permitted	0.30	1.00	1.00	0.17	1.00		0.43	1.00	1.00	0.42	1.00	
Satd. Flow (perm)	478	3185	1097	283	4368		695	3185	1229	658	3043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	836	221	214	788	125	233	613	240	141	351	57
RTOR Reduction (vph)	0	0	146	0	24	0	0	0	15	0	15	0
Lane Group Flow (vph)	216	836	75	214	889	0	233	613	225	141	393	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	1079	371	229	1965		344	1362	621	222	1031	
v/s Ratio Prot		0.26		c0.07	0.20		c0.04	0.19	0.03		0.13	
v/s Ratio Perm	c0.45		0.07	0.35			c0.25		0.16	0.21		
v/c Ratio	1.34	0.77	0.20	0.93	0.45		0.68	0.45	0.36	0.64	0.38	
Uniform Delay, d1	29.8	26.7	21.1	19.6	17.1		20.2	18.2	13.5	25.1	22.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	189.4	5.4	1.2	41.4	0.8		5.2	1.1	0.4	13.1	1.1	
Delay (s)	219.1	32.1	22.3	61.0	17.8		25.5	19.3	13.8	38.1	23.7	
Level of Service	F	C	C	E	B		C	B	B	D	C	
Approach Delay (s)		62.1			26.0			19.4			27.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	719	139	239	877	488	33	579	167	60	846	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1589	3185	1165	3090	3185	1230	1521	3185	1425	1543	3185	1132
Flt Permitted	0.16	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	259	3185	1165	3090	3185	1230	261	3185	1425	356	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	782	151	260	953	530	36	629	182	65	920	147
RTOR Reduction (vph)	0	0	103	0	0	40	0	0	139	0	0	55
Lane Group Flow (vph)	267	782	48	260	953	490	36	629	43	65	920	92
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	43.9	31.9	31.9	13.1	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	43.9	31.9	31.9	13.1	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.13	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	1016	371	404	1369	528	63	780	142	87	780	413
v/s Ratio Prot	c0.12	0.25		0.08	0.30			0.20	0.03		c0.29	0.03
v/s Ratio Perm	c0.31		0.04			c0.40	0.14			0.18		0.05
v/c Ratio	0.98	0.77	0.13	0.64	0.70	0.93	0.57	0.81	0.31	0.75	1.18	0.22
Uniform Delay, d1	22.1	30.7	24.2	41.2	23.2	27.0	33.1	35.5	41.8	34.9	37.8	21.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.8	5.6	0.7	3.5	1.6	22.5	32.6	8.7	1.2	44.1	93.8	0.3
Delay (s)	69.9	36.4	24.9	44.7	24.7	49.5	65.7	44.3	43.0	79.0	131.6	22.2
Level of Service	E	D	C	D	C	D	E	D	D	E	F	C
Approach Delay (s)		42.4			35.2			44.9			114.4	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	832	75	81	932	652	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2379
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	904	82	88	1013	709	1008
RTOR Reduction (vph)	0	49	0	0	0	13
Lane Group Flow (vph)	904	33	88	1013	709	995
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	35.7	35.7	15.4	54.6	25.6	41.0
Effective Green, g (s)	35.7	35.7	15.4	54.6	25.6	41.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.28	0.46
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1263	416	272	1932	878	1083
v/s Ratio Prot	c0.28		0.06	0.32	0.23	c0.16
v/s Ratio Perm		0.03				0.26
v/c Ratio	0.72	0.08	0.32	0.52	0.81	0.92
Uniform Delay, d1	22.9	16.9	32.7	10.2	29.9	22.9
Progression Factor	1.00	1.00	0.64	1.96	1.00	1.00
Incremental Delay, d2	3.5	0.4	0.5	0.8	5.5	12.1
Delay (s)	26.4	17.3	21.4	20.8	35.4	35.0
Level of Service	C	B	C	C	D	D
Approach Delay (s)	25.6			20.8	35.2	
Approach LOS	C			C	D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1057	38	53	643	63	123	702	45	88	878	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1143	1547	3185	1196	1593	3140		1584	3185	976
Flt Permitted	0.17	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.29	1.00	1.00
Satd. Flow (perm)	286	3185	1143	275	3185	1196	1593	3140		485	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1149	41	58	699	68	134	763	49	96	954	162
RTOR Reduction (vph)	0	0	25	0	0	50	0	5	0	0	0	110
Lane Group Flow (vph)	272	1149	16	58	699	18	134	807	0	96	954	52
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.7	35.9		33.8	29.0	29.0
Effective Green, g (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.7	35.9		33.8	29.0	29.0
Actuated g/C Ratio	0.40	0.40	0.40	0.26	0.26	0.26	0.13	0.40		0.38	0.32	0.32
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	1263	453	72	838	314	207	1252		240	1026	314
v/s Ratio Prot	c0.11	0.36			0.22		c0.08	0.26		0.02	c0.30	
v/s Ratio Perm	c0.33		0.01	0.21		0.01				0.13		0.05
v/c Ratio	1.12	0.91	0.04	0.81	0.83	0.06	0.65	0.64		0.40	0.93	0.17
Uniform Delay, d1	22.6	25.6	16.6	31.0	31.3	24.8	37.2	21.9		18.8	29.5	21.8
Progression Factor	1.08	1.07	1.00	0.92	0.96	1.00	0.63	1.61		1.00	1.00	1.00
Incremental Delay, d2	80.0	6.9	0.1	52.2	7.9	0.3	4.9	0.8		1.1	14.0	0.3
Delay (s)	104.2	34.3	16.7	80.6	37.9	25.1	28.3	36.0		19.9	43.5	22.1
Level of Service	F	C	B	F	D	C	C	D		B	D	C
Approach Delay (s)		46.8			39.8			34.9			38.8	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1093	81	45	719	78	60	562	125	80	426	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.92	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	834	1470	3185	1050	1536	4287		1500	2926	
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.25	1.00		0.27	1.00	
Satd. Flow (perm)	374	3185	834	367	3185	1050	410	4287		428	2926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1188	88	49	782	85	65	611	136	87	463	198
RTOR Reduction (vph)	0	0	29	0	0	50	0	24	0	0	53	0
Lane Group Flow (vph)	266	1188	59	49	782	35	65	723	0	87	608	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1886	493	152	1327	437	132	1381		137	942	
v/s Ratio Prot	c0.10	0.37			0.25			0.17			c0.21	
v/s Ratio Perm	c0.30		0.07	0.13		0.03	0.16			0.20		
v/c Ratio	0.68	0.63	0.12	0.32	0.59	0.08	0.49	0.52		0.64	0.65	
Uniform Delay, d1	11.2	11.9	8.0	17.7	20.3	15.8	24.6	24.9		26.0	26.1	
Progression Factor	1.31	1.61	2.05	0.59	0.62	0.69	1.08	1.14		1.00	1.00	
Incremental Delay, d2	3.2	1.1	0.3	4.8	1.7	0.3	12.3	1.4		20.3	3.4	
Delay (s)	17.9	20.3	16.9	15.3	14.4	11.2	38.9	29.8		46.3	29.5	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		19.7			14.1			30.5			31.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	1106	52	36	668	6	0	0	0	87	578	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1574	3185	1027	1525	3174						4468	1265
Flt Permitted	0.26	1.00	1.00	0.19	1.00						0.99	1.00
Satd. Flow (perm)	424	3185	1027	310	3174						4468	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1202	57	39	726	7	0	0	0	95	628	195
RTOR Reduction (vph)	0	0	19	0	1	0	0	0	0	0	0	24
Lane Group Flow (vph)	110	1202	38	39	732	0	0	0	0	0	723	171
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Effective Green, g (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	331	1691	545	125	1287						1563	559
v/s Ratio Prot	0.03	c0.38			0.23							0.03
v/s Ratio Perm	0.15		0.04	0.13							0.16	0.11
v/c Ratio	0.33	0.71	0.07	0.31	0.57						0.46	0.31
Uniform Delay, d1	11.7	15.9	10.3	18.2	20.7						22.7	16.2
Progression Factor	1.24	1.07	1.79	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	2.0	0.2	6.4	1.8						1.0	0.3
Delay (s)	15.0	19.0	18.6	24.6	22.5						23.7	16.5
Level of Service	B	B	B	C	C						C	B
Approach Delay (s)		18.6			22.6			0.0			22.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	15	33	37	68	150	20	414	17	14	1062	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.92	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2635		1593	2508		1582	3148		1472	3185	1337
Flt Permitted	0.95	1.00		0.95	1.00		0.17	1.00		0.47	1.00	1.00
Satd. Flow (perm)	1593	2635		1593	2508		284	3148		731	3185	1337
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	16	36	40	74	163	22	450	18	15	1154	117
RTOR Reduction (vph)	0	27	0	0	82	0	0	2	0	0	0	25
Lane Group Flow (vph)	126	25	0	40	155	0	22	466	0	15	1154	92
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Effective Green, g (s)	7.2	22.5		3.0	18.3		49.8	49.8		49.8	49.8	57.0
Actuated g/C Ratio	0.08	0.25		0.03	0.20		0.55	0.55		0.55	0.55	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	127	658		53	509		157	1741		404	1762	846
v/s Ratio Prot	c0.08	0.01		0.03	c0.06			0.15			c0.36	0.01
v/s Ratio Perm							0.08			0.02		0.06
v/c Ratio	0.99	0.04		0.75	0.30		0.14	0.27		0.04	0.65	0.11
Uniform Delay, d1	41.4	25.6		43.1	30.4		9.7	10.5		9.2	14.1	6.5
Progression Factor	1.00	1.00		1.00	1.00		1.12	1.11		1.00	1.00	1.00
Incremental Delay, d2	77.2	0.0		45.2	0.3		1.8	0.4		0.2	1.9	0.1
Delay (s)	118.5	25.6		88.4	30.8		12.8	12.1		9.3	16.0	6.6
Level of Service	F	C		F	C		B	B		A	B	A
Approach Delay (s)		91.4			39.1			12.1			15.1	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	172	0	340	16	91	806	45	32	1023	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.96	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3153		1577	3125		1533	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.18	1.00	1.00
Satd. Flow (perm)		1676	1277		3153		187	3125		291	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	187	0	370	17	99	876	49	35	1112	39
RTOR Reduction (vph)	0	0	15	0	4	0	0	4	0	0	0	24
Lane Group Flow (vph)	0	443	172	0	383	0	99	921	0	35	1112	15
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1236		115	1259	514
v/s Ratio Prot		c0.26			0.12			0.29			0.35	
v/s Ratio Perm			0.13				c0.53			0.12		0.01
v/c Ratio		0.54	0.28		0.25		1.36	0.74		0.30	0.88	0.03
Uniform Delay, d1		16.0	13.6		13.4		27.2	23.3		18.7	25.3	16.6
Progression Factor		1.00	1.00		0.85		0.93	0.91		0.55	0.71	0.31
Incremental Delay, d2		2.6	1.1		0.3		223.4	3.9		3.8	5.5	0.1
Delay (s)		18.5	14.7		11.7		248.7	25.0		14.2	23.6	5.2
Level of Service		B	B		B		F	C		B	C	A
Approach Delay (s)		17.4			11.7			46.7			22.7	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰	↑↱			↑	
Volume (vph)	0	581	79	0	497	42	110	478	83	0	494	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3024			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.18	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	304	3024			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	632	86	0	540	46	120	520	90	0	537	0
RTOR Reduction (vph)	0	0	49	0	0	26	0	17	0	0	0	0
Lane Group Flow (vph)	0	632	37	0	540	20	120	594	0	0	537	0
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		39.1	39.1		39.1	39.1	40.5	40.5			28.6	
Effective Green, g (s)		39.1	39.1		39.1	39.1	40.5	40.5			28.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.45	0.45			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		728	440		728	584	229	1360			513	
v/s Ratio Prot		c0.38			0.32		0.04	c0.20			c0.33	
v/s Ratio Perm			0.04			0.01	0.20					
v/c Ratio		0.87	0.08		0.74	0.03	0.52	0.44			1.05	
Uniform Delay, d1		23.1	14.9		21.2	14.6	32.4	16.9			30.7	
Progression Factor		0.67	0.03		0.29	0.69	0.79	0.85			0.91	
Incremental Delay, d2		12.5	0.4		4.4	0.1	2.0	0.2			49.1	
Delay (s)		28.1	0.8		10.7	10.2	27.6	14.7			77.1	
Level of Service		C	A		B	B	C	B			E	
Approach Delay (s)		24.8			10.6			16.8			77.1	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	475	174	56	542	0	0	0	0	17	605	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1504	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.29	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	466	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	189	61	589	0	0	0	0	18	658	40
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	22
Lane Group Flow (vph)	0	516	176	61	589	0	0	0	0	18	658	18
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	208	748					614	1433	275
v/s Ratio Prot		0.31			c0.35						c0.21	
v/s Ratio Perm			0.16	0.13						0.01		0.03
v/c Ratio		0.69	0.35	0.29	0.79					0.03	0.46	0.07
Uniform Delay, d1		19.9	16.3	15.9	21.3					13.8	17.2	14.0
Progression Factor		1.36	1.61	1.00	1.00					0.20	0.19	0.00
Incremental Delay, d2		2.9	1.1	3.6	8.2					0.1	1.0	0.4
Delay (s)		30.0	27.3	19.4	29.5					2.9	4.2	0.5
Level of Service		C	C	B	C					A	A	A
Approach Delay (s)		29.3			28.5			0.0			3.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	158	117	24	286	1026	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.93	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1473	3185	3185	748
Flt Permitted	0.95	1.00	0.22	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	336	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	127	26	311	1115	84
RTOR Reduction (vph)	0	27	0	0	0	19
Lane Group Flow (vph)	172	100	26	311	1115	65
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	19.6	19.6	60.7	60.7	60.7	60.7
Effective Green, g (s)	19.6	19.6	60.7	60.7	60.7	60.7
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	410	226	2148	2148	504
v/s Ratio Prot				0.10	c0.35	
v/s Ratio Perm	c0.12	0.05	0.08			0.09
v/c Ratio	0.56	0.24	0.12	0.14	0.52	0.13
Uniform Delay, d1	31.3	29.1	5.2	5.3	7.3	5.2
Progression Factor	1.00	1.00	1.00	1.00	2.27	3.38
Incremental Delay, d2	2.2	0.3	1.0	0.1	0.7	0.4
Delay (s)	33.5	29.4	6.2	5.4	17.3	18.1
Level of Service	C	C	A	A	B	B
Approach Delay (s)	31.8			5.5	17.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1406	176	58	460	0	0	1210	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1528	191	63	500	0	0	1315	230
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	107	1708	0	63	500	0	0	1315	219
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.55			0.16			c0.41	
v/s Ratio Perm				0.08			0.31					0.19
v/c Ratio				0.13	0.98		0.85	0.43			1.13	0.51
Uniform Delay, d1				9.1	18.9		26.2	21.4			28.5	22.2
Progression Factor				1.29	0.95		1.32	1.36			1.36	1.53
Incremental Delay, d2				0.2	12.9		59.3	0.9			65.8	3.2
Delay (s)				12.0	30.9		94.1	30.2			104.4	37.1
Level of Service				B	C		F	C			F	D
Approach Delay (s)		0.0			29.8			37.3			94.4	
Approach LOS		A			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	39	1232	80	137	429	0	0	237	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.96			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3006			1616	941
Flt Permitted				0.95	1.00	1.00		0.75			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2273			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	42	1339	87	149	466	0	0	258	157
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	64
Lane Group Flow (vph)	0	0	0	42	1339	49	0	615	0	0	258	93
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		947			673	392
v/s Ratio Prot					c0.42						0.16	
v/s Ratio Perm				0.04		0.04		c0.27				0.10
v/c Ratio				0.09	0.88	0.09		0.65			0.38	0.24
Uniform Delay, d1				12.7	21.0	12.7		21.0			18.2	17.0
Progression Factor				0.92	1.17	1.55		0.25			0.98	1.10
Incremental Delay, d2				0.3	5.6	0.2		1.3			0.6	0.5
Delay (s)				12.1	30.1	19.9		6.6			18.5	19.1
Level of Service				B	C	B		A			B	B
Approach Delay (s)		0.0			29.0			6.6			18.8	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	274	892	0	0	0	0	0	884	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	298	970	0	0	0	0	0	961	309
RTOR Reduction (vph)	0	0	0	66	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	232	970	0	0	0	0	0	961	296
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.30						0.21	
v/s Ratio Perm				0.18								c0.26
v/c Ratio				0.49	0.85						0.39	0.48
Uniform Delay, d1				22.5	26.7						12.2	13.0
Progression Factor				1.00	1.00						1.50	1.56
Incremental Delay, d2				3.6	8.1						0.5	2.6
Delay (s)				26.1	34.8						18.8	23.0
Level of Service				C	C						B	C
Approach Delay (s)		0.0			32.7			0.0			19.8	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	79	1176	0	0	116	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	1278	0	0	126	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	86	1278	0	0	126	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	54.8	74.5			9.0	
Effective Green, g (s)	54.8	74.5			9.0	
Actuated g/C Ratio	0.61	0.83			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1881	5620			309	
v/s Ratio Prot	0.03	c0.19				
v/s Ratio Perm					c0.04	
v/c Ratio	0.05	0.23			0.41	
Uniform Delay, d1	7.1	1.6			38.0	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.9	
Delay (s)	7.1	1.7			38.9	
Level of Service	A	A			D	
Approach Delay (s)		2.1	0.0		38.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1003	138	0	0	0	0	1393	311	109	212	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4388		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4388		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	1090	150	0	0	0	0	1514	338	118	230	0
RTOR Reduction (vph)	0	0	98	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	121	1090	52	0	0	0	0	1832	0	118	230	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1857		236	912	
v/s Ratio Prot		c0.19						c0.42		c0.04	0.14	
v/s Ratio Perm	0.11		0.04									
v/c Ratio	0.31	0.55	0.12					0.99		0.50	0.25	
Uniform Delay, d1	21.6	23.8	20.1					25.7		39.9	10.8	
Progression Factor	1.01	1.02	1.35					0.49		1.00	1.00	
Incremental Delay, d2	2.1	1.1	0.5					15.7		1.7	0.7	
Delay (s)	24.0	25.4	27.6					28.3		41.6	11.5	
Level of Service	C	C	C					C		D	B	
Approach Delay (s)		25.5			0.0			28.3			21.7	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1352	116	0	0	0	0	721	92	109	1001	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.94	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3029		1502	3185	
Flt Permitted		1.00						1.00		0.23	1.00	
Satd. Flow (perm)		5642						3029		369	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1470	126	0	0	0	0	784	100	118	1088	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1611	0	0	0	0	0	881	0	118	1088	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1480		180	1557	
v/s Ratio Prot								0.29			c0.34	
v/s Ratio Perm		0.29								0.32		
v/c Ratio		0.68						0.60		0.66	0.70	
Uniform Delay, d1		21.0						16.6		17.3	17.9	
Progression Factor		0.75						0.66		0.35	0.17	
Incremental Delay, d2		1.2						1.6		1.7	0.2	
Delay (s)		17.0						12.5		7.7	3.2	
Level of Service		B						B		A	A	
Approach Delay (s)		17.0			0.0			12.5			3.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1321	73	0	0	0	0	426	161	0	331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5388						2737			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5388						2737			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	1436	79	0	0	0	0	463	175	0	360	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1659	0	0	0	0	0	636	0	0	360	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2574						1116			658	
v/s Ratio Prot								c0.23			0.22	
v/s Ratio Perm		0.31										
v/c Ratio		0.64						0.57			0.55	
Uniform Delay, d1		17.7						20.6			20.3	
Progression Factor		0.43						0.92			1.15	
Incremental Delay, d2		0.9						2.0			3.2	
Delay (s)		8.5						20.8			26.5	
Level of Service		A						C			C	
Approach Delay (s)		8.5			0.0			20.8			26.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1353	194	0	0	0	0	0	0	294	1045	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5451									4330	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5451									4330	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1471	211	0	0	0	0	0	0	320	1136	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1664	0	0	0	0	0	0	0	0	1444	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2495									1900	
v/s Ratio Prot		c0.31										
v/s Ratio Perm											0.33	
v/c Ratio		0.67									0.76	
Uniform Delay, d1		19.0									21.3	
Progression Factor		1.40									0.48	
Incremental Delay, d2		1.1									2.8	
Delay (s)		27.7									12.9	
Level of Service		C									B	
Approach Delay (s)		27.7			0.0			0.0			12.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	391	1329	254	0	0	0	0	883	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	425	1445	276	0	0	0	0	960	254
RTOR Reduction (vph)	0	0	0	34	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	319	1749	0	0	0	0	0	960	241
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.21	
v/s Ratio Perm				c0.43	0.32							c0.26
v/c Ratio				0.96	0.72						0.47	0.58
Uniform Delay, d1				24.2	20.4						17.6	18.7
Progression Factor				1.29	1.26						1.00	1.00
Incremental Delay, d2				37.2	1.6						0.8	5.8
Delay (s)				68.5	27.3						18.4	24.5
Level of Service				E	C						B	C
Approach Delay (s)		0.0			34.1			0.0			19.7	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	976	82	572	1326	0	0	0	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5519		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5519		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1061	89	622	1441	0	0	0	402
RTOR Reduction (vph)	0	0	0	0	12	0	451	0	0	0	0	377
Lane Group Flow (vph)	0	0	0	0	1138	0	171	1441	0	0	0	25
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2017		851	2013				153
v/s Ratio Prot					c0.21		0.06	c0.31				
v/s Ratio Perm												c0.01
v/c Ratio					0.56		0.20	0.72				0.16
Uniform Delay, d1					22.8		25.0	20.6				40.1
Progression Factor					1.08		4.50	1.58				1.00
Incremental Delay, d2					1.0		0.4	1.6				0.5
Delay (s)					25.6		112.9	34.1				40.5
Level of Service					C		F	C				D
Approach Delay (s)		0.0			25.6			57.9			40.5	
Approach LOS		A			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	86	799	140	73	682	0	0	883	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5349		1499	3185			3185	936
Flt Permitted				0.95	1.00		0.23	1.00			1.00	1.00
Satd. Flow (perm)				862	5349		370	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	93	868	152	79	741	0	0	960	167
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	93	985	0	79	741	0	0	960	156
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		206	1776			1776	522
v/s Ratio Prot					c0.18			0.23			c0.30	
v/s Ratio Perm				0.11			0.21					0.17
v/c Ratio				0.32	0.55		0.38	0.42			0.54	0.30
Uniform Delay, d1				22.4	24.5		11.2	11.5			12.6	10.6
Progression Factor				0.32	0.29		1.45	1.50			1.94	2.04
Incremental Delay, d2				2.7	1.1		4.8	0.7			0.8	1.0
Delay (s)				9.8	8.3		21.1	17.8			25.3	22.6
Level of Service				A	A		C	B			C	C
Approach Delay (s)		0.0			8.5			18.1			24.9	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	40	884	63	45	506	0	0	343	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5403			3122			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5403			2800			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	43	961	68	49	550	0	0	373	66
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1061	0	0	599	0	0	373	54
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2101			1415			816	404
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.20			0.21				0.07
v/c Ratio					0.50			0.42			0.46	0.13
Uniform Delay, d1					20.9			14.0			14.3	11.8
Progression Factor					0.50			1.51			1.83	2.15
Incremental Delay, d2					0.8			0.8			1.5	0.6
Delay (s)					11.3			22.0			27.8	26.0
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.3			22.0			27.5	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	140	664	0	0	0	0	0	976	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	152	722	0	0	0	0	0	1061	208
RTOR Reduction (vph)	0	0	0	0	40	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	0	0	0	834	0	0	0	0	0	1061	161
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.23	
v/s Ratio Perm					0.15							0.11
v/c Ratio					0.37						0.46	0.22
Uniform Delay, d1					19.5						14.3	12.4
Progression Factor					1.00						0.54	0.48
Incremental Delay, d2					0.5						0.4	0.5
Delay (s)					19.9						8.2	6.4
Level of Service					B						A	A
Approach Delay (s)		0.0			19.9			0.0			7.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1526	171	0	0	0	0	0	0	188	1255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5500	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1659	186	0	0	0	0	0	0	204	1364	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1659	176	0	0	0	0	0	0	0	1556	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2468	
v/s Ratio Prot		c0.29										
v/s Ratio Perm			0.19								0.28	
v/c Ratio		0.64	0.43								0.63	
Uniform Delay, d1		19.3	17.0								19.1	
Progression Factor		1.00	1.00								1.15	
Incremental Delay, d2		1.2	3.2								1.1	
Delay (s)		20.5	20.2								23.0	
Level of Service		C	C								C	
Approach Delay (s)		20.5			0.0			0.0			23.0	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	579	1116	0	0	0	0	0	1495	196	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5044						6420				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5044						6420				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	629	1213	0	0	0	0	0	1625	213	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	347	1471	0	0	0	0	0	1823	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2874				
v/s Ratio Prot								c0.28				
v/s Ratio Perm	c0.41	0.29										
v/c Ratio	0.92	0.65						0.63				
Uniform Delay, d1	23.5	19.5						19.2				
Progression Factor	0.47	0.39						0.80				
Incremental Delay, d2	25.5	1.1						0.8				
Delay (s)	36.4	8.6						16.0				
Level of Service	D	A						B				
Approach Delay (s)		14.1			0.0			16.0			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1037	140	0	0	0	0	747	104	93	854	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.28	1.00	
Satd. Flow (perm)		5664						3185	1425	463	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1127	152	0	0	0	0	812	113	101	928	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	1252	0	0	0	0	0	812	103	101	928	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	252	2491	
v/s Ratio Prot		c0.22						c0.25			0.20	
v/s Ratio Perm									0.07	0.22		
v/c Ratio		0.57						0.47	0.13	0.40	0.37	
Uniform Delay, d1		21.6						12.5	10.1	11.9	11.7	
Progression Factor		0.28						0.43	0.44	0.38	0.40	
Incremental Delay, d2		0.8						0.8	0.3	4.1	0.4	
Delay (s)		6.8						6.1	4.7	8.6	5.1	
Level of Service		A						A	A	A	A	
Approach Delay (s)		6.8			0.0			6.0			5.5	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	143	965	119	0	0	0	0	561	98	0	383	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5151						2938			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5151						2938			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	155	1049	129	0	0	0	0	610	107	0	416	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1313	0	0	0	0	0	713	0	0	416	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2289						1295			712	
v/s Ratio Prot								0.24			c0.26	
v/s Ratio Perm		0.25										
v/c Ratio		0.57						0.55			0.58	
Uniform Delay, d1		18.6						18.6			18.9	
Progression Factor		0.28						1.52			1.05	
Incremental Delay, d2		0.9						1.3			3.2	
Delay (s)		6.1						29.6			23.0	
Level of Service		A						C			C	
Approach Delay (s)		6.1			0.0			29.6			23.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1001	125	0	0	0	0	0	0	212	979	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1088	136	0	0	0	0	0	0	230	1064	0
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	1199	0	0	0	0	0	0	0	0	1271	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.28	
v/c Ratio		0.47									0.62	
Uniform Delay, d1		17.4									18.9	
Progression Factor		0.19									0.93	
Incremental Delay, d2		0.5									1.3	
Delay (s)		3.8									18.9	
Level of Service		A									B	
Approach Delay (s)		3.8			0.0			0.0			18.9	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	253	0	0	431	137	266	1358	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	275	0	0	468	149	289	1476	75	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	55	0	0	0
Lane Group Flow (vph)	105	275	0	0	468	13	289	1476	21	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Effective Green, g (s)	9.4	70.5			57.1	8.1	32.8	32.8	32.8			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	242	1024			1664	96	435	1251	375			
v/s Ratio Prot	c0.03	0.02			c0.02	0.01		c0.32				
v/s Ratio Perm		0.15			0.13		0.18		0.01			
v/c Ratio	0.43	0.27			0.28	0.13	0.66	1.18	0.05			
Uniform Delay, d1	52.8	12.1			19.0	52.6	38.7	43.6	32.2			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.2	0.1			0.1	0.6	7.8	89.5	0.3			
Delay (s)	54.0	12.3			19.1	53.3	46.5	133.1	32.4			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.8			27.4			115.4			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	84.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	251	182	73	406	0	0	0	0	43	1307	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3060						5514	
Flt Permitted		1.00	1.00		0.85						1.00	
Satd. Flow (perm)		1676	932		2627						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	273	198	79	441	0	0	0	0	47	1421	78
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	273	186	0	520	0	0	0	0	0	1537	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1228						2340	
v/s Ratio Prot		0.16										
v/s Ratio Perm			c0.20		0.20						0.28	
v/c Ratio		0.35	0.43		0.42						0.66	
Uniform Delay, d1		15.2	15.9		15.9						20.7	
Progression Factor		1.00	1.00		0.26						1.00	
Incremental Delay, d2		1.2	3.1		1.0						1.5	
Delay (s)		16.5	19.0		5.2						22.1	
Level of Service		B	B		A						C	
Approach Delay (s)		17.5			5.2			0.0			22.1	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	284	59	0	435	77	68	358	66	38	322	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.92			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.97			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2761			3030	
Flt Permitted		1.00	1.00		1.00	1.00		0.84			0.87	
Satd. Flow (perm)		1616	762		3185	650		2332			2643	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	309	64	0	473	84	74	389	72	41	350	15
RTOR Reduction (vph)	0	0	8	0	0	9	0	5	0	0	1	0
Lane Group Flow (vph)	0	309	56	0	473	75	0	530	0	0	405	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		1010			1145	
v/s Ratio Prot		c0.19			0.15							
v/s Ratio Perm			0.07			0.12		c0.23			0.15	
v/c Ratio		0.38	0.15		0.30	0.23		0.52			0.35	
Uniform Delay, d1		13.9	12.1		13.2	12.7		18.7			17.1	
Progression Factor		0.51	0.44		1.19	1.25		0.92			1.00	
Incremental Delay, d2		1.3	0.8		0.4	1.4		1.7			0.9	
Delay (s)		8.4	6.1		16.1	17.3		18.9			17.9	
Level of Service		A	A		B	B		B			B	
Approach Delay (s)		8.0			16.3			18.9			17.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	309	70	39	443	0	0	0	0	196	1367	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.79	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1265	1676					933	3185	959
Flt Permitted		1.00	1.00	0.47	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	623	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	336	76	42	482	0	0	0	0	213	1486	51
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	336	63	42	482	0	0	0	0	213	1486	38
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	276	744					415	1419	427
v/s Ratio Prot		0.20			c0.29						c0.47	
v/s Ratio Perm			0.08	0.07						0.23		0.04
v/c Ratio		0.45	0.17	0.15	0.65					0.51	1.05	0.09
Uniform Delay, d1		17.4	15.0	14.9	19.5					17.9	24.9	14.4
Progression Factor		1.42	1.57	0.43	0.39					2.05	1.91	2.72
Incremental Delay, d2		1.8	0.9	0.9	3.4					3.8	35.6	0.3
Delay (s)		26.5	24.5	7.4	11.0					40.5	83.1	39.5
Level of Service		C	C	A	B					D	F	D
Approach Delay (s)		26.2			10.7			0.0			76.6	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	530	0	0	462	154	110	1288	99	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5256				
Flt Permitted	0.37	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	613	1676			1676	803		5256				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	576	0	0	502	167	120	1400	108	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	48	576	0	0	502	157	0	1616	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	328	899			899	430		1880				
v/s Ratio Prot		c0.34			0.30							
v/s Ratio Perm	0.08					0.20		0.31				
v/c Ratio	0.15	0.64			0.56	0.36		0.86				
Uniform Delay, d1	10.5	14.7			13.8	12.0		26.8				
Progression Factor	0.70	0.67			1.88	2.04		1.03				
Incremental Delay, d2	0.9	3.2			1.7	1.7		0.5				
Delay (s)	8.2	13.1			27.7	26.2		28.2				
Level of Service	A	B			C	C		C				
Approach Delay (s)		12.7			27.3			28.2			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	421	61	21	435	108	0	724	51	0	970	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	0.87	1.00	1.00	0.86	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1378	1676	801	1367	1676	799		3012			2804	
Flt Permitted	0.33	1.00	1.00	0.35	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	486	1676	801	500	1676	799		3012			2804	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	458	66	23	473	117	0	787	55	0	1054	201
RTOR Reduction (vph)	0	0	2	0	0	2	0	4	0	0	4	0
Lane Group Flow (vph)	41	458	64	23	473	115	0	838	0	0	1251	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	232	800	382	238	800	381		1372			1277	
v/s Ratio Prot		0.27			c0.28			0.28			c0.45	
v/s Ratio Perm	0.08		0.08	0.05		0.14						
v/c Ratio	0.18	0.57	0.17	0.10	0.59	0.30		0.61			0.98	
Uniform Delay, d1	13.4	16.9	13.3	12.9	17.1	14.3		18.5			24.1	
Progression Factor	0.93	1.11	0.90	1.91	1.96	1.98		0.62			1.30	
Incremental Delay, d2	1.2	2.2	0.7	0.7	2.9	1.8		1.8			20.2	
Delay (s)	13.7	20.9	12.7	25.3	36.3	30.2		13.3			51.6	
Level of Service	B	C	B	C	D	C		B			D	
Approach Delay (s)		19.4			34.7			13.3			51.6	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	406	37	12	422	58	10	710	57	0	592	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.86	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1377	1676	439	1593	1676	881		2995			1616	
Flt Permitted	0.35	1.00	1.00	0.36	1.00	1.00		0.94			1.00	
Satd. Flow (perm)	503	1676	439	611	1676	881		2820			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	441	40	13	459	63	11	772	62	0	643	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	4	0	0	0	0
Lane Group Flow (vph)	27	441	22	13	459	45	0	841	0	0	643	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	224	746	195	272	746	392		1234			707	
v/s Ratio Prot		0.26			c0.27						c0.40	
v/s Ratio Perm	0.05		0.05	0.02		0.05		0.30				
v/c Ratio	0.12	0.59	0.11	0.05	0.62	0.12		0.68			0.91	
Uniform Delay, d1	14.6	18.8	14.6	14.1	19.1	14.6		20.3			23.6	
Progression Factor	1.08	1.27	1.68	0.88	1.08	1.23		0.79			0.49	
Incremental Delay, d2	0.9	2.8	1.0	0.3	3.3	0.5		1.7			16.2	
Delay (s)	16.7	26.7	25.4	12.8	23.9	18.4		17.7			27.8	
Level of Service	B	C	C	B	C	B		B			C	
Approach Delay (s)		26.0			23.0			17.7			27.8	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	408	71	58	375	0	0	0	0	64	878	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.86	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1372	1676						4400	618
Flt Permitted		1.00	1.00	0.36	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	517	1676						4400	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	77	63	408	0	0	0	0	70	954	139
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	77
Lane Group Flow (vph)	0	443	57	63	408	0	0	0	0	0	1024	62
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	220	713						1965	276
v/s Ratio Prot		c0.26			0.24							
v/s Ratio Perm			0.07	0.12							0.23	0.10
v/c Ratio		0.62	0.16	0.29	0.57						0.52	0.22
Uniform Delay, d1		20.2	15.9	16.9	19.6						18.0	15.3
Progression Factor		1.66	2.08	1.00	1.00						1.42	4.60
Incremental Delay, d2		3.3	0.8	3.3	3.3						0.8	1.5
Delay (s)		36.7	33.9	20.2	22.9						26.2	71.9
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.3			22.6			0.0			31.7	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1990	341	241	2096	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2163	371	262	2278	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	93	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2163	249	169	2278	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	1423				
v/s Ratio Prot					c0.38			c0.50				
v/s Ratio Perm						0.22	0.11					
v/c Ratio					0.85	0.51	0.34	1.60				
Uniform Delay, d1					22.5	18.1	23.9	31.0				
Progression Factor					1.00	1.00	0.75	0.88				
Incremental Delay, d2					3.8	3.7	1.4	272.9				
Delay (s)					26.3	21.8	19.3	300.1				
Level of Service					C	C	B	F				
Approach Delay (s)		0.0			25.6			271.1			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	148.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	1191	105	66	726	0	0	874	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.94	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4416		1505	3185			3185	975
Flt Permitted				0.95	1.00		0.22	1.00			1.00	1.00
Satd. Flow (perm)				1160	4416		353	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	1295	114	72	789	0	0	950	179
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	92	1397	0	72	789	0	0	950	178
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1717		192	1734			1734	530
v/s Ratio Prot					c0.32			0.25			c0.30	
v/s Ratio Perm				0.08			0.20					0.18
v/c Ratio				0.20	0.81		0.38	0.46			0.55	0.34
Uniform Delay, d1				18.3	24.6		11.7	12.4			13.3	11.4
Progression Factor				1.89	1.83		1.79	1.76			1.02	1.09
Incremental Delay, d2				0.8	3.5		4.8	0.8			0.5	0.7
Delay (s)				35.4	48.4		25.9	22.6			14.0	13.1
Level of Service				D	D		C	C			B	B
Approach Delay (s)		0.0			47.6			22.9			13.9	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	71	1146	66	94	722	0	0	434	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5600			3167			1616	936
Flt Permitted					1.00			0.65			1.00	1.00
Satd. Flow (perm)					5600			2076			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	77	1246	72	102	785	0	0	472	212
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	61
Lane Group Flow (vph)	0	0	0	0	1386	0	0	887	0	0	472	151
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2364			1067			497	288
v/s Ratio Prot								c0.08			c0.29	
v/s Ratio Perm					0.25			0.30				0.16
v/c Ratio					0.59			0.83			0.95	0.52
Uniform Delay, d1					20.0			21.1			30.5	25.7
Progression Factor					1.85			1.51			1.67	2.23
Incremental Delay, d2					0.9			5.5			18.6	3.4
Delay (s)					37.9			37.3			69.4	60.6
Level of Service					D			D			E	E
Approach Delay (s)		0.0			37.9			37.3			66.7	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	117	1082	0	0	0	0	0	697	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5564						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5564						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	127	1176	0	0	0	0	0	758	211
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1283	0	0	0	0	0	758	200
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2244						2263	634
v/s Ratio Prot											c0.17	
v/s Ratio Perm					0.23							0.16
v/c Ratio					0.57						0.33	0.32
Uniform Delay, d1					20.8						13.8	13.6
Progression Factor					1.00						1.80	1.91
Incremental Delay, d2					1.1						0.4	1.2
Delay (s)					21.9						25.2	27.2
Level of Service					C						C	C
Approach Delay (s)		0.0			21.9			0.0			25.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	1616	0	0	0	0	0	1380	215	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	1757	0	0	0	0	0	1500	234	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	299	1775	0	0	0	0	0	1500	219	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2079						1585	476			
v/s Ratio Prot								c0.47				
v/s Ratio Perm	0.27	0.33							0.23			
v/c Ratio	0.71	0.85						0.95	0.46			
Uniform Delay, d1	23.5	25.4						21.5	14.7			
Progression Factor	1.00	1.00						1.29	1.54			
Incremental Delay, d2	9.9	4.7						5.4	1.1			
Delay (s)	33.4	30.1						33.1	23.8			
Level of Service	C	C						C	C			
Approach Delay (s)		30.6			0.0			31.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1376	262	0	0	0	0	0	0	164	1307	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5629								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5629								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1496	285	0	0	0	0	0	0	178	1421	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1768	0	0	0	0	0	0	0	166	1421	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2189								785	2845	
v/s Ratio Prot		c0.31									c0.25	
v/s Ratio Perm										0.10		
v/c Ratio		0.81								0.21	0.50	
Uniform Delay, d1		24.5								12.9	15.3	
Progression Factor		1.69								0.50	0.73	
Incremental Delay, d2		1.9								0.5	0.5	
Delay (s)		43.3								6.9	11.7	
Level of Service		D								A	B	
Approach Delay (s)		43.3			0.0			0.0			11.2	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	173	1341	42	0	0	0	0	581	90	94	384	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.98	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5457						2977			3101	
Flt Permitted		0.99						1.00			0.70	
Satd. Flow (perm)		5457						2977			2182	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	1458	46	0	0	0	0	632	98	102	417	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1688	0	0	0	0	0	729	0	0	519	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						47.0			47.0	
Effective Green, g (s)		37.0						47.0			47.0	
Actuated g/C Ratio		0.41						0.52			0.52	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2243						1554			1139	
v/s Ratio Prot								c0.24				
v/s Ratio Perm		0.31									0.24	
v/c Ratio		0.75						0.47			0.46	
Uniform Delay, d1		22.6						13.6			13.5	
Progression Factor		0.98						1.00			0.62	
Incremental Delay, d2		1.6						1.0			1.3	
Delay (s)		23.6						14.6			9.7	
Level of Service		C						B			A	
Approach Delay (s)		23.6			0.0			14.6			9.7	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1630	236	0	0	0	0	0	0	228	1818	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1772	257	0	0	0	0	0	0	248	1976	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1772	244	0	0	0	0	0	0	233	1976	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.39									c0.43	
v/s Ratio Perm			0.21							0.16		
v/c Ratio		0.98	0.52							0.32	0.88	
Uniform Delay, d1		26.8	20.7							13.8	20.5	
Progression Factor		0.70	0.59							0.94	0.75	
Incremental Delay, d2		14.7	3.3							0.8	3.8	
Delay (s)		33.6	15.5							13.9	19.1	
Level of Service		C	B							B	B	
Approach Delay (s)		31.3			0.0			0.0			18.5	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	499	2462	0	0	0	0	0	2010	303	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4415						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4415						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	2676	0	0	0	0	0	2185	329	0	0	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	3208	0	0	0	0	0	2185	315	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		45.1						35.3	35.3			
Effective Green, g (s)		45.1						35.3	35.3			
Actuated g/C Ratio		0.50						0.39	0.39			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		2212						1795	506			
v/s Ratio Prot								c0.48				
v/s Ratio Perm		0.73							0.24			
v/c Ratio		1.45						1.22	0.62			
Uniform Delay, d1		22.4						27.4	22.0			
Progression Factor		1.38						0.75	0.66			
Incremental Delay, d2		204.7						102.7	5.2			
Delay (s)		235.6						123.1	19.9			
Level of Service		F						F	B			
Approach Delay (s)		235.6			0.0			109.6			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	180.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	115.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	1404	52	0	0	0	0	641	67	112	928	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.93	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4426						3050		1482	3185	
Flt Permitted		1.00						1.00		0.27	1.00	
Satd. Flow (perm)		4426						3050		422	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	1526	57	0	0	0	0	697	73	122	1009	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1659	0	0	0	0	0	769	0	122	1009	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		41.0						43.0		43.0	43.0	
Effective Green, g (s)		41.0						43.0		43.0	43.0	
Actuated g/C Ratio		0.46						0.48		0.48	0.48	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2016						1457		201	1521	
v/s Ratio Prot								0.25			c0.32	
v/s Ratio Perm		0.37								0.29		
v/c Ratio		0.82						0.53		0.61	0.66	
Uniform Delay, d1		21.3						16.4		17.3	18.0	
Progression Factor		1.34						0.56		0.43	0.42	
Incremental Delay, d2		0.4						1.1		11.6	2.1	
Delay (s)		29.0						10.4		19.0	9.6	
Level of Service		C						B		B	A	
Approach Delay (s)		29.0			0.0			10.4			10.6	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1393	104	0	0	0	0	828	108	0	538	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4360						3005			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4360						3005			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1514	113	0	0	0	0	900	117	0	585	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	193	1617	0	0	0	0	0	1016	0	0	585	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1899						1352			727	
v/s Ratio Prot		c0.37						0.34			c0.36	
v/s Ratio Perm	0.18											
v/c Ratio	0.41	0.85						0.75			0.80	
Uniform Delay, d1	17.5	22.8						20.6			21.3	
Progression Factor	0.52	0.66						0.77			0.41	
Incremental Delay, d2	1.7	3.3						2.4			4.9	
Delay (s)	10.8	18.4						18.2			13.6	
Level of Service	B	B						B			B	
Approach Delay (s)		17.6			0.0			18.2			13.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	301	936	124	0	0	0	0	1179	91	72	843	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4333						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.13	1.00	
Satd. Flow (perm)	1221	4333						3185	1110	225	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	1017	135	0	0	0	0	1282	99	78	916	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	327	1133	0	0	0	0	0	1282	87	78	916	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1434						1772	617	125	1772	
v/s Ratio Prot		0.26						c0.40			0.29	
v/s Ratio Perm	c0.27								0.08	0.35		
v/c Ratio	0.81	0.79						0.72	0.14	0.62	0.52	
Uniform Delay, d1	27.5	27.3						14.8	9.6	13.6	12.4	
Progression Factor	1.62	1.65						1.64	2.05	1.00	1.00	
Incremental Delay, d2	8.7	2.3						1.7	0.3	21.2	1.1	
Delay (s)	53.3	47.4						26.0	19.9	34.8	13.5	
Level of Service	D	D						C	B	C	B	
Approach Delay (s)		48.7			0.0			25.6			15.2	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	970	206	98	1500	215	247	1348	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.76	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1078	1457	4577	950	1164	3185	1246			
Flt Permitted	0.15	1.00	1.00	0.26	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1078	398	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1054	224	107	1630	234	268	1465	200	0	0	0
RTOR Reduction (vph)	0	0	88	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	187	1054	136	107	1630	134	268	1465	156	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	656	99	1149	238	561	1535	600			
v/s Ratio Prot	c0.08	0.23	0.05		c0.36		0.11	c0.46				
v/s Ratio Perm	0.26		0.08	0.27		0.14	0.12		0.13			
v/c Ratio	0.87	0.60	0.21	1.08	1.42	0.56	0.48	0.95	0.26			
Uniform Delay, d1	22.5	22.2	7.9	33.7	33.7	29.4	15.7	22.4	13.8			
Progression Factor	1.00	1.00	1.00	1.08	1.04	1.23	0.52	0.73	0.28			
Incremental Delay, d2	28.4	1.5	0.2	95.3	191.7	6.0	0.1	2.0	0.1			
Delay (s)	50.9	23.7	8.0	131.8	226.8	42.1	8.2	18.2	4.0			
Level of Service	D	C	A	F	F	D	A	B	A			
Approach Delay (s)		24.8			199.7			15.4			0.0	
Approach LOS		C			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	956	60	51	1245	0	0	0	0	63	1205	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.18	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	295	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1039	65	55	1353	0	0	0	0	68	1310	411
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1039	50	55	1353	0	0	0	0	0	1378	397
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	140	1521						2345	581
v/s Ratio Prot		0.33			c0.42							
v/s Ratio Perm			0.04	0.19							0.24	c0.28
v/c Ratio		0.68	0.07	0.39	0.89						0.59	0.68
Uniform Delay, d1		18.2	12.7	15.1	21.3						20.8	21.9
Progression Factor		0.38	0.12	1.00	1.00						1.70	1.70
Incremental Delay, d2		2.2	0.2	8.1	8.2						0.9	5.5
Delay (s)		9.1	1.8	23.2	29.5						36.1	42.6
Level of Service		A	A	C	C						D	D
Approach Delay (s)		8.7			29.3			0.0			37.6	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	961	40	29	1014	66	91	480	49	28	279	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3128		1593	3086			3043			2886	
Flt Permitted	0.14	1.00		0.17	1.00			0.77			0.88	
Satd. Flow (perm)	233	3128		279	3086			2367			2545	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1045	43	32	1102	72	99	522	53	30	303	115
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	7	0
Lane Group Flow (vph)	132	1085	0	32	1169	0	0	667	0	0	441	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	116	1570		140	1549			951			1023	
v/s Ratio Prot		0.35			0.38							
v/s Ratio Perm	c0.57			0.11				c0.28			0.17	
v/c Ratio	1.14	0.69		0.23	0.75			0.70			0.43	
Uniform Delay, d1	24.9	19.0		14.0	20.0			24.9			21.6	
Progression Factor	1.00	1.00		0.47	0.58			1.00			1.00	
Incremental Delay, d2	125.4	2.5		2.4	2.2			4.3			1.3	
Delay (s)	150.3	21.5		9.0	13.8			29.2			23.0	
Level of Service	F	C		A	B			C			C	
Approach Delay (s)		35.4			13.6			29.2			23.0	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	892	101	101	1198	0	0	0	0	111	1465	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3137		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.17	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3137		283	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	970	110	110	1302	0	0	0	0	121	1592	277
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	1078	0	110	1302	0	0	0	0	121	1592	258
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		141	1592					637	1830	570
v/s Ratio Prot		0.34			c0.41						c0.35	
v/s Ratio Perm				0.39						0.08		0.18
v/c Ratio		0.69		0.78	0.82					0.19	0.87	0.45
Uniform Delay, d1		19.0		20.5	21.1					19.5	27.6	22.0
Progression Factor		0.98		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		1.8		33.8	4.8					0.7	6.0	2.6
Delay (s)		20.5		54.3	25.9					20.1	33.6	24.6
Level of Service		C		D	C					C	C	C
Approach Delay (s)		20.5			28.1			0.0			31.5	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	884	0	0	1131	80	138	931	43	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3131			4529	1327			
Flt Permitted	0.11	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	179	3185			3131			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	961	0	0	1229	87	150	1012	47	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	29	0	0	0
Lane Group Flow (vph)	170	961	0	0	1310	0	0	1162	18	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	91	1631			1603			1710	501			
v/s Ratio Prot		0.30			0.42							
v/s Ratio Perm	c0.95							0.26	0.01			
v/c Ratio	1.87	0.59			0.82			0.68	0.04			
Uniform Delay, d1	21.9	15.3			18.4			23.4	17.7			
Progression Factor	1.00	1.00			0.64			0.52	0.29			
Incremental Delay, d2	429.4	1.6			4.6			1.9	0.1			
Delay (s)	451.3	16.9			16.5			14.1	5.2			
Level of Service	F	B			B			B	A			
Approach Delay (s)		82.2			16.5			13.8			0.0	
Approach LOS		F			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	723	53	43	611	71	43	593	53	49	853	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.97	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1551	3111		1523	3104		1593	3110		1541	3185	1230
Flt Permitted	0.32	1.00		0.28	1.00		0.13	1.00		0.23	1.00	1.00
Satd. Flow (perm)	525	3111		446	3104		216	3110		377	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	786	58	47	664	77	47	645	58	53	927	158
RTOR Reduction (vph)	0	6	0	0	10	0	0	7	0	0	0	80
Lane Group Flow (vph)	70	838	0	47	731	0	47	696	0	53	927	78
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	306	1814		260	1810		74	1071		129	1097	423
v/s Ratio Prot		c0.27			0.24			0.22			c0.29	
v/s Ratio Perm	0.13			0.11			0.22			0.14		0.06
v/c Ratio	0.23	0.46		0.18	0.40		0.64	0.65		0.41	0.85	0.18
Uniform Delay, d1	9.0	10.7		8.7	10.2		24.8	24.9		22.5	27.3	20.7
Progression Factor	2.28	2.19		1.20	0.90		0.48	0.43		1.36	1.38	2.64
Incremental Delay, d2	1.4	0.7		1.2	0.5		32.8	2.8		7.3	6.4	0.7
Delay (s)	22.0	24.1		11.7	9.8		44.7	13.5		38.1	43.9	55.3
Level of Service	C	C		B	A		D	B		D	D	E
Approach Delay (s)		24.0			9.9			15.5			45.2	
Approach LOS		C			A			B			D	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	716	77	89	675	100	35	753	70	0	620	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.96	1.00		0.94	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1527	3053		1502	3042			3178	1263		1616	
Flt Permitted	0.24	1.00		0.24	1.00			0.75	1.00		1.00	
Satd. Flow (perm)	394	3053		374	3042			2377	1263		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	778	84	97	734	109	38	818	76	0	674	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	23	0	0	0
Lane Group Flow (vph)	86	853	0	97	830	0	0	856	53	0	674	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	179	1390		170	1385			1030	547		700	
v/s Ratio Prot		c0.28			0.27						c0.42	
v/s Ratio Perm	0.22			0.26				0.36	0.04			
v/c Ratio	0.48	0.61		0.57	0.60			0.83	0.10		0.96	
Uniform Delay, d1	17.1	18.5		18.0	18.3			22.6	15.1		24.8	
Progression Factor	0.73	0.73		1.50	1.57			0.55	0.45		1.22	
Incremental Delay, d2	8.2	1.9		8.0	1.1			6.5	0.3		17.9	
Delay (s)	20.7	15.4		35.1	29.9			18.9	7.1		48.2	
Level of Service	C	B		D	C			B	A		D	
Approach Delay (s)		15.9			30.5			17.9			48.2	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	174	559	126	87	752	120	69	880	104	60	753	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3097		1593	3120		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.37	1.00		0.11	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1593	3097		618	3120		176	3185	1425	301	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	608	137	95	817	130	75	957	113	65	818	299
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	158
Lane Group Flow (vph)	189	724	0	95	933	0	75	957	64	65	818	141
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1434		203	1029		74	1344	601	127	707	601
v/s Ratio Prot	c0.12	0.23			c0.30			0.30			c0.49	
v/s Ratio Perm				0.15			0.42		0.05	0.22		0.10
v/c Ratio	1.26	0.50		0.47	0.91		1.01	0.71	0.11	0.51	1.16	0.24
Uniform Delay, d1	40.8	16.9		23.9	28.8		26.0	21.5	15.7	19.2	26.0	16.7
Progression Factor	0.83	1.17		1.00	1.00		1.03	1.01	1.57	0.66	0.73	0.46
Incremental Delay, d2	154.9	1.1		7.6	13.0		103.8	3.0	0.3	12.4	84.5	0.8
Delay (s)	188.8	20.9		31.5	41.8		130.6	24.7	25.1	25.1	103.4	8.5
Level of Service	F	C		C	D		F	C	C	C	F	A
Approach Delay (s)		54.9			40.9			31.7			75.1	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	34	50	193	439	325	7	1624	0	9	281	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		197	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	78	37	54	210	477	353	8	1765	0	10	305	35
RTOR Reduction (vph)	0	0	41	0	0	131	0	0	0	0	0	22
Lane Group Flow (vph)	78	37	13	210	477	222	8	1765	0	10	305	13
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.3	17.0	22.0	10.9	20.6	20.6	5.0	44.1		34.1	34.1	34.1
Effective Green, g (s)	7.3	17.0	22.0	10.9	20.6	20.6	5.0	44.1		34.1	34.1	34.1
Actuated g/C Ratio	0.08	0.19	0.24	0.12	0.23	0.23	0.06	0.49		0.38	0.38	0.38
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	250	316	348	192	729	326	88	1560		74	635	539
v/s Ratio Prot	c0.03	0.02	0.00	c0.13	0.15		0.01	c0.55			0.18	
v/s Ratio Perm			0.01			c0.16				0.05		0.01
v/c Ratio	0.31	0.12	0.04	1.09	0.65	0.68	0.09	1.13		0.14	0.48	0.02
Uniform Delay, d1	39.0	30.3	25.9	39.5	31.5	31.7	40.3	22.9		18.3	21.2	17.5
Progression Factor	1.00	1.00	1.00	1.35	1.23	1.44	1.00	1.00		0.65	0.67	1.00
Incremental Delay, d2	0.7	0.2	0.0	86.8	1.8	4.8	0.4	67.8		3.4	2.3	0.1
Delay (s)	39.7	30.4	26.0	140.2	40.6	50.5	40.8	90.7		15.3	16.6	17.6
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.3			64.1			90.5			16.7	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	71.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	47	76	526	0	0	0	0	0	1173	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1666						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1666						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	51	83	572	0	0	0	0	0	1275	228
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	0	38	0	655	0	0	0	0	0	1275	116
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.28	
v/s Ratio Perm			0.03		0.39							0.09
v/c Ratio			0.07		0.89						0.63	0.19
Uniform Delay, d1			14.3		22.9						19.2	15.1
Progression Factor			0.44		1.84						1.52	4.73
Incremental Delay, d2			0.2		10.7						1.3	0.6
Delay (s)			6.5		52.9						30.5	72.3
Level of Service			A		D						C	E
Approach Delay (s)		6.5			52.9			0.0			36.8	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	43	514	131	26	211	0	0	289	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1670	1403		3163			3080	
Flt Permitted					1.00	1.00		0.89			1.00	
Satd. Flow (perm)					1670	1403		2835			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	47	559	142	28	229	0	0	314	65
RTOR Reduction (vph)	0	0	0	0	0	22	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	606	120	0	257	0	0	359	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					41.2	41.2		39.6			39.6	
Effective Green, g (s)					41.2	41.2		39.6			39.6	
Actuated g/C Ratio					0.46	0.46		0.44			0.44	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					764	642		1247			1355	
v/s Ratio Prot											c0.12	
v/s Ratio Perm					0.36	0.09		0.09				
v/c Ratio					0.79	0.19		0.21			0.27	
Uniform Delay, d1					20.8	14.5		15.5			16.0	
Progression Factor					1.62	2.16		1.00			1.00	
Incremental Delay, d2					6.2	0.5		0.4			0.5	
Delay (s)					39.8	31.7		15.9			16.5	
Level of Service					D	C		B			B	
Approach Delay (s)		0.0			38.3			15.9			16.5	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	159	498	0	0	0	0	0	1530	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	173	541	0	0	0	0	0	1663	190
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	0	0	173	541	0	0	0	0	0	1663	102
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.32						c0.36	
v/s Ratio Perm				0.12								0.09
v/c Ratio				0.31	0.83						0.72	0.17
Uniform Delay, d1				19.0	24.6						17.4	12.1
Progression Factor				0.49	0.64						1.00	1.00
Incremental Delay, d2				0.6	4.8						2.0	0.6
Delay (s)				9.8	20.7						19.3	12.7
Level of Service				A	C						B	B
Approach Delay (s)		0.0			18.1			0.0			18.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	598	124	133	1072	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	650	135	145	1165	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	30	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	650	105	0	1293	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					655	513		2288				
v/s Ratio Prot					c0.39							
v/s Ratio Perm						0.08		0.28				
v/c Ratio					0.99	0.20		0.56				
Uniform Delay, d1					27.3	18.1		15.5				
Progression Factor					0.84	0.67		1.00				
Incremental Delay, d2					20.4	0.4		1.0				
Delay (s)					43.1	12.5		16.5				
Level of Service					D	B		B				
Approach Delay (s)		0.0			37.9			16.5			0.0	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	89	696	75	20	579	0	0	940	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1277	1593	3185			3185	1277
Flt Permitted					0.99	1.00	0.14	1.00			1.00	1.00
Satd. Flow (perm)					1657	1277	233	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	757	82	22	629	0	0	1022	75
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	854	69	22	629	0	0	1022	47
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					46.0	46.0	38.0	38.0			38.0	38.0
Effective Green, g (s)					46.0	46.0	38.0	38.0			38.0	38.0
Actuated g/C Ratio					0.51	0.51	0.42	0.42			0.42	0.42
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					846	652	98	1344			1344	539
v/s Ratio Prot								0.20			c0.32	
v/s Ratio Perm					0.52	0.05	0.09					0.04
v/c Ratio					1.01	0.11	0.22	0.47			0.76	0.09
Uniform Delay, d1					22.0	11.4	16.6	18.7			22.1	15.6
Progression Factor					1.35	1.75	1.00	1.00			1.51	2.62
Incremental Delay, d2					23.7	0.2	5.2	1.2			2.7	0.2
Delay (s)					53.4	20.0	21.8	19.9			36.2	41.1
Level of Service					D	C	C	B			D	D
Approach Delay (s)		0.0			50.4			20.0			36.5	
Approach LOS		A			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	37	591	53	66	889	0	0	657	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.71
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1635	998	1593	3185			1616	972
Flt Permitted					1.00	1.00	0.17	1.00			1.00	1.00
Satd. Flow (perm)					1635	998	283	3185			1616	972
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	40	642	58	72	966	0	0	714	240
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	0	682	23	72	966	0	0	714	224
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					654	399	139	1574			799	480
v/s Ratio Prot								0.30			c0.44	
v/s Ratio Perm					0.42	0.02	0.25					0.23
v/c Ratio					1.04	0.06	0.52	0.61			0.89	0.47
Uniform Delay, d1					27.0	16.6	15.5	16.5			20.6	15.0
Progression Factor					0.57	0.22	1.00	1.00			0.93	1.10
Incremental Delay, d2					44.6	0.2	13.1	1.8			9.3	1.9
Delay (s)					59.8	3.8	28.6	18.3			28.4	18.4
Level of Service					E	A	C	B			C	B
Approach Delay (s)		0.0			55.4			19.0			25.9	
Approach LOS		A			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	419	97	51	934	0	0	838	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.23	1.00			1.00	
Satd. Flow (perm)					3159	1425	393	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	92	455	105	55	1015	0	0	911	120
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	547	44	55	1015	0	0	1020	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	266	2158			2121	
v/s Ratio Prot								0.32			c0.33	
v/s Ratio Perm					0.17	0.03	0.14					
v/c Ratio					0.68	0.12	0.21	0.47			0.48	
Uniform Delay, d1					30.2	25.7	5.4	6.9			6.9	
Progression Factor					1.00	1.00	1.00	1.00			1.51	
Incremental Delay, d2					4.5	0.7	1.8	0.7			0.1	
Delay (s)					34.7	26.4	7.2	7.6			10.5	
Level of Service					C	C	A	A			B	
Approach Delay (s)		0.0			33.4			7.6			10.5	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	621	502	229	436	53	66	122	66	182	699	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.91	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.84	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1450	3185	1232	1580	4406		1587	3185	1220	1344	3084	
Flt Permitted	0.44	1.00	1.00	0.26	1.00		0.20	1.00	1.00	0.67	1.00	
Satd. Flow (perm)	678	3185	1232	430	4406		332	3185	1220	945	3084	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	675	546	249	474	58	72	133	72	198	760	88
RTOR Reduction (vph)	0	0	182	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	101	675	364	249	510	0	72	133	51	198	836	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Effective Green, g (s)	23.1	23.1	23.1	34.9	34.9		24.1	24.1	32.9	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	1051	406	358	2196		186	1096	573	230	753	
v/s Ratio Prot		0.21		c0.09	0.12		c0.02	0.04	0.01		c0.27	
v/s Ratio Perm	0.15		c0.30	0.26			0.11		0.03	0.21		
v/c Ratio	0.45	0.64	0.90	0.70	0.23		0.39	0.12	0.09	0.86	1.11	
Uniform Delay, d1	18.5	19.9	22.3	11.4	10.0		17.5	15.7	10.3	25.3	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	3.0	25.1	5.8	0.2		1.3	0.2	0.1	32.0	67.3	
Delay (s)	25.0	23.0	47.5	17.2	10.2		18.8	15.9	10.3	57.3	93.7	
Level of Service	C	C	D	B	B		B	B	B	E	F	
Approach Delay (s)		33.2			12.4			15.2			86.9	
Approach LOS		C			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	135	557	169	190	550	246	23	82	56	151	1171	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1539	3185	1050	3090	3185	1091	1593	3185	1150	1227	3185	1171
Flt Permitted	0.39	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.70	1.00	1.00
Satd. Flow (perm)	633	3185	1050	3090	3185	1091	227	3185	1150	899	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	605	184	207	598	267	25	89	61	164	1273	182
RTOR Reduction (vph)	0	0	79	0	0	116	0	0	16	0	0	46
Lane Group Flow (vph)	147	605	105	207	598	151	25	89	45	164	1273	136
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Effective Green, g (s)	42.6	34.2	34.2	11.3	37.1	37.1	29.5	29.5	40.8	29.5	29.5	37.9
Actuated g/C Ratio	0.47	0.38	0.38	0.13	0.41	0.41	0.33	0.33	0.45	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	384	1210	399	387	1312	449	74	1043	521	294	1043	493
v/s Ratio Prot	0.04	c0.19		c0.07	c0.19			0.03	0.01		c0.40	0.03
v/s Ratio Perm	0.15		0.10			0.14	0.11		0.03	0.18		0.09
v/c Ratio	0.38	0.50	0.26	0.53	0.46	0.34	0.34	0.09	0.09	0.56	1.22	0.28
Uniform Delay, d1	13.9	21.4	19.2	36.9	19.1	18.0	22.9	20.9	14.0	24.9	30.2	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.5	1.6	1.4	1.1	2.0	11.9	0.2	0.1	7.4	108.0	0.3
Delay (s)	14.5	22.8	20.8	38.3	20.3	20.1	34.8	21.1	14.1	32.3	138.3	17.4
Level of Service	B	C	C	D	C	C	C	C	B	C	F	B
Approach Delay (s)		21.1			23.7			20.6			113.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	61.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	571	177	165	754	232	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2086
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2086
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	192	179	820	252	324
RTOR Reduction (vph)	0	116	0	0	0	30
Lane Group Flow (vph)	621	76	179	820	252	294
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.7	27.7	11.7	42.9	17.3	29.0
Effective Green, g (s)	27.7	27.7	11.7	42.9	17.3	29.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.25	0.41
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1260	467	266	1951	763	864
v/s Ratio Prot	c0.19		c0.11	0.26	0.08	c0.06
v/s Ratio Perm		0.06				0.08
v/c Ratio	0.49	0.16	0.67	0.42	0.33	0.34
Uniform Delay, d1	15.9	13.7	27.4	7.1	21.6	14.0
Progression Factor	1.00	1.00	1.06	2.04	1.00	1.00
Incremental Delay, d2	1.4	0.7	3.7	0.4	0.3	0.2
Delay (s)	17.3	14.4	32.7	14.8	21.9	14.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)	16.6			18.0	17.6	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	594	115	105	842	85	51	237	65	60	1095	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1132	1464	3185	1116	1508	3017		1555	3185	927
Flt Permitted	0.17	1.00	1.00	0.41	1.00	1.00	0.16	1.00		0.50	1.00	1.00
Satd. Flow (perm)	285	3185	1132	627	3185	1116	248	3017		812	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	646	125	114	915	92	55	258	71	65	1190	152
RTOR Reduction (vph)	0	0	51	0	0	65	0	34	0	0	0	83
Lane Group Flow (vph)	72	646	74	114	915	27	55	295	0	65	1190	69
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Effective Green, g (s)	27.4	27.4	27.4	20.4	20.4	20.4	26.0	26.0		32.0	32.0	32.0
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.37	0.37		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	185	1246	443	182	928	325	92	1120		403	1456	423
v/s Ratio Prot	0.02	c0.20			c0.29			0.10		0.01	c0.37	
v/s Ratio Perm	0.13		0.07	0.18		0.02	0.22			0.07		0.07
v/c Ratio	0.39	0.52	0.17	0.63	0.99	0.08	0.60	0.26		0.16	0.82	0.16
Uniform Delay, d1	15.5	16.3	13.9	21.5	24.7	18.0	17.8	15.3		10.8	16.5	11.2
Progression Factor	0.98	0.72	0.66	0.99	1.03	3.72	2.05	2.46		1.00	1.00	1.00
Incremental Delay, d2	1.2	1.4	0.7	12.2	23.2	0.4	9.8	0.1		0.2	3.7	0.2
Delay (s)	16.5	13.2	9.8	33.5	48.5	67.4	46.2	37.8		11.0	20.2	11.3
Level of Service	B	B	A	C	D	E	D	D		B	C	B
Approach Delay (s)		13.0			48.5			39.0			18.8	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	547	81	55	744	152	31	336	54	56	536	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	0.89	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1581	3185	1049	1419	3185	1181	1563	4357		1426	2945	
Flt Permitted	0.23	1.00	1.00	0.43	1.00	1.00	0.18	1.00		0.48	1.00	
Satd. Flow (perm)	391	3185	1049	638	3185	1181	299	4357		726	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	595	88	60	809	165	34	365	59	61	583	268
RTOR Reduction (vph)	0	0	18	0	0	87	0	32	0	0	77	0
Lane Group Flow (vph)	121	595	70	60	809	78	34	392	0	61	774	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	1833	603	288	1442	534	93	1369		228	925	
v/s Ratio Prot	c0.03	0.19			c0.25			0.09			c0.26	
v/s Ratio Perm	0.19		0.07	0.09		0.07	0.11			0.08		
v/c Ratio	0.38	0.32	0.12	0.21	0.56	0.15	0.37	0.29		0.27	0.84	
Uniform Delay, d1	8.0	7.7	6.8	11.6	14.0	11.2	18.6	18.1		18.0	22.3	
Progression Factor	0.97	1.17	1.15	1.10	1.16	2.56	1.95	2.19		1.00	1.00	
Incremental Delay, d2	0.7	0.4	0.4	1.3	1.2	0.4	10.5	0.5		2.9	8.9	
Delay (s)	8.4	9.5	8.1	14.1	17.6	29.1	46.8	40.2		20.8	31.2	
Level of Service	A	A	A	B	B	C	D	D		C	C	
Approach Delay (s)		9.2			19.2			40.7			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	492	76	38	620	7	0	0	0	79	1078	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1578	3185	1249	1506	3173						4545	1255
Flt Permitted	0.25	1.00	1.00	0.45	1.00						1.00	1.00
Satd. Flow (perm)	410	3185	1249	718	3173						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	535	83	41	674	8	0	0	0	86	1172	375
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	74	535	62	41	681	0	0	0	0	0	1258	357
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	286	1446	567	233	1033						1785	600
v/s Ratio Prot	0.02	0.17			c0.21							c0.05
v/s Ratio Perm	0.10		0.05	0.06							0.28	0.23
v/c Ratio	0.26	0.37	0.11	0.18	0.66						0.70	0.60
Uniform Delay, d1	11.7	12.5	11.0	16.9	20.3						17.8	13.3
Progression Factor	1.52	1.46	1.85	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	0.7	0.4	1.6	3.3						2.4	1.6
Delay (s)	18.2	19.0	20.7	18.5	23.6						20.2	14.9
Level of Service	B	B	C	B	C						C	B
Approach Delay (s)		19.1			23.3			0.0			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	769	203	197	725	115	214	564	221	130	323	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.95	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.93	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1512	3185	1097	1593	4368		1544	3185	1229	1488	3043	
Flt Permitted	0.30	1.00	1.00	0.17	1.00		0.43	1.00	1.00	0.42	1.00	
Satd. Flow (perm)	478	3185	1097	283	4368		695	3185	1229	658	3043	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	836	221	214	788	125	233	613	240	141	351	57
RTOR Reduction (vph)	0	0	146	0	24	0	0	0	15	0	15	0
Lane Group Flow (vph)	216	836	75	214	889	0	233	613	225	141	393	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	161	1079	371	229	1965		344	1362	621	222	1031	
v/s Ratio Prot		0.26		c0.07	0.20		c0.04	0.19	0.03		0.13	
v/s Ratio Perm	c0.45		0.07	0.35			c0.25		0.16	0.21		
v/c Ratio	1.34	0.77	0.20	0.93	0.45		0.68	0.45	0.36	0.64	0.38	
Uniform Delay, d1	29.8	26.7	21.1	19.6	17.1		20.2	18.2	13.5	25.1	22.6	
Progression Factor	1.00	1.00	1.00	1.96	0.76		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	189.4	5.4	1.2	33.4	0.5		5.2	1.1	0.4	13.1	1.1	
Delay (s)	219.1	32.1	22.3	71.8	13.5		25.5	19.3	13.8	38.1	23.7	
Level of Service	F	C	C	E	B		C	B	B	D	C	
Approach Delay (s)		62.1			24.6			19.4			27.4	
Approach LOS		E			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	246	719	139	200	877	488	33	579	128	60	846	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1589	3185	1190	3090	3185	1248	1514	3185	1316	1543	3185	1121
Flt Permitted	0.17	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	281	3185	1190	3090	3185	1248	229	3185	1316	497	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	267	782	151	217	953	530	36	629	139	65	920	147
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	267	782	103	217	953	482	36	629	122	65	920	130
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Effective Green, g (s)	44.6	35.6	35.6	8.9	35.5	35.5	30.5	30.5	39.4	30.5	30.5	39.5
Actuated g/C Ratio	0.50	0.40	0.40	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	270	1259	470	305	1256	492	77	1079	576	168	1079	491
v/s Ratio Prot	c0.10	0.25		0.07	0.30			0.20	0.02		c0.29	0.03
v/s Ratio Perm	c0.39		0.09			0.39	0.16		0.07	0.13		0.09
v/c Ratio	0.99	0.62	0.22	0.71	0.76	0.98	0.47	0.58	0.21	0.39	0.85	0.27
Uniform Delay, d1	17.0	21.8	18.0	39.3	23.5	26.9	23.4	24.5	15.7	22.6	27.7	16.0
Progression Factor	2.09	0.82	0.96	0.81	1.10	1.09	1.09	1.06	1.02	1.00	1.00	1.00
Incremental Delay, d2	43.3	1.7	0.8	6.4	3.6	32.3	18.2	2.2	0.2	6.6	8.6	0.3
Delay (s)	78.9	19.5	18.1	38.3	29.4	61.6	43.7	28.3	16.2	29.2	36.2	16.3
Level of Service	E	B	B	D	C	E	D	C	B	C	D	B
Approach Delay (s)		32.5			40.6			26.9			33.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	793	75	81	893	652	927
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2379
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2379
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	82	88	971	709	1008
RTOR Reduction (vph)	0	49	0	0	0	16
Lane Group Flow (vph)	862	33	88	971	709	992
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	35.7	35.7	15.4	54.6	25.6	41.0
Effective Green, g (s)	35.7	35.7	15.4	54.6	25.6	41.0
Actuated g/C Ratio	0.40	0.40	0.17	0.61	0.28	0.46
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1263	416	272	1932	878	1083
v/s Ratio Prot	c0.27		0.06	0.30	0.23	c0.16
v/s Ratio Perm		0.03				0.26
v/c Ratio	0.68	0.08	0.32	0.50	0.81	0.92
Uniform Delay, d1	22.5	16.9	32.7	10.0	29.9	22.9
Progression Factor	1.56	3.51	0.78	1.93	1.00	1.00
Incremental Delay, d2	2.5	0.3	0.5	0.7	5.5	11.8
Delay (s)	37.7	59.7	26.0	20.0	35.4	34.7
Level of Service	D	E	C	C	D	C
Approach Delay (s)	39.6			20.5	35.0	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	1018	38	53	643	63	84	702	84	88	878	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.96	1.00	1.00	0.93	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1586	3185	1143	1535	3185	1196	1474	3105		1590	3185	976
Flt Permitted	0.17	1.00	1.00	0.21	1.00	1.00	0.26	1.00		0.17	1.00	1.00
Satd. Flow (perm)	276	3185	1143	342	3185	1196	403	3105		280	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	1107	41	58	699	68	91	763	91	96	954	162
RTOR Reduction (vph)	0	0	23	0	0	50	0	10	0	0	0	88
Lane Group Flow (vph)	272	1107	18	58	699	18	91	844	0	96	954	74
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	38.5	38.5	38.5	23.2	23.2	23.2	31.5	31.5		40.9	40.9	40.9
Effective Green, g (s)	38.5	38.5	38.5	23.2	23.2	23.2	31.5	31.5		40.9	40.9	40.9
Actuated g/C Ratio	0.43	0.43	0.43	0.26	0.26	0.26	0.35	0.35		0.45	0.45	0.45
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	297	1362	488	88	821	308	141	1086		220	1447	443
v/s Ratio Prot	c0.13	0.35			0.22			c0.27		0.03	c0.30	
v/s Ratio Perm	c0.27		0.02	0.17		0.01	0.23			0.17		0.08
v/c Ratio	0.92	0.81	0.04	0.66	0.85	0.06	0.65	0.78		0.44	0.66	0.17
Uniform Delay, d1	19.9	22.6	15.0	29.9	31.8	25.2	24.6	26.1		16.2	19.1	14.5
Progression Factor	1.11	1.10	0.91	0.90	0.95	3.90	1.53	1.49		1.00	1.00	1.00
Incremental Delay, d2	21.1	3.2	0.1	27.0	8.9	0.3	7.0	2.5		1.4	1.1	0.2
Delay (s)	43.2	28.1	13.7	53.9	39.1	98.5	44.5	41.4		17.6	20.2	14.7
Level of Service	D	C	B	D	D	F	D	D		B	C	B
Approach Delay (s)		30.6			45.1			41.7			19.3	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	1093	81	45	719	78	60	562	125	80	426	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.92	1.00	1.00	0.96	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1578	3185	834	1470	3185	1050	1536	4287		1500	2926	
Flt Permitted	0.23	1.00	1.00	0.24	1.00	1.00	0.25	1.00		0.27	1.00	
Satd. Flow (perm)	374	3185	834	367	3185	1050	410	4287		428	2926	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1188	88	49	782	85	65	611	136	87	463	198
RTOR Reduction (vph)	0	0	29	0	0	50	0	24	0	0	53	0
Lane Group Flow (vph)	266	1188	59	49	782	35	65	723	0	87	608	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	37.5	37.5	37.5	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	392	1886	493	152	1327	437	132	1381		137	942	
v/s Ratio Prot	c0.10	0.37			0.25			0.17			c0.21	
v/s Ratio Perm	c0.30		0.07	0.13		0.03	0.16			0.20		
v/c Ratio	0.68	0.63	0.12	0.32	0.59	0.08	0.49	0.52		0.64	0.65	
Uniform Delay, d1	11.2	11.9	8.0	17.7	20.3	15.8	24.6	24.9		26.0	26.1	
Progression Factor	1.36	1.64	1.97	0.59	0.62	0.69	1.08	1.14		1.00	1.00	
Incremental Delay, d2	3.6	1.2	0.4	4.8	1.7	0.3	12.3	1.4		20.3	3.4	
Delay (s)	18.8	20.9	16.3	15.3	14.4	11.2	38.9	29.8		46.3	29.5	
Level of Service	B	C	B	B	B	B	D	C		D	C	
Approach Delay (s)		20.2			14.1			30.5			31.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	1106	52	36	668	6	0	0	0	87	578	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1574	3185	1027	1525	3174						4468	1265
Flt Permitted	0.26	1.00	1.00	0.19	1.00						0.99	1.00
Satd. Flow (perm)	424	3185	1027	310	3174						4468	1265
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	1202	57	39	726	7	0	0	0	95	628	195
RTOR Reduction (vph)	0	0	19	0	1	0	0	0	0	0	0	24
Lane Group Flow (vph)	110	1202	38	39	732	0	0	0	0	0	723	171
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Effective Green, g (s)	47.8	47.8	47.8	36.5	36.5						31.5	39.8
Actuated g/C Ratio	0.53	0.53	0.53	0.41	0.41						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	331	1691	545	125	1287						1563	559
v/s Ratio Prot	0.03	c0.38			0.23							0.03
v/s Ratio Perm	0.15		0.04	0.13							0.16	0.11
v/c Ratio	0.33	0.71	0.07	0.31	0.57						0.46	0.31
Uniform Delay, d1	11.7	15.9	10.3	18.2	20.7						22.7	16.2
Progression Factor	1.21	1.04	1.76	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.5	2.0	0.2	6.4	1.8						1.0	0.3
Delay (s)	14.6	18.6	18.3	24.6	22.5						23.7	16.5
Level of Service	B	B	B	C	C						C	B
Approach Delay (s)		18.2			22.6			0.0			22.1	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix I
Horizon Year (2040) Without Project HCM Analysis Output

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	685	554	253	481	58	73	134	73	200	772	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.92	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.85	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1460	3185	1232	1584	4408		1593	3185	1222	1349	3083	
Flt Permitted	0.42	1.00	1.00	0.22	1.00		0.20	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	646	3185	1232	363	4408		334	3185	1222	936	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	745	602	275	523	63	79	146	79	217	839	98
RTOR Reduction (vph)	0	0	169	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	111	745	433	275	564	0	79	146	58	217	925	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Effective Green, g (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1041	403	337	2197		186	1096	577	228	753	
v/s Ratio Prot		0.23		c0.10	0.13		c0.02	0.05	0.01		c0.30	
v/s Ratio Perm	0.17		c0.35	0.30			0.12		0.03	0.23		
v/c Ratio	0.53	0.72	1.07	0.82	0.26		0.42	0.13	0.10	0.95	1.23	
Uniform Delay, d1	19.1	20.7	23.6	12.1	10.1		17.8	15.8	10.2	26.0	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	4.2	66.2	14.1	0.3		1.6	0.3	0.1	48.3	114.3	
Delay (s)	28.2	24.9	89.8	26.2	10.4		19.3	16.0	10.3	74.3	140.7	
Level of Service	C	C	F	C	B		B	B	B	E	F	
Approach Delay (s)		51.9			15.4			15.4			128.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	613	186	210	607	272	25	89	59	166	1289	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1550	3185	1050	3090	3185	1091	1593	3185	1154	1231	3185	1171
Flt Permitted	0.36	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	581	3185	1050	3090	3185	1091	227	3185	1154	895	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	666	202	228	660	296	27	97	64	180	1401	200
RTOR Reduction (vph)	0	0	80	0	0	107	0	0	16	0	0	46
Lane Group Flow (vph)	162	666	122	228	660	189	27	97	48	180	1401	154
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Effective Green, g (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Actuated g/C Ratio	0.47	0.37	0.37	0.13	0.41	0.41	0.33	0.33	0.46	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	1189	392	408	1309	448	74	1043	530	293	1043	494
v/s Ratio Prot	0.04	c0.21		c0.07	c0.21			0.03	0.01		c0.44	0.03
v/s Ratio Perm	0.17		0.12			0.17	0.12		0.03	0.20		0.10
v/c Ratio	0.45	0.56	0.31	0.56	0.50	0.42	0.36	0.09	0.09	0.61	1.34	0.31
Uniform Delay, d1	14.3	22.3	20.0	36.6	19.7	18.9	23.1	21.0	13.7	25.5	30.2	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.9	2.1	1.7	1.4	2.9	13.3	0.2	0.1	9.3	160.9	0.4
Delay (s)	15.2	24.3	22.1	38.3	21.1	21.8	36.4	21.2	13.8	34.8	191.2	17.7
Level of Service	B	C	C	D	C	C	D	C	B	C	F	B
Approach Delay (s)		22.4			24.6			20.8			155.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	79.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	628	194	182	833	256	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2091
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2091
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	683	211	198	905	278	357
RTOR Reduction (vph)	0	130	0	0	0	22
Lane Group Flow (vph)	683	81	198	905	278	335
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.0	27.0	12.2	42.7	17.5	29.7
Effective Green, g (s)	27.0	27.0	12.2	42.7	17.5	29.7
Actuated g/C Ratio	0.39	0.39	0.17	0.61	0.25	0.42
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228	455	277	1942	772	887
v/s Ratio Prot	c0.21		c0.12	0.28	0.09	c0.07
v/s Ratio Perm		0.07				0.09
v/c Ratio	0.56	0.18	0.71	0.47	0.36	0.38
Uniform Delay, d1	16.8	14.2	27.3	7.4	21.6	13.8
Progression Factor	1.00	1.00	1.06	2.03	1.00	1.00
Incremental Delay, d2	1.8	0.9	3.3	0.3	0.3	0.3
Delay (s)	18.6	15.0	32.2	15.4	21.9	14.1
Level of Service	B	B	C	B	C	B
Approach Delay (s)	17.8			18.4	17.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	654	126	111	930	93	56	258	29	66	1207	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.99		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.96	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1132	1476	3185	1116	1526	3105		1554	3185	927
Flt Permitted	0.17	1.00	1.00	0.38	1.00	1.00	0.16	1.00		0.50	1.00	1.00
Satd. Flow (perm)	288	3185	1132	592	3185	1116	255	3105		822	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	711	137	121	1011	101	61	280	32	72	1312	168
RTOR Reduction (vph)	0	0	51	0	0	72	0	12	0	0	0	91
Lane Group Flow (vph)	79	711	86	121	1011	29	61	300	0	72	1312	77
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Effective Green, g (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.36	0.36		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	186	1237	439	170	919	322	91	1117		419	1465	426
v/s Ratio Prot	0.02	c0.22			c0.32			0.10		0.01	c0.41	
v/s Ratio Perm	0.14		0.08	0.20		0.03	0.24			0.07		0.08
v/c Ratio	0.42	0.57	0.20	0.71	1.10	0.09	0.67	0.27		0.17	0.90	0.18
Uniform Delay, d1	16.4	16.8	14.2	22.3	24.9	18.2	18.9	15.9		10.8	17.4	11.1
Progression Factor	1.03	0.78	0.81	0.98	1.02	2.82	1.96	2.18		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.7	0.9	16.9	57.4	0.4	17.2	0.1		0.2	7.5	0.2
Delay (s)	18.4	14.8	12.4	38.8	82.8	51.6	54.1	34.6		11.0	24.8	11.3
Level of Service	B	B	B	D	F	D	D	C		B	C	B
Approach Delay (s)		14.8			75.9			37.8			22.7	
Approach LOS		B			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	602	46	61	819	168	34	371	59	62	591	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1585	3185	1049	1433	3185	1181	1568	4360		1437	2945	
Flt Permitted	0.20	1.00	1.00	0.40	1.00	1.00	0.18	1.00		0.45	1.00	
Satd. Flow (perm)	337	3185	1049	608	3185	1181	300	4360		684	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	654	50	66	890	183	37	403	64	67	642	295
RTOR Reduction (vph)	0	0	14	0	0	76	0	31	0	0	77	0
Lane Group Flow (vph)	133	654	36	66	890	107	37	436	0	67	860	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	1833	603	275	1442	534	94	1370		214	925	
v/s Ratio Prot	c0.04	0.21			c0.28			0.10			c0.29	
v/s Ratio Perm	0.22		0.03	0.11		0.09	0.12			0.10		
v/c Ratio	0.45	0.36	0.06	0.24	0.62	0.20	0.39	0.32		0.31	0.93	
Uniform Delay, d1	8.4	7.9	6.5	11.8	14.5	11.5	18.8	18.3		18.3	23.3	
Progression Factor	1.09	1.26	1.26	1.09	1.15	1.80	1.81	2.00		1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.2	1.5	1.4	0.6	11.4	0.6		3.8	16.8	
Delay (s)	10.2	10.5	8.4	14.3	18.1	21.3	45.3	37.1		22.0	40.1	
Level of Service	B	B	A	B	B	C	D	D		C	D	
Approach Delay (s)		10.3			18.4			37.7			38.9	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	543	84	42	684	7	0	0	0	88	1186	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1582	3185	1249	1513	3175						4545	1255
Flt Permitted	0.21	1.00	1.00	0.43	1.00						1.00	1.00
Satd. Flow (perm)	348	3185	1249	684	3175						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	590	91	46	743	8	0	0	0	96	1289	412
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	82	590	70	46	750	0	0	0	0	0	1385	394
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	263	1446	567	222	1034						1785	600
v/s Ratio Prot	0.03	0.19			c0.24							c0.06
v/s Ratio Perm	0.11		0.06	0.07							0.30	0.26
v/c Ratio	0.31	0.41	0.12	0.21	0.73						0.78	0.66
Uniform Delay, d1	12.0	12.8	11.0	17.1	20.8						18.6	13.9
Progression Factor	1.52	1.46	1.81	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	0.8	0.4	2.1	4.4						3.4	2.6
Delay (s)	18.9	19.5	20.4	19.2	25.3						21.9	16.5
Level of Service	B	B	C	B	C						C	B
Approach Delay (s)		19.6			24.9			0.0			20.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	5	16	53	60	84	12	64	6	41	1310	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.93	1.00	1.00
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2749		1593	2873		1593	3115		1474	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.70	1.00	1.00
Satd. Flow (perm)	1593	2749		1593	2873		206	3115		1093	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	5	17	58	65	91	13	70	7	45	1424	357
RTOR Reduction (vph)	0	12	0	0	68	0	0	4	0	0	0	90
Lane Group Flow (vph)	30	10	0	58	88	0	13	73	0	45	1424	267
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Effective Green, g (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Actuated g/C Ratio	0.07	0.28		0.04	0.25		0.47	0.47		0.47	0.47	0.54
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	113	773		68	726		95	1450		509	1483	698
v/s Ratio Prot	0.02	0.00		c0.04	c0.03			0.02			c0.45	0.03
v/s Ratio Perm							0.06			0.04		0.18
v/c Ratio	0.27	0.01		0.85	0.12		0.14	0.05		0.09	0.96	0.38
Uniform Delay, d1	30.8	18.1		33.3	20.2		10.7	10.2		10.4	18.1	9.4
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0		60.8	0.1		3.0	0.1		0.3	15.6	0.4
Delay (s)	32.0	18.1		94.1	20.2		19.2	15.4		10.8	33.7	9.8
Level of Service	C	B		F	C		B	B		B	C	A
Approach Delay (s)		26.2			40.2			16.0			28.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	439	471	0	111	31	86	361	57	22	1243	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.97		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.90	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3012		1574	3035		1438	3185	1239
Flt Permitted		1.00	1.00		1.00		0.12	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1676	1326		3012		203	3035		735	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	477	512	0	121	34	93	392	62	24	1351	148
RTOR Reduction (vph)	0	0	23	0	21	0	0	18	0	0	0	79
Lane Group Flow (vph)	0	477	489	0	134	0	93	436	0	24	1351	69
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Effective Green, g (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Actuated g/C Ratio		0.39	0.39		0.39		0.47	0.47		0.47	0.47	0.47
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		646	511		1161		94	1413		342	1483	577
v/s Ratio Prot		0.28			0.04			0.14			0.42	
v/s Ratio Perm			c0.37				c0.46			0.03		0.06
v/c Ratio		0.74	0.96		0.12		0.99	0.31		0.07	0.91	0.12
Uniform Delay, d1		18.5	20.9		13.8		18.5	11.7		10.3	17.4	10.6
Progression Factor		1.00	1.00		1.57		1.38	1.44		0.31	0.49	0.06
Incremental Delay, d2		7.4	30.5		0.2		79.3	0.4		0.2	5.6	0.2
Delay (s)		25.9	51.5		21.9		104.8	17.3		3.4	14.1	0.8
Level of Service		C	D		C		F	B		A	B	A
Approach Delay (s)		39.1			21.9			32.2			12.7	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	617	82	0	427	44	58	387	143	0	653	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2884			1676	
Flt Permitted		1.00	1.00		1.00	1.00	0.15	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	258	2884			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	671	89	0	464	48	63	421	155	0	710	0
RTOR Reduction (vph)	0	0	51	0	0	27	0	26	0	0	0	0
Lane Group Flow (vph)	0	671	38	0	464	21	63	550	0	0	710	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		30.0	30.0		30.0	30.0	29.6	29.6			20.6	
Effective Green, g (s)		30.0	30.0		30.0	30.0	29.6	29.6			20.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.42	0.42			0.29	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		718	489		718	565	177	1219			493	
v/s Ratio Prot		c0.40			0.28		0.02	c0.19			c0.42	
v/s Ratio Perm			0.03			0.02	0.13					
v/c Ratio		0.93	0.08		0.65	0.04	0.36	0.45			1.44	
Uniform Delay, d1		19.1	11.8		15.8	11.6	28.0	14.4			24.7	
Progression Factor		0.92	1.88		1.20	1.00	1.74	1.56			0.51	
Incremental Delay, d2		19.2	0.3		3.3	0.1	1.1	0.2			204.4	
Delay (s)		36.7	22.5		22.3	11.7	49.7	22.7			217.1	
Level of Service		D	C		C	B	D	C			F	
Approach Delay (s)		35.1			21.3			25.3			217.1	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	79.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	394	345	118	394	0	0	0	0	30	1272	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1490	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.30	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	465	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	428	375	128	428	0	0	0	0	33	1383	110
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	428	360	128	428	0	0	0	0	33	1383	59
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	154	555					721	1706	362
v/s Ratio Prot		0.26			0.26						c0.43	
v/s Ratio Perm			c0.31	0.28						0.02		0.09
v/c Ratio		0.77	0.92	0.83	0.77					0.05	0.81	0.16
Uniform Delay, d1		21.0	22.5	21.6	21.0					7.7	13.3	8.3
Progression Factor		0.83	0.84	1.00	1.00					0.29	0.31	0.00
Incremental Delay, d2		6.1	20.5	38.3	10.0					0.1	3.2	0.7
Delay (s)		23.6	39.4	59.9	31.0					2.3	7.3	0.7
Level of Service		C	D	E	C					A	A	A
Approach Delay (s)		31.0			37.6			0.0			6.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	25	62	21	66	1241	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1544	3185	3185	993
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	239	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	67	23	72	1349	201
RTOR Reduction (vph)	0	5	0	0	0	45
Lane Group Flow (vph)	27	62	23	72	1349	156
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.3	16.3	44.0	44.0	44.0	44.0
Effective Green, g (s)	16.3	16.3	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	355	495	150	2002	2002	624
v/s Ratio Prot				0.02	c0.42	
v/s Ratio Perm	0.02	c0.03	0.10			0.16
v/c Ratio	0.08	0.13	0.15	0.04	0.67	0.25
Uniform Delay, d1	21.0	21.2	5.3	4.9	8.4	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.18	0.00
Incremental Delay, d2	0.1	0.1	2.2	0.0	0.9	0.5
Delay (s)	21.1	21.3	7.5	5.0	2.4	0.5
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.6	2.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1562	189	64	460	0	0	1216	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3110		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3110		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1698	205	70	500	0	0	1322	252
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	117	1890	0	70	500	0	0	1322	249
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.61			0.16			c0.42	
v/s Ratio Perm				0.08			0.31					0.20
v/c Ratio				0.16	1.25		0.73	0.37			0.97	0.48
Uniform Delay, d1				10.1	18.0		16.6	13.6			19.5	14.4
Progression Factor				2.00	1.81		0.99	0.92			0.90	0.79
Incremental Delay, d2				0.0	113.7		35.3	0.7			9.2	1.2
Delay (s)				20.2	146.3		51.8	13.1			26.7	12.4
Level of Service				C	F		D	B			C	B
Approach Delay (s)		0.0			139.0			17.9			24.4	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	79.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	16	1776	64	89	484	0	0	307	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3140			1676	1300
Flt Permitted				0.95	1.00	1.00		0.83			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2633			1676	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	17	1930	70	97	526	0	0	334	341
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	0	81
Lane Group Flow (vph)	0	0	0	17	1930	28	0	623	0	0	334	260
Confl. Peds. (#/hr)				62		61	55					55
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1222			778	603
v/s Ratio Prot					c0.61						0.20	
v/s Ratio Perm				0.01		0.02		c0.24				0.20
v/c Ratio				0.03	1.50	0.05		0.51			0.43	0.43
Uniform Delay, d1				12.6	20.9	12.8		13.2			12.5	12.6
Progression Factor				1.90	1.73	5.16		0.89			0.14	0.10
Incremental Delay, d2				0.0	228.0	0.0		0.3			0.2	0.2
Delay (s)				24.0	264.2	65.8		11.9			2.0	1.4
Level of Service				C	F	E		B			A	A
Approach Delay (s)		0.0			255.3			11.9			1.7	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	157.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	485	1494	0	0	0	0	0	1184	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	527	1624	0	0	0	0	0	1287	201
RTOR Reduction (vph)	0	0	0	15	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	512	1624	0	0	0	0	0	1287	185
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.51						c0.28	
v/s Ratio Perm				0.35								0.15
v/c Ratio				0.82	1.18						0.65	0.35
Uniform Delay, d1				17.5	19.9						15.7	13.2
Progression Factor				1.00	1.00						0.89	0.96
Incremental Delay, d2				11.6	89.6						0.9	0.9
Delay (s)				29.1	109.5						14.7	13.6
Level of Service				C	F						B	B
Approach Delay (s)		0.0			89.8			0.0			14.6	
Approach LOS		A			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	634	1428	0	0	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	689	1552	0	0	48	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	689	1552	0	0	48	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.5	59.2			4.3	
Effective Green, g (s)	39.5	59.2			4.3	
Actuated g/C Ratio	0.56	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1743	5742			189	
v/s Ratio Prot	c0.22	c0.23				
v/s Ratio Perm					c0.02	
v/c Ratio	0.40	0.27			0.25	
Uniform Delay, d1	8.6	1.1			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.7	0.1			0.7	
Delay (s)	9.2	1.2			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.7	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	969	185	0	0	0	0	743	112	60	234	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4446		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4446		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	1053	201	0	0	0	0	808	122	65	254	0
RTOR Reduction (vph)	0	0	122	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	258	1053	79	0	0	0	0	904	0	65	254	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1587		158	780	
v/s Ratio Prot		0.18						c0.20		0.02	c0.15	
v/s Ratio Perm	c0.23		0.06									
v/c Ratio	0.59	0.46	0.15					0.57		0.41	0.33	
Uniform Delay, d1	16.8	15.8	13.7					18.2		32.2	11.8	
Progression Factor	1.21	1.17	2.38					1.09		1.00	1.00	
Incremental Delay, d2	5.8	0.7	0.6					1.3		1.7	1.1	
Delay (s)	26.2	19.1	33.2					21.0		33.9	12.9	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		22.2			0.0			21.0			17.2	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	840	152	0	0	0	0	484	80	162	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.94	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5471						3040		1493	3185	
Flt Permitted		0.99						1.00		0.36	1.00	
Satd. Flow (perm)		5471						3040		563	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	913	165	0	0	0	0	526	87	176	1276	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	0	1231	0	0	0	0	0	594	0	176	1276	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1346		249	1410	
v/s Ratio Prot								0.20			c0.40	
v/s Ratio Perm		0.22								0.31		
v/c Ratio		0.51						0.44		0.71	0.90	
Uniform Delay, d1		14.0						13.5		15.8	18.1	
Progression Factor		1.17						1.59		0.90	0.96	
Incremental Delay, d2		0.7						1.0		7.0	4.6	
Delay (s)		17.1						22.4		21.3	22.0	
Level of Service		B						C		C	C	
Approach Delay (s)		17.1			0.0			22.4			21.9	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	892	81	0	0	0	0	490	99	0	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5405						2939			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5405						2939			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	970	88	0	0	0	0	533	108	0	442	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1139	0	0	0	0	0	621	0	0	442	0
Confl. Peds. (#/hr)	217		174						257	257		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2702						1037			591	
v/s Ratio Prot								0.21			c0.26	
v/s Ratio Perm		0.21										
v/c Ratio		0.42						0.60			0.75	
Uniform Delay, d1		11.1						18.6			19.9	
Progression Factor		1.84						1.18			1.06	
Incremental Delay, d2		0.4						2.0			8.1	
Delay (s)		20.9						23.8			29.2	
Level of Service		C						C			C	
Approach Delay (s)		20.9			0.0			23.8			29.2	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	181	0	0	0	0	0	0	134	1339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5396									4508	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5396									4508	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	197	0	0	0	0	0	0	146	1455	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	986	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.35	
v/c Ratio		0.36									0.96	
Uniform Delay, d1		10.6									21.8	
Progression Factor		1.73									0.91	
Incremental Delay, d2		0.3									11.9	
Delay (s)		18.6									31.8	
Level of Service		B									C	
Approach Delay (s)		18.6			0.0			0.0			31.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	410	1319	226	0	0	0	0	850	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5635						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5635						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	446	1434	246	0	0	0	0	924	222
RTOR Reduction (vph)	0	0	0	35	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	313	1723	0	0	0	0	0	924	204
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2415						1961	415
v/s Ratio Prot											0.20	
v/s Ratio Perm				c0.35	0.31							c0.21
v/c Ratio				0.82	0.71						0.47	0.49
Uniform Delay, d1				17.6	16.5						14.3	14.5
Progression Factor				0.93	0.91						1.00	1.00
Incremental Delay, d2				10.8	1.1						0.8	4.1
Delay (s)				27.1	16.0						15.1	18.6
Level of Service				C	B						B	B
Approach Delay (s)		0.0			17.8			0.0			15.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1384	120	399	851	0	0	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5535		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5535		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1504	130	434	925	0	0	0	229
RTOR Reduction (vph)	0	0	0	0	20	0	321	0	0	0	0	211
Lane Group Flow (vph)	0	0	0	0	1614	0	113	925	0	0	0	18
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.29		0.04	c0.20				
v/s Ratio Perm												c0.01
v/c Ratio					1.08		0.14	0.42				0.09
Uniform Delay, d1					25.6		19.9	11.9				29.9
Progression Factor					1.56		1.42	1.00				1.00
Incremental Delay, d2					45.5		0.3	0.5				0.2
Delay (s)					85.3		28.6	12.4				30.1
Level of Service					F		C	B				C
Approach Delay (s)		0.0			85.3			17.6			30.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	1389	97	64	411	0	0	1058	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5588		1537	3185			3185	960
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1004	5588		209	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	1510	105	70	447	0	0	1150	276
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	99	1600	0	70	447	0	0	1150	259
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		93	1419			1419	427
v/s Ratio Prot					c0.29			0.14			c0.36	
v/s Ratio Perm				0.10			0.33					0.27
v/c Ratio				0.24	0.69		0.75	0.32			0.81	0.61
Uniform Delay, d1				13.3	16.8		16.2	12.5			16.8	14.7
Progression Factor				0.26	0.36		0.97	0.83			0.48	0.33
Incremental Delay, d2				1.1	1.4		42.1	0.6			2.5	3.1
Delay (s)				4.5	7.5		57.8	10.9			10.5	8.0
Level of Service				A	A		E	B			B	A
Approach Delay (s)		0.0			7.3			17.3			10.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	1376	76	46	691	0	0	305	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3175			1676	1021
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2905			1676	1021
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	26	1496	83	50	751	0	0	332	114
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1594	0	0	801	0	0	332	97
Confl. Peds. (#/hr)				475		328						224
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1265			730	444
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.29			c0.28				0.09
v/c Ratio					0.67			0.63			0.45	0.22
Uniform Delay, d1					16.0			15.4			13.9	12.3
Progression Factor					0.69			0.24			0.43	0.26
Incremental Delay, d2					1.4			2.0			1.4	0.8
Delay (s)					12.5			5.8			7.4	4.0
Level of Service					B			A			A	A
Approach Delay (s)		0.0			12.5			5.8			6.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	119	889	0	0	0	0	0	1423	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	129	966	0	0	0	0	0	1547	370
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	0	1082	0	0	0	0	0	1547	339
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.34	
v/s Ratio Perm					0.19							0.24
v/c Ratio					0.44						0.78	0.55
Uniform Delay, d1					13.9						16.8	14.6
Progression Factor					1.00						1.08	1.03
Incremental Delay, d2					0.6						1.9	2.1
Delay (s)					14.4						20.0	17.2
Level of Service					B						C	B
Approach Delay (s)		0.0			14.4			0.0			19.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1395	262	0	0	0	0	0	0	142	1247	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1516	285	0	0	0	0	0	0	154	1355	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1516	271	0	0	0	0	0	0	0	1494	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.26										
v/s Ratio Perm			c0.27								0.27	
v/c Ratio		0.61	0.63								0.61	
Uniform Delay, d1		15.3	15.4								15.3	
Progression Factor		1.00	1.00								1.59	
Incremental Delay, d2		1.1	6.7								1.0	
Delay (s)		16.4	22.1								25.3	
Level of Service		B	C								C	
Approach Delay (s)		17.3			0.0			0.0			25.3	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	451	1092	0	0	0	0	0	1259	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6361				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6361				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	490	1187	0	0	0	0	0	1368	217	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	308	1339	0	0	0	0	0	1570	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2753				
v/s Ratio Prot								c0.25				
v/s Ratio Perm	c0.33	0.26										
v/c Ratio	0.77	0.60						0.57				
Uniform Delay, d1	16.9	15.2						14.9				
Progression Factor	0.24	0.20						1.70				
Incremental Delay, d2	10.8	0.9						0.7				
Delay (s)	14.9	4.0						26.2				
Level of Service	B	A						C				
Approach Delay (s)		6.1			0.0			26.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	805	201	0	0	0	0	333	100	160	952	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.97						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5595						3075		1593	4577	
Flt Permitted		1.00						1.00		0.44	1.00	
Satd. Flow (perm)		5595						3075		731	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	875	218	0	0	0	0	362	109	174	1035	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	40	0	0	0	0
Lane Group Flow (vph)	0	1065	0	0	0	0	0	431	0	174	1035	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						32.0		32.0	32.0	
Effective Green, g (s)		32.0						32.0		32.0	32.0	
Actuated g/C Ratio		0.46						0.46		0.46	0.46	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2557						1405		334	2092	
v/s Ratio Prot		c0.19						0.14			0.23	
v/s Ratio Perm										c0.24		
v/c Ratio		0.42						0.31		0.52	0.49	
Uniform Delay, d1		12.7						12.0		13.5	13.3	
Progression Factor		0.50						0.76		0.82	0.80	
Incremental Delay, d2		0.4						0.5		3.6	0.5	
Delay (s)		6.8						9.7		14.7	11.2	
Level of Service		A						A		B	B	
Approach Delay (s)		6.8			0.0			9.7			11.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	884	67	0	0	0	0	655	68	0	323	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5500						3106			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5500						3106			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	961	73	0	0	0	0	712	74	0	351	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	1105	0	0	0	0	0	780	0	0	351	0
Confl. Peds. (#/hr)	69		208						75			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		29.0						30.7			30.7	
Effective Green, g (s)		29.0						30.7			30.7	
Actuated g/C Ratio		0.41						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2278						1362			735	
v/s Ratio Prot								c0.25			0.21	
v/s Ratio Perm		0.20										
v/c Ratio		0.49						0.57			0.48	
Uniform Delay, d1		15.0						14.7			14.0	
Progression Factor		0.40						1.77			2.16	
Incremental Delay, d2		0.7						1.4			2.0	
Delay (s)		6.6						27.4			32.1	
Level of Service		A						C			C	
Approach Delay (s)		6.6			0.0			27.4			32.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	875	81	0	0	0	0	0	0	107	1298	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	951	88	0	0	0	0	0	0	116	1411	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1032	0	0	0	0	0	0	0	0	1512	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.33	
v/c Ratio		0.42									0.76	
Uniform Delay, d1		13.7									16.7	
Progression Factor		0.15									0.83	
Incremental Delay, d2		0.5									1.8	
Delay (s)		2.6									15.7	
Level of Service		A									B	
Approach Delay (s)		2.6			0.0			0.0			15.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	279	0	0	441	127	357	1450	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	1425			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	303	0	0	479	138	388	1576	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	89	0	0	0
Lane Group Flow (vph)	108	303	0	0	479	6	388	1576	24	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Effective Green, g (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.09	0.62			0.49	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	275	1129			1735	62	342	984	306			
v/s Ratio Prot	c0.03	c0.01			c0.01	0.00		c0.34				
v/s Ratio Perm		0.17			0.14		0.24		0.02			
v/c Ratio	0.39	0.27			0.28	0.10	1.13	1.60	0.08			
Uniform Delay, d1	43.0	8.7			15.1	45.9	39.2	39.2	31.3			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.1			0.1	0.7	90.3	275.5	0.5			
Delay (s)	43.9	8.9			15.2	46.6	129.5	314.8	31.9			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.1			22.2			264.8			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	183.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	247	190	95	438	0	0	0	0	176	991	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.97						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3048						5093	
Flt Permitted		1.00	1.00		0.82						0.99	
Satd. Flow (perm)		1676	971		2523						5093	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	268	207	103	476	0	0	0	0	191	1077	118
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	268	195	0	579	0	0	0	0	0	1369	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1180						2161	
v/s Ratio Prot		0.16										
v/s Ratio Perm			0.20		c0.23						0.27	
v/c Ratio		0.34	0.43		0.49						0.63	
Uniform Delay, d1		15.2	16.0		16.5						20.4	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.2	3.0		1.5						1.4	
Delay (s)		16.4	18.9		18.0						21.8	
Level of Service		B	B		B						C	
Approach Delay (s)		17.5			18.0			0.0			21.8	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	279	58	0	505	105	61	388	72	29	243	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1676	949		3185	775		2805			2975	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.88	
Satd. Flow (perm)		1676	949		3185	775		2477			2641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	303	63	0	549	114	66	422	78	32	264	29
RTOR Reduction (vph)	0	0	30	0	0	17	0	18	0	0	1	0
Lane Group Flow (vph)	0	303	33	0	549	97	0	548	0	0	324	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		814	460		1547	376		1061			1131	
v/s Ratio Prot		c0.18			0.17							
v/s Ratio Perm			0.03			0.13		c0.22			0.12	
v/c Ratio		0.37	0.07		0.35	0.26		0.52			0.29	
Uniform Delay, d1		11.3	9.6		11.2	10.6		14.7			13.0	
Progression Factor		1.00	1.00		0.14	0.06		1.40			1.00	
Incremental Delay, d2		1.3	0.3		0.5	1.2		1.6			0.6	
Delay (s)		12.6	9.9		2.1	1.8		22.1			13.7	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		12.1			2.0			22.1			13.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	101	55	516	0	0	0	0	135	882	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.50	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	843	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	315	110	60	561	0	0	0	0	147	959	92
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	315	93	60	561	0	0	0	0	147	959	56
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	361	718					513	1369	445
v/s Ratio Prot		0.19			c0.33						c0.30	
v/s Ratio Perm			0.10	0.07						0.12		0.05
v/c Ratio		0.44	0.23	0.17	0.78					0.29	0.70	0.12
Uniform Delay, d1		14.1	12.7	12.3	17.2					13.0	16.3	12.0
Progression Factor		0.78	0.79	1.71	1.70					0.99	0.81	1.22
Incremental Delay, d2		1.8	1.2	0.7	5.7					1.1	2.4	0.5
Delay (s)		12.9	11.3	21.7	34.9					13.9	15.6	15.1
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		12.4			33.7			0.0			15.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	475	0	0	452	195	85	1287	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5464				
Flt Permitted	0.25	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	425	1676			1676	976		5464				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	516	0	0	491	212	92	1399	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	11	0	0	0	0
Lane Group Flow (vph)	37	516	0	0	491	194	0	1563	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	153	605			605	352		2747				
v/s Ratio Prot		c0.31			0.29							
v/s Ratio Perm	0.09					0.20		0.29				
v/c Ratio	0.24	0.85			0.81	0.55		0.57				
Uniform Delay, d1	15.6	20.6			20.2	17.8		12.1				
Progression Factor	0.77	0.77			1.36	1.48		0.74				
Incremental Delay, d2	3.6	13.7			6.2	3.2		0.6				
Delay (s)	15.6	29.6			33.6	29.5		9.6				
Level of Service	B	C			C	C		A				
Approach Delay (s)		28.6			32.4			9.6			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	305	56	24	543	50	0	426	63	0	943	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2912			2950	
Flt Permitted	0.18	1.00	1.00	0.44	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	307	1676	929	736	1676	961		2912			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	332	61	26	590	54	0	463	68	0	1025	151
RTOR Reduction (vph)	0	0	13	0	0	29	0	12	0	0	10	0
Lane Group Flow (vph)	25	332	48	26	590	25	0	519	0	0	1167	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	127	694	384	304	694	398		1456			1475	
v/s Ratio Prot		0.20			c0.35			0.18			c0.40	
v/s Ratio Perm	0.08		0.05	0.04		0.03						
v/c Ratio	0.20	0.48	0.13	0.09	0.85	0.06		0.36			0.79	
Uniform Delay, d1	13.1	15.0	12.7	12.4	18.5	12.3		10.6			14.5	
Progression Factor	0.24	0.23	0.12	1.71	1.68	2.91		1.59			0.76	
Incremental Delay, d2	1.9	1.3	0.4	0.4	9.8	0.2		0.6			3.9	
Delay (s)	5.1	4.8	1.8	21.7	40.9	36.2		17.6			15.0	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.4			39.8			17.6			15.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	295	31	12	500	25	8	700	56	0	434	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3029			1676	
Flt Permitted	0.26	1.00	1.00	0.49	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	434	1676	621	819	1676	964		2878			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	321	34	13	543	27	9	761	61	0	472	0
RTOR Reduction (vph)	0	0	19	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	21	321	15	13	543	11	0	823	0	0	472	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	180	696	269	340	696	400		1249			727	
v/s Ratio Prot		0.19			c0.32						0.28	
v/s Ratio Perm	0.05		0.02	0.02		0.01		c0.29				
v/c Ratio	0.12	0.46	0.05	0.04	0.78	0.03		0.66			0.65	
Uniform Delay, d1	12.6	14.8	11.5	12.1	17.7	12.1		15.7			15.6	
Progression Factor	0.39	0.48	2.66	1.63	1.32	2.98		0.20			0.66	
Incremental Delay, d2	1.2	2.0	0.4	0.2	7.0	0.1		1.9			4.1	
Delay (s)	6.1	9.0	30.9	20.0	30.4	36.2		5.0			14.3	
Level of Service	A	A	C	B	C	D		A			B	
Approach Delay (s)		10.8			30.4			5.0			14.3	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	294	79	71	434	0	0	0	0	50	1073	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.82	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1299	1676						4503	987
Flt Permitted		1.00	1.00	0.51	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	693	1676						4503	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	320	86	77	472	0	0	0	0	54	1166	148
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	320	60	77	472	0	0	0	0	0	1220	62
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	290	701						1878	411
v/s Ratio Prot		0.19			c0.28							
v/s Ratio Perm			0.06	0.11							0.27	0.06
v/c Ratio		0.46	0.15	0.27	0.67						0.65	0.15
Uniform Delay, d1		14.6	12.6	13.3	16.5						16.3	12.7
Progression Factor		0.39	0.11	1.00	1.00						0.18	0.06
Incremental Delay, d2		1.9	0.7	2.2	5.1						1.1	0.5
Delay (s)		7.7	2.1	15.5	21.6						4.1	1.3
Level of Service		A	A	B	C						A	A
Approach Delay (s)		6.5			20.7			0.0			3.8	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1705	170	356	1790	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1853	185	387	1946	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	76	117	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1853	109	270	1946	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	1678				
v/s Ratio Prot					c0.32			c0.43				
v/s Ratio Perm						0.10	0.25					
v/c Ratio					0.83	0.25	0.67	1.16				
Uniform Delay, d1					25.0	18.8	23.9	28.5				
Progression Factor					1.00	1.00	0.59	0.76				
Incremental Delay, d2					3.9	1.4	0.8	72.6				
Delay (s)					28.9	20.2	15.0	94.3				
Level of Service					C	C	B	F				
Approach Delay (s)		0.0			28.1			81.1			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1144	73	64	480	0	0	758	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1517	3185			3185	1154
Flt Permitted				0.95	1.00		0.29	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		456	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1243	79	70	522	0	0	824	187
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	107	1312	0	70	522	0	0	824	186
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		260	1820			1820	659
v/s Ratio Prot					c0.29			0.16			c0.26	
v/s Ratio Perm				0.08			0.15					0.16
v/c Ratio				0.23	0.85		0.27	0.29			0.45	0.28
Uniform Delay, d1				16.4	21.3		7.6	7.7			8.7	7.7
Progression Factor				0.43	0.36		0.19	0.22			1.14	1.19
Incremental Delay, d2				1.0	5.1		2.2	0.4			0.5	0.7
Delay (s)				8.1	12.7		3.7	2.0			10.4	9.8
Level of Service				A	B		A	A			B	A
Approach Delay (s)		0.0			12.3			2.2			10.3	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	31	1126	47	96	728	0	0	319	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5690			3167			1676	1187
Flt Permitted					1.00			0.79			1.00	1.00
Satd. Flow (perm)					5690			2515			1676	1187
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	34	1224	51	104	791	0	0	347	191
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	91
Lane Group Flow (vph)	0	0	0	0	1301	0	0	895	0	0	347	100
Confl. Peds. (#/hr)				56		67						113
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					27.0			32.7			20.7	20.7
Effective Green, g (s)					27.0			32.7			20.7	20.7
Actuated g/C Ratio					0.39			0.47			0.30	0.30
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2194			1237			495	351
v/s Ratio Prot								c0.07			0.21	
v/s Ratio Perm					0.23			c0.27				0.08
v/c Ratio					0.59			0.72			0.70	0.29
Uniform Delay, d1					17.1			15.0			21.9	19.0
Progression Factor					0.85			1.03			1.17	2.11
Incremental Delay, d2					1.1			2.8			6.7	1.7
Delay (s)					15.7			18.2			32.4	41.7
Level of Service					B			B			C	D
Approach Delay (s)		0.0			15.7			18.2			35.7	
Approach LOS		A			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	817	0	0	0	0	0	823	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5636						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5636						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	888	0	0	0	0	0	895	364
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	960	0	0	0	0	0	895	337
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.17							c0.26
v/c Ratio					0.44						0.41	0.53
Uniform Delay, d1					15.7						11.8	12.8
Progression Factor					1.00						0.30	0.26
Incremental Delay, d2					0.6						0.5	2.6
Delay (s)					16.3						4.0	5.9
Level of Service					B						A	A
Approach Delay (s)		0.0			16.3			0.0			4.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	567	1539	0	0	0	0	0	2317	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	616	1673	0	0	0	0	0	2518	197	0	0	0
RTOR Reduction (vph)	16	16	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	428	1829	0	0	0	0	0	2518	182	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	35.6	35.6						43.8	43.8			
Effective Green, g (s)	35.6	35.6						43.8	43.8			
Actuated g/C Ratio	0.40	0.40						0.49	0.49			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	395	2093						1550	498			
v/s Ratio Prot								c0.79				
v/s Ratio Perm	c0.43	0.35							0.18			
v/c Ratio	1.08	0.87						1.62	0.37			
Uniform Delay, d1	27.2	25.1						23.1	14.4			
Progression Factor	1.00	1.00						1.45	1.54			
Incremental Delay, d2	69.3	5.4						281.3	0.2			
Delay (s)	96.5	30.6						314.8	22.5			
Level of Service	F	C						F	C			
Approach Delay (s)		43.3			0.0			293.6			0.0	
Approach LOS		D			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	179.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1718	214	0	0	0	0	0	0	208	733	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5671								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5671								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1867	233	0	0	0	0	0	0	226	797	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	2076	0	0	0	0	0	0	0	214	797	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2205								785	2845	
v/s Ratio Prot		c0.37									c0.14	
v/s Ratio Perm										0.13		
v/c Ratio		0.94								0.27	0.28	
Uniform Delay, d1		26.5								13.3	13.4	
Progression Factor		1.46								0.55	0.59	
Incremental Delay, d2		6.9								0.7	0.2	
Delay (s)		45.5								8.1	8.1	
Level of Service		D								A	A	
Approach Delay (s)		45.5			0.0			0.0			8.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1209	65	0	0	0	0	465	104	62	232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5495						2940			3090	
Flt Permitted		0.99						1.00			0.78	
Satd. Flow (perm)		5495						2940			2432	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1314	71	0	0	0	0	505	113	67	252	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	1569	0	0	0	0	0	609	0	0	319	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2669						1260			1042	
v/s Ratio Prot								c0.21				
v/s Ratio Perm		0.29									0.13	
v/c Ratio		0.59						0.48			0.31	
Uniform Delay, d1		13.0						14.4			13.2	
Progression Factor		1.00						1.00			1.48	
Incremental Delay, d2		1.0						1.3			0.7	
Delay (s)		13.9						15.7			20.2	
Level of Service		B						B			C	
Approach Delay (s)		13.9			0.0			15.7			20.2	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1489	266	0	0	0	0	0	0	202	1033	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1618	289	0	0	0	0	0	0	220	1123	0
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1618	273	0	0	0	0	0	0	198	1123	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.35									c0.25	
v/s Ratio Perm			0.21							0.13		
v/c Ratio		0.81	0.49							0.31	0.59	
Uniform Delay, d1		17.2	14.1							13.7	15.8	
Progression Factor		1.28	1.28							0.30	0.40	
Incremental Delay, d2		3.3	2.8							1.1	1.2	
Delay (s)		25.2	20.9							5.2	7.5	
Level of Service		C	C							A	A	
Approach Delay (s)		24.6			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1381	0	0	0	0	0	1319	101	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4471						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4471						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1501	0	0	0	0	0	1434	110	0	0	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1799	0	0	0	0	0	1434	95	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1603						2308	678			
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.40							0.07			
v/c Ratio		1.12						0.62	0.14			
Uniform Delay, d1		22.4						12.5	9.3			
Progression Factor		0.37						1.78	2.16			
Incremental Delay, d2		61.0						0.4	0.1			
Delay (s)		69.4						22.7	20.1			
Level of Service		E						C	C			
Approach Delay (s)		69.4			0.0			22.5			0.0	
Approach LOS		E			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1248	58	0	0	0	0	544	80	179	494	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4460						3053		1593	3185	
Flt Permitted		1.00						1.00		0.33	1.00	
Satd. Flow (perm)		4460						3053		546	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	1357	63	0	0	0	0	591	87	195	537	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1476	0	0	0	0	0	676	0	195	537	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1911						1482		265	1547	
v/s Ratio Prot								0.22			0.17	
v/s Ratio Perm		0.33								c0.36		
v/c Ratio		0.77						0.46		0.74	0.35	
Uniform Delay, d1		17.1						11.9		14.4	11.1	
Progression Factor		1.58						1.75		1.25	1.13	
Incremental Delay, d2		0.3						0.9		15.4	0.6	
Delay (s)		27.3						21.8		33.4	13.2	
Level of Service		C						C		C	B	
Approach Delay (s)		27.3			0.0			21.8			18.6	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	1400	74	0	0	0	0	765	103	0	343	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4425						3055			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4425						3055			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1522	80	0	0	0	0	832	112	0	373	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	72	1594	0	0	0	0	0	943	0	0	373	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1845						1331			730	
v/s Ratio Prot		c0.36						c0.31			0.22	
v/s Ratio Perm	0.06											
v/c Ratio	0.14	0.86						0.71			0.51	
Uniform Delay, d1	12.6	18.6						16.1			14.3	
Progression Factor	0.42	0.30						0.37			0.83	
Incremental Delay, d2	0.4	3.8						1.9			1.8	
Delay (s)	5.6	9.4						7.9			13.7	
Level of Service	A	A						A			B	
Approach Delay (s)		9.2			0.0			7.9			13.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	1076	82	0	0	0	0	870	103	124	766	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1558	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.23	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	377	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1170	89	0	0	0	0	946	112	135	833	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	129	1247	0	0	0	0	0	946	95	135	833	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	189	1597	
v/s Ratio Prot		c0.28						0.30			0.26	
v/s Ratio Perm	0.09								0.08	c0.36		
v/c Ratio	0.25	0.79						0.59	0.15	0.71	0.52	
Uniform Delay, d1	16.0	20.2						12.4	9.4	13.6	11.8	
Progression Factor	0.91	1.03						0.27	0.06	1.00	1.00	
Incremental Delay, d2	0.6	2.0						0.9	0.3	20.5	1.2	
Delay (s)	15.1	22.8						4.2	0.8	34.1	13.0	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		22.1			0.0			3.9			15.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1284	117	72	1131	199	259	1853	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1350	1575	4577	1177	1449	3185	1345			
Flt Permitted	0.23	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	381	4577	1350	488	4577	1177	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1396	127	78	1229	216	282	2014	207	0	0	0
RTOR Reduction (vph)	0	0	50	0	0	113	0	0	35	0	0	0
Lane Group Flow (vph)	273	1396	77	78	1229	103	282	2014	172	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	24.6	24.6	54.8	13.6	13.6	13.6	53.4	53.4	53.4			
Effective Green, g (s)	24.6	24.6	54.8	13.6	13.6	13.6	53.4	53.4	53.4			
Actuated g/C Ratio	0.27	0.27	0.61	0.15	0.15	0.15	0.59	0.59	0.59			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1251	822	73	691	177	859	1889	798			
v/s Ratio Prot	c0.11	0.31	0.03		c0.27		0.11	c0.63				
v/s Ratio Perm	0.27		0.03	0.16		0.09	0.08		0.13			
v/c Ratio	1.38	1.12	0.09	1.07	1.78	0.58	0.33	1.07	0.22			
Uniform Delay, d1	31.0	32.7	7.3	38.2	38.2	35.6	9.2	18.3	8.5			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.81	1.57	2.18			
Incremental Delay, d2	198.8	63.5	0.1	125.4	356.2	13.3	0.0	31.1	0.1			
Delay (s)	229.9	96.2	7.4	163.6	394.4	48.8	16.8	59.9	18.7			
Level of Service	F	F	A	F	F	D	B	E	B			
Approach Delay (s)		110.3			333.6			51.6			0.0	
Approach LOS		F			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	143.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	110.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1054	114	48	1092	0	0	0	0	89	539	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.13	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	224	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1146	124	52	1187	0	0	0	0	97	586	137
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	1146	53	52	1187	0	0	0	0	0	683	119
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	96	1365						2429	604
v/s Ratio Prot		0.36			c0.37							
v/s Ratio Perm			0.04	0.23							0.12	0.08
v/c Ratio		0.84	0.09	0.54	0.87						0.28	0.20
Uniform Delay, d1		17.9	11.9	14.9	18.2						13.2	12.7
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		6.3	0.3	20.2	7.8						0.3	0.7
Delay (s)		24.2	12.2	35.1	26.0						13.5	13.4
Level of Service		C	B	D	C						B	B
Approach Delay (s)		23.0			26.4			0.0			13.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1134	66	20	955	84	90	383	44	34	166	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3064			3024			2813	
Flt Permitted	0.15	1.00		0.10	1.00			0.81			0.85	
Satd. Flow (perm)	256	3129		171	3064			2473			2400	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1233	72	22	1038	91	98	416	48	37	180	109
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	14	0
Lane Group Flow (vph)	179	1301	0	22	1123	0	0	555	0	0	312	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	128	1570		85	1538			994			964	
v/s Ratio Prot		0.42			0.37							
v/s Ratio Perm	c0.70			0.13				c0.22			0.13	
v/c Ratio	1.40	0.83		0.26	0.73			0.56			0.32	
Uniform Delay, d1	24.9	21.2		14.3	19.6			23.1			20.6	
Progression Factor	1.00	1.00		0.53	0.49			1.00			1.00	
Incremental Delay, d2	219.6	5.2		6.1	2.6			2.3			0.9	
Delay (s)	244.5	26.4		13.7	12.1			25.3			21.4	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		52.7			12.1			25.3			21.4	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	848	110	65	846	0	0	0	0	226	804	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.16	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		265	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	922	120	71	920	0	0	0	0	246	874	179
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1032	0	71	920	0	0	0	0	246	874	140
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		119	1433					716	2059	641
v/s Ratio Prot		c0.33			0.29						c0.19	
v/s Ratio Perm				0.27						0.15		0.10
v/c Ratio		0.73		0.60	0.64					0.34	0.42	0.22
Uniform Delay, d1		22.6		20.7	21.3					17.9	18.7	16.8
Progression Factor		0.37		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.0		20.1	2.2					1.3	0.6	0.8
Delay (s)		10.2		40.8	23.5					19.2	19.3	17.6
Level of Service		B		D	C					B	B	B
Approach Delay (s)		10.2			24.7			0.0			19.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	1021	0	0	777	115	113	1509	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.20	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	339	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1110	0	0	845	125	123	1640	92	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	25	0	0	0
Lane Group Flow (vph)	177	1110	0	0	968	0	0	1763	67	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	155	1460			1432			1824	570			
v/s Ratio Prot		0.35			0.31							
v/s Ratio Perm	c0.52							0.39	0.05			
v/c Ratio	1.14	0.76			0.68			0.97	0.12			
Uniform Delay, d1	18.9	15.8			14.9			20.5	13.2			
Progression Factor	1.00	1.00			0.63			0.67	1.01			
Incremental Delay, d2	115.5	3.8			2.2			9.8	0.2			
Delay (s)	134.5	19.5			11.6			23.5	13.5			
Level of Service	F	B			B			C	B			
Approach Delay (s)		35.3			11.6			23.0			0.0	
Approach LOS		D			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	885	58	68	742	95	50	437	37	53	539	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.22	1.00		0.18	1.00		0.36	1.00		0.40	1.00	1.00
Satd. Flow (perm)	373	3156		299	3131		596	3148		669	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	962	63	74	807	103	54	475	40	58	586	97
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	55
Lane Group Flow (vph)	89	1018	0	74	896	0	54	506	0	58	586	42
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	178	1510		143	1498		255	1349		286	1365	610
v/s Ratio Prot		c0.32			0.29			0.16			c0.18	
v/s Ratio Perm	0.24			0.25			0.09			0.09		0.03
v/c Ratio	0.50	0.67		0.52	0.60		0.21	0.37		0.20	0.43	0.07
Uniform Delay, d1	12.5	14.1		12.6	13.3		12.6	13.6		12.5	14.0	11.8
Progression Factor	1.74	1.74		1.11	1.14		1.49	1.52		0.51	0.57	0.25
Incremental Delay, d2	6.7	1.7		10.1	1.4		1.9	0.8		1.5	1.0	0.2
Delay (s)	28.4	26.1		24.1	16.6		20.6	21.5		7.9	8.9	3.2
Level of Service	C	C		C	B		C	C		A	A	A
Approach Delay (s)		26.3			17.1			21.4			8.1	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	908	49	72	762	61	70	791	81	0	400	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1563	3138		1563	3127			3162	1330		1676	
Flt Permitted	0.22	1.00		0.16	1.00			0.83	1.00		1.00	
Satd. Flow (perm)	364	3138		265	3127			2622	1330		1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	987	53	78	828	66	76	860	88	0	435	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	18	0	0	0
Lane Group Flow (vph)	55	1034	0	78	885	0	0	936	70	0	435	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	156	1344		113	1340			1123	570		718	
v/s Ratio Prot		c0.33			0.28						0.26	
v/s Ratio Perm	0.15			0.29				c0.36	0.05			
v/c Ratio	0.35	0.77		0.69	0.66			0.83	0.12		0.61	
Uniform Delay, d1	13.5	17.1		16.2	15.9			17.8	12.1		15.4	
Progression Factor	1.53	1.54		1.41	1.48			0.46	0.48		1.56	
Incremental Delay, d2	4.9	3.4		27.6	2.4			5.8	0.3		3.1	
Delay (s)	25.4	29.7		50.4	26.0			14.0	6.2		27.2	
Level of Service	C	C		D	C			B	A		C	
Approach Delay (s)		29.4			28.0			13.3			27.2	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	738	85	29	465	47	73	869	90	103	637	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3136		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.32	1.00		0.15	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	1593	3136		534	3141		248	3185	1425	293	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	802	92	32	505	51	79	945	98	112	692	217
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	55	0	0	133
Lane Group Flow (vph)	141	882	0	32	545	0	79	945	43	112	692	84
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1464		180	1063		95	1228	549	113	646	549
v/s Ratio Prot	c0.09	c0.28			0.17			0.30			c0.41	
v/s Ratio Perm				0.06			0.32		0.03	0.38		0.06
v/c Ratio	1.13	0.60		0.18	0.51		0.83	0.77	0.08	0.99	1.07	0.15
Uniform Delay, d1	32.2	13.8		16.3	18.5		19.4	18.8	13.6	21.4	21.5	14.0
Progression Factor	0.54	1.05		1.00	1.00		0.64	0.64	0.61	1.36	1.36	4.32
Incremental Delay, d2	104.9	1.3		2.1	1.8		48.3	4.0	0.2	77.2	54.0	0.5
Delay (s)	122.2	15.7		18.4	20.3		60.8	15.9	8.6	106.2	83.1	61.1
Level of Service	F	B		B	C		E	B	A	F	F	E
Approach Delay (s)		30.2			20.2			18.5			81.0	
Approach LOS		C			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	27	27	58	95	38	42	2223	11	11	186	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	189	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	29	29	63	103	41	46	2416	12	12	202	23
RTOR Reduction (vph)	0	0	21	0	0	34	0	0	6	0	0	14
Lane Group Flow (vph)	35	29	8	63	103	7	46	2416	6	12	202	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	9.2	17.3	24.3	7.3	15.4	15.4	7.0	47.4	47.4	35.4	35.4	35.4
Effective Green, g (s)	9.2	17.3	24.3	7.3	15.4	15.4	7.0	47.4	47.4	35.4	35.4	35.4
Actuated g/C Ratio	0.10	0.19	0.27	0.08	0.17	0.17	0.08	0.53	0.53	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	322	384	129	544	243	123	1677	750	74	659	560
v/s Ratio Prot	0.01	c0.02	0.00	c0.04	c0.03		0.03	c0.76			0.12	
v/s Ratio Perm			0.00			0.00			0.00	0.06		0.01
v/c Ratio	0.11	0.09	0.02	0.49	0.19	0.03	0.37	1.44	0.01	0.16	0.31	0.02
Uniform Delay, d1	36.7	29.9	24.1	39.6	32.0	31.1	39.4	21.3	10.1	17.7	18.8	16.7
Progression Factor	1.00	1.00	1.00	1.32	1.18	1.00	1.00	1.00	1.00	1.19	1.20	1.00
Incremental Delay, d2	0.2	0.1	0.0	2.7	0.2	0.0	1.9	201.7	0.0	4.4	1.1	0.0
Delay (s)	36.8	30.0	24.1	54.9	37.8	31.1	41.3	223.0	10.1	25.5	23.7	16.7
Level of Service	D	C	C	D	D	C	D	F	B	C	C	B
Approach Delay (s)		30.7			41.7			218.6			23.1	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	185.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	11	56	275	0	0	0	0	0	506	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1662						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1662						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	12	61	299	0	0	0	0	0	550	103
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	62
Lane Group Flow (vph)	0	0	6	0	360	0	0	0	0	0	550	41
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		812						1835	571
v/s Ratio Prot											c0.12	
v/s Ratio Perm			0.00		0.22							0.03
v/c Ratio			0.01		0.44						0.30	0.07
Uniform Delay, d1			11.8		15.0						18.3	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		1.8						0.4	0.2
Delay (s)			11.8		16.8						18.8	16.9
Level of Service			B		B						B	B
Approach Delay (s)		11.8			16.8			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	264	116	22	249	0	0	179	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1662	1399		3172			3090	
Flt Permitted					0.99	1.00		0.92			1.00	
Satd. Flow (perm)					1662	1399		2946			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	58	287	126	24	271	0	0	195	41
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	0	0	15	0
Lane Group Flow (vph)	0	0	0	0	345	81	0	295	0	0	221	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					17.2	17.2		43.6			43.6	
Effective Green, g (s)					17.2	17.2		43.6			43.6	
Actuated g/C Ratio					0.25	0.25		0.62			0.62	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					408	343		1834			1924	
v/s Ratio Prot											0.07	
v/s Ratio Perm					0.21	0.06		c0.10				
v/c Ratio					0.85	0.24		0.16			0.11	
Uniform Delay, d1					25.1	21.1		5.5			5.4	
Progression Factor					1.05	1.07		1.00			1.00	
Incremental Delay, d2					18.8	1.6		0.2			0.1	
Delay (s)					45.1	24.2		5.7			5.5	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			39.5			5.7			5.5	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↑						↑↑↑	↱
Volume (vph)	0	0	0	92	224	0	0	0	0	0	828	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	100	243	0	0	0	0	0	900	70
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	100	243	0	0	0	0	0	900	35
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.14						c0.20	
v/s Ratio Perm				0.07								0.03
v/c Ratio				0.20	0.40						0.39	0.06
Uniform Delay, d1				15.4	16.8						10.6	8.8
Progression Factor				0.46	0.51						1.00	1.00
Incremental Delay, d2				0.7	1.7						0.5	0.2
Delay (s)				7.8	10.3						11.1	9.0
Level of Service				A	B						B	A
Approach Delay (s)		0.0			9.6			0.0			11.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	227	73	89	1644	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	247	79	97	1787	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	247	63	0	1870	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.15							
v/s Ratio Perm						0.04		0.41				
v/c Ratio					0.39	0.12		0.83				
Uniform Delay, d1					16.1	14.3		15.3				
Progression Factor					1.66	1.90		1.00				
Incremental Delay, d2					1.7	0.4		3.8				
Delay (s)					28.5	27.7		19.2				
Level of Service					C	C		B				
Approach Delay (s)		0.0			28.3			19.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	29	212	42	31	466	0	0	707	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1653	1374	1547	3185			3185	1263
Flt Permitted					0.99	1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)					1653	1374	521	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	32	230	46	34	507	0	0	768	50
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	262	15	34	507	0	0	768	31
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					495	412	320	1956			1956	775
v/s Ratio Prot								0.16			c0.24	
v/s Ratio Perm					0.16	0.01	0.07					0.02
v/c Ratio					0.53	0.04	0.11	0.26			0.39	0.04
Uniform Delay, d1					20.4	17.3	5.6	6.2			6.9	5.3
Progression Factor					0.81	0.98	1.00	1.00			0.73	0.21
Incremental Delay, d2					3.1	0.1	0.7	0.3			0.6	0.1
Delay (s)					19.6	17.1	6.2	6.5			5.6	1.2
Level of Service					B	B	A	A			A	A
Approach Delay (s)		0.0			19.2			6.5			5.3	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	51	237	38	80	932	0	0	449	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.69	1.00	1.00			0.92	
Flpb, ped/bikes					0.93	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.97	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1549	984	1593	3185			1493	
Flt Permitted					0.99	1.00	0.23	1.00			1.00	
Satd. Flow (perm)					1549	984	378	3185			1493	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	55	258	41	87	1013	0	0	488	167
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	0	313	15	87	1013	0	0	637	0
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					575	365	186	1569			735	
v/s Ratio Prot								0.32			c0.43	
v/s Ratio Perm					0.20	0.02	0.23					
v/c Ratio					0.54	0.04	0.47	0.65			0.87	
Uniform Delay, d1					17.3	14.0	11.7	13.2			15.7	
Progression Factor					1.43	1.96	1.00	1.00			1.45	
Incremental Delay, d2					3.5	0.2	8.2	2.1			11.4	
Delay (s)					28.3	27.7	19.9	15.3			34.2	
Level of Service					C	C	B	B			C	
Approach Delay (s)		0.0			28.2			15.6			34.2	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	198	53	68	1002	0	0	644	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3155	1425	1593	3185			3108	
Flt Permitted					0.99	1.00	0.29	1.00			1.00	
Satd. Flow (perm)					3155	1425	484	3185			3108	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	215	58	74	1089	0	0	700	136
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	267	18	74	1089	0	0	813	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	290	1911			1864	
v/s Ratio Prot								c0.34			0.26	
v/s Ratio Perm					0.08	0.01	0.15					
v/c Ratio					0.27	0.04	0.26	0.57			0.44	
Uniform Delay, d1					18.0	16.7	6.6	8.5			7.6	
Progression Factor					1.00	1.00	1.00	1.00			1.75	
Incremental Delay, d2					0.7	0.2	2.1	1.2			0.2	
Delay (s)					18.6	16.8	8.7	9.7			13.5	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.3			9.7			13.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	847	225	218	800	126	236	622	244	143	357	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.94	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1522	3185	1097	1593	4369		1552	3185	1229	1497	3045	
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.40	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	436	3185	1097	218	4369		648	3185	1229	622	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	921	245	237	870	137	257	676	265	155	388	62
RTOR Reduction (vph)	0	0	151	0	24	0	0	0	15	0	14	0
Lane Group Flow (vph)	239	921	94	237	983	0	257	676	250	155	436	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	1079	371	205	1966		327	1362	621	210	1031	
v/s Ratio Prot		0.29		c0.09	0.23		c0.04	0.21	0.03		0.14	
v/s Ratio Perm	c0.55		0.09	0.43			c0.29		0.17	0.25		
v/c Ratio	1.63	0.85	0.25	1.16	0.50		0.79	0.50	0.40	0.74	0.42	
Uniform Delay, d1	29.8	27.7	21.5	19.9	17.6		21.8	18.7	13.8	26.2	23.0	
Progression Factor	1.00	1.00	1.00	2.38	0.77		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	310.5	8.6	1.6	99.2	0.6		11.7	1.3	0.4	20.6	1.3	
Delay (s)	340.2	36.3	23.1	146.5	14.1		33.6	20.0	14.2	46.8	24.2	
Level of Service	F	D	C	F	B		C	C	B	D	C	
Approach Delay (s)		85.7			39.4			21.6			30.0	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	791	152	221	967	537	36	638	137	65	918	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1590	3185	1190	3090	3185	1248	1528	3185	1316	1549	3185	1121
Flt Permitted	0.13	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	216	3185	1190	3090	3185	1248	211	3185	1316	433	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	860	165	240	1051	584	39	693	149	71	998	162
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	295	860	117	240	1051	536	39	693	132	71	998	145
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Effective Green, g (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Actuated g/C Ratio	0.49	0.39	0.39	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	1256	469	309	1256	492	71	1079	577	146	1079	491
v/s Ratio Prot	c0.12	0.27		0.08	0.33			0.22	0.02		c0.31	0.03
v/s Ratio Perm	c0.48		0.10			0.43	0.18		0.08	0.16		0.10
v/c Ratio	1.21	0.68	0.25	0.78	0.84	1.09	0.55	0.64	0.23	0.49	0.92	0.30
Uniform Delay, d1	20.1	22.6	18.3	39.5	24.6	27.2	24.2	25.1	15.8	23.5	28.6	16.3
Progression Factor	1.75	0.87	1.06	0.81	1.09	1.08	1.09	1.10	1.02	1.00	1.00	1.00
Incremental Delay, d2	116.2	2.0	0.8	9.1	5.3	62.4	25.0	2.7	0.2	11.1	14.4	0.3
Delay (s)	151.3	21.7	20.3	40.9	32.0	91.9	51.4	30.2	16.3	34.7	43.1	16.6
Level of Service	F	C	C	D	C	F	D	C	B	C	D	B
Approach Delay (s)		50.5			51.8			28.8			39.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	874	79	88	987	717	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2378
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2378
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	950	86	96	1073	779	1110
RTOR Reduction (vph)	0	54	0	0	0	10
Lane Group Flow (vph)	950	32	96	1073	779	1100
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	33.6	33.6	16.0	53.1	27.1	43.1
Effective Green, g (s)	33.6	33.6	16.0	53.1	27.1	43.1
Actuated g/C Ratio	0.37	0.37	0.18	0.59	0.30	0.48
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1189	391	283	1879	930	1138
v/s Ratio Prot	c0.30		0.06	0.34	0.25	c0.17
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.80	0.08	0.34	0.57	0.84	0.97
Uniform Delay, d1	25.2	18.2	32.4	11.4	29.4	22.7
Progression Factor	1.53	3.59	0.78	1.86	1.00	1.00
Incremental Delay, d2	4.5	0.3	0.5	0.9	6.7	18.9
Delay (s)	43.1	65.8	25.9	22.1	36.1	41.6
Level of Service	D	E	C	C	D	D
Approach Delay (s)	45.0			22.4	39.3	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1121	42	57	709	70	92	762	49	97	962	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.94	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	3185	1143	1550	3185	1196	1494	3140		1590	3185	976
Flt Permitted	0.15	1.00	1.00	0.17	1.00	1.00	0.22	1.00		0.16	1.00	1.00
Satd. Flow (perm)	255	3185	1143	281	3185	1196	346	3140		273	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1218	46	62	771	76	100	828	53	105	1046	179
RTOR Reduction (vph)	0	0	27	0	0	56	0	5	0	0	0	96
Lane Group Flow (vph)	299	1218	19	62	771	20	100	876	0	105	1046	83
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	37.5	37.5	37.5	23.2	23.2	23.2	32.5	32.5		41.9	41.9	41.9
Effective Green, g (s)	37.5	37.5	37.5	23.2	23.2	23.2	32.5	32.5		41.9	41.9	41.9
Actuated g/C Ratio	0.42	0.42	0.42	0.26	0.26	0.26	0.36	0.36		0.47	0.47	0.47
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	273	1327	476	72	821	308	124	1133		220	1482	454
v/s Ratio Prot	c0.14	0.38			0.24			0.28		0.03	c0.33	
v/s Ratio Perm	c0.32		0.02	0.22		0.02	c0.29			0.19		0.09
v/c Ratio	1.10	0.92	0.04	0.86	0.94	0.06	0.81	0.77		0.48	0.71	0.18
Uniform Delay, d1	22.3	24.8	15.6	31.9	32.7	25.2	25.9	25.5		15.9	19.1	14.1
Progression Factor	1.05	1.05	0.86	0.88	0.92	2.96	1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	65.5	6.0	0.1	58.4	15.7	0.3	22.2	2.3		1.6	1.6	0.2
Delay (s)	89.0	32.1	13.5	86.6	45.7	74.8	61.6	40.5		17.5	20.7	14.3
Level of Service	F	C	B	F	D	E	E	D		B	C	B
Approach Delay (s)		42.5			50.9			42.7			19.6	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	37.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	1204	46	49	791	87	66	621	138	89	470	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00	1.00	0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3185	834	1496	3185	1050	1544	4287		1512	2927	
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.21	1.00		0.23	1.00	
Satd. Flow (perm)	311	3185	834	309	3185	1050	347	4287		374	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1309	50	53	860	95	72	675	150	97	511	217
RTOR Reduction (vph)	0	0	20	0	0	56	0	18	0	0	52	0
Lane Group Flow (vph)	292	1309	30	53	860	39	72	807	0	97	676	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	376	1886	493	126	1298	428	111	1381		120	943	
v/s Ratio Prot	c0.12	0.41			0.27			0.19			0.23	
v/s Ratio Perm	c0.34		0.04	0.17		0.04	0.21			c0.26		
v/c Ratio	0.78	0.69	0.06	0.42	0.66	0.09	0.65	0.58		0.81	0.72	
Uniform Delay, d1	12.7	12.7	7.8	19.1	21.6	16.4	26.1	25.5		28.0	26.9	
Progression Factor	1.15	1.69	1.90	0.63	0.64	0.67	1.06	1.12		1.00	1.00	
Incremental Delay, d2	6.8	1.5	0.2	8.3	2.2	0.3	24.8	1.7		42.4	4.7	
Delay (s)	21.3	22.9	14.9	20.4	16.0	11.3	52.4	30.3		70.4	31.5	
Level of Service	C	C	B	C	B	B	D	C		E	C	
Approach Delay (s)		22.4			15.8			32.1			36.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1219	57	40	736	6	0	0	0	96	627	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.97	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1580	3185	1027	1542	3175						4468	1266
Flt Permitted	0.22	1.00	1.00	0.15	1.00						0.99	1.00
Satd. Flow (perm)	366	3185	1027	243	3175						4468	1266
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1325	62	43	800	7	0	0	0	104	682	213
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	122	1325	47	43	806	0	0	0	0	0	786	195
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Effective Green, g (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Actuated g/C Ratio	0.53	0.53	0.53	0.40	0.40						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	309	1691	545	98	1280						1563	562
v/s Ratio Prot	0.04	c0.42			0.25							0.03
v/s Ratio Perm	0.17		0.05	0.18							0.18	0.12
v/c Ratio	0.39	0.78	0.09	0.44	0.63						0.50	0.35
Uniform Delay, d1	12.2	16.9	10.4	19.5	21.5						23.1	16.4
Progression Factor	1.34	1.11	1.73	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	2.7	0.2	13.6	2.4						1.2	0.4
Delay (s)	16.9	21.5	18.2	33.1	23.8						24.2	16.8
Level of Service	B	C	B	C	C						C	B
Approach Delay (s)		21.0			24.3			0.0			22.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	16	36	40	72	160	22	457	19	15	1157	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.93	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2632		1593	2505		1584	3146		1482	3185	1333
Flt Permitted	0.95	1.00		0.95	1.00		0.15	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1593	2632		1593	2505		247	3146		695	3185	1333
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	17	39	43	78	174	24	497	21	16	1258	127
RTOR Reduction (vph)	0	30	0	0	68	0	0	2	0	0	0	26
Lane Group Flow (vph)	138	26	0	43	184	0	24	516	0	16	1258	101
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Effective Green, g (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Actuated g/C Ratio	0.06	0.23		0.03	0.21		0.57	0.57		0.57	0.57	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	88	605		53	520		141	1803		398	1826	838
v/s Ratio Prot	c0.09	0.01		0.03	c0.07			0.16			c0.39	0.01
v/s Ratio Perm							0.10			0.02		0.07
v/c Ratio	1.57	0.04		0.81	0.35		0.17	0.29		0.04	0.69	0.12
Uniform Delay, d1	42.5	26.9		43.2	30.5		9.1	9.8		8.4	13.5	6.7
Progression Factor	1.00	1.00		1.00	1.00		1.18	1.13		2.11	2.28	2.94
Incremental Delay, d2	303.3	0.0		59.7	0.4		2.6	0.4		0.1	1.2	0.0
Delay (s)	345.8	27.0		102.9	30.9		13.3	11.5		17.8	32.1	19.8
Level of Service	F	C		F	C		B	B		B	C	B
Approach Delay (s)		253.8			41.4			11.5			30.8	
Approach LOS		F			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	190	0	372	17	100	834	49	36	1116	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.97	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3154		1581	3123		1537	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.17	1.00	1.00
Satd. Flow (perm)		1676	1277		3154		187	3123		268	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	207	0	404	18	109	907	53	39	1213	43
RTOR Reduction (vph)	0	0	15	0	4	0	0	5	0	0	0	26
Lane Group Flow (vph)	0	489	192	0	418	0	109	955	0	39	1213	17
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1235		106	1259	514
v/s Ratio Prot		c0.29			0.13			0.31			0.38	
v/s Ratio Perm			0.15				c0.58			0.15		0.01
v/c Ratio		0.60	0.31		0.27		1.49	0.77		0.37	0.96	0.03
Uniform Delay, d1		16.6	13.8		13.6		27.2	23.7		19.2	26.6	16.7
Progression Factor		1.00	1.00		0.94		0.93	0.90		1.01	1.09	1.30
Incremental Delay, d2		3.2	1.3		0.3		277.3	4.4		7.9	15.8	0.1
Delay (s)		19.8	15.1		13.1		302.5	25.7		27.4	44.8	21.8
Level of Service		B	B		B		F	C		C	D	C
Approach Delay (s)		18.4			13.1			53.9			43.6	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	642	88	0	547	46	122	528	91	0	501	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1676	
Flt Permitted		1.00	1.00		1.00	1.00	0.14	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	231	3025			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	698	96	0	595	50	133	574	99	0	545	0
RTOR Reduction (vph)	0	0	49	0	0	26	0	16	0	0	0	0
Lane Group Flow (vph)	0	698	47	0	595	24	133	657	0	0	545	0
Confl. Peds. (#/hr)			122			33			112	112		64
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		43.3	43.3		43.3	43.3	36.3	36.3			23.6	
Effective Green, g (s)		43.3	43.3		43.3	43.3	36.3	36.3			23.6	
Actuated g/C Ratio		0.48	0.48		0.48	0.48	0.40	0.40			0.26	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		806	487		806	647	203	1220			439	
v/s Ratio Prot		c0.42			0.35		0.05	c0.22			c0.33	
v/s Ratio Perm			0.05			0.02	0.21					
v/c Ratio		0.87	0.10		0.74	0.04	0.66	0.54			1.24	
Uniform Delay, d1		20.8	12.7		18.8	12.3	36.0	20.5			33.2	
Progression Factor		0.64	0.04		0.39	0.52	0.81	0.81			0.86	
Incremental Delay, d2		11.1	0.4		3.3	0.1	6.7	0.4			122.7	
Delay (s)		24.4	0.9		10.7	6.5	35.7	17.0			151.4	
Level of Service		C	A		B	A	D	B			F	
Approach Delay (s)		21.6			10.4			20.1			151.4	
Approach LOS		C			B			C			F	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	525	192	62	597	0	0	0	0	19	658	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1593	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.24	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	410	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	571	209	67	649	0	0	0	0	21	715	43
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	571	198	67	649	0	0	0	0	21	715	19
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	183	748					614	1433	275
v/s Ratio Prot		0.34			c0.39						c0.22	
v/s Ratio Perm			0.18	0.16						0.02		0.03
v/c Ratio		0.76	0.40	0.37	0.87					0.03	0.50	0.07
Uniform Delay, d1		20.9	16.7	16.5	22.5					13.8	17.6	14.1
Progression Factor		1.39	1.61	1.00	1.00					0.21	0.19	0.00
Incremental Delay, d2		4.0	1.3	5.6	13.0					0.1	1.1	0.4
Delay (s)		33.1	28.2	22.0	35.5					2.9	4.5	0.5
Level of Service		C	C	C	D					A	A	A
Approach Delay (s)		31.8			34.2			0.0			4.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	130	27	315	1118	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.94	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1497	3185	3185	748
Flt Permitted	0.95	1.00	0.19	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	296	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	141	29	342	1215	92
RTOR Reduction (vph)	0	20	0	0	0	19
Lane Group Flow (vph)	190	121	29	342	1215	73
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	20.0	20.0	60.3	60.3	60.3	60.3
Effective Green, g (s)	20.0	20.0	60.3	60.3	60.3	60.3
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	419	198	2133	2133	501
v/s Ratio Prot				0.11	c0.38	
v/s Ratio Perm	c0.13	0.06	0.10			0.10
v/c Ratio	0.60	0.29	0.15	0.16	0.57	0.14
Uniform Delay, d1	31.4	29.1	5.4	5.5	7.9	5.4
Progression Factor	1.00	1.00	1.00	1.00	2.45	3.24
Incremental Delay, d2	3.2	0.4	1.6	0.2	0.8	0.5
Delay (s)	34.7	29.5	7.0	5.7	20.3	18.0
Level of Service	C	C	A	A	C	B
Approach Delay (s)	32.5			5.8	20.1	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1553	193	64	464	0	0	1323	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1688	210	70	504	0	0	1438	254
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	117	1887	0	70	504	0	0	1438	246
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.61			0.16			c0.45	
v/s Ratio Perm				0.08			0.34					0.21
v/c Ratio				0.15	1.08		0.95	0.43			1.23	0.58
Uniform Delay, d1				9.2	19.5		27.6	21.4			28.5	22.9
Progression Factor				1.34	0.98		1.46	1.55			1.36	1.49
Incremental Delay, d2				0.2	42.1		78.1	0.9			109.7	3.8
Delay (s)				12.6	61.3		118.4	34.1			148.5	38.0
Level of Service				B	E		F	C			F	D
Approach Delay (s)		0.0			58.5			44.4			131.9	
Approach LOS		A			E			D			F	

Intersection Summary				
HCM 2000 Control Delay	85.6	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.14			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0	
Intersection Capacity Utilization	114.1%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	1358	89	151	474	0	0	219	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.95			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		2998			1676	976
Flt Permitted				0.95	1.00	1.00		0.76			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2310			1676	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	1476	97	164	515	0	0	238	171
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	59
Lane Group Flow (vph)	0	0	0	48	1476	59	0	679	0	0	238	112
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		962			698	406
v/s Ratio Prot					c0.46						0.14	
v/s Ratio Perm				0.05		0.05		c0.29				0.11
v/c Ratio				0.11	0.97	0.11		0.71			0.34	0.28
Uniform Delay, d1				12.8	22.7	12.8		21.7			17.8	17.3
Progression Factor				0.90	1.13	1.36		0.29			1.16	1.38
Incremental Delay, d2				0.3	12.3	0.3		1.8			0.1	0.2
Delay (s)				11.9	38.0	17.7		8.0			20.8	24.0
Level of Service				B	D	B		A			C	C
Approach Delay (s)		0.0			36.0			8.0			22.1	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	303	982	0	0	0	0	0	966	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	329	1067	0	0	0	0	0	1050	341
RTOR Reduction (vph)	0	0	0	52	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	277	1067	0	0	0	0	0	1050	331
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.33						0.23	
v/s Ratio Perm				0.21								c0.29
v/c Ratio				0.58	0.94						0.43	0.54
Uniform Delay, d1				23.5	27.9						12.5	13.6
Progression Factor				1.00	1.00						1.47	1.52
Incremental Delay, d2				5.2	15.2						0.5	3.2
Delay (s)				28.7	43.2						19.0	23.9
Level of Service				C	D						B	C
Approach Delay (s)		0.0			39.7			0.0			20.2	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	88	1295	0	0	129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1408	0	0	140	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	96	1408	0	0	140	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	53.3	74.1			9.4	
Effective Green, g (s)	53.3	74.1			9.4	
Actuated g/C Ratio	0.59	0.82			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1829	5590			322	
v/s Ratio Prot	0.03	c0.21				
v/s Ratio Perm					c0.05	
v/c Ratio	0.05	0.25			0.43	
Uniform Delay, d1	7.7	1.8			37.8	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1			0.9	
Delay (s)	7.8	1.9			38.8	
Level of Service	A	A			D	
Approach Delay (s)		2.3	0.0		38.8	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	1104	152	0	0	0	0	1526	344	118	233	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4386		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4386		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1200	165	0	0	0	0	1659	374	128	253	0
RTOR Reduction (vph)	0	0	108	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	132	1200	57	0	0	0	0	2017	0	128	253	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1856		236	912	
v/s Ratio Prot		c0.21						c0.46		c0.04	0.15	
v/s Ratio Perm	0.12		0.04									
v/c Ratio	0.34	0.60	0.13					1.09		0.54	0.28	
Uniform Delay, d1	21.8	24.3	20.2					25.9		40.0	11.0	
Progression Factor	1.00	1.01	1.31					0.48		1.00	1.00	
Incremental Delay, d2	2.3	1.3	0.6					46.7		2.5	0.8	
Delay (s)	24.2	26.0	27.0					59.1		42.6	11.8	
Level of Service	C	C	C					E		D	B	
Approach Delay (s)		25.9			0.0			59.1			22.1	
Approach LOS		C			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1491	128	0	0	0	0	753	101	118	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.95	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3021		1511	3185	
Flt Permitted		1.00						1.00		0.22	1.00	
Satd. Flow (perm)		5642						3021		344	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1621	139	0	0	0	0	818	110	128	1190	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1779	0	0	0	0	0	926	0	128	1190	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1476		168	1557	
v/s Ratio Prot								0.31			c0.37	
v/s Ratio Perm		0.32								0.37		
v/c Ratio		0.75						0.63		0.76	0.76	
Uniform Delay, d1		21.9						17.0		18.7	18.8	
Progression Factor		0.75						0.45		0.43	0.24	
Incremental Delay, d2		1.6						1.8		3.0	0.3	
Delay (s)		18.0						9.4		11.1	4.9	
Level of Service		B						A		B	A	
Approach Delay (s)		18.0			0.0			9.4			5.5	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	1453	81	0	0	0	0	471	178	0	322	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5385						2738			1676	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5385						2738			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1579	88	0	0	0	0	512	193	0	350	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1827	0	0	0	0	0	704	0	0	350	0
Confl. Peds. (#/hr)	288		266						373	373		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2572						1116			683	
v/s Ratio Prot								c0.26			0.21	
v/s Ratio Perm		0.34										
v/c Ratio		0.71						0.63			0.51	
Uniform Delay, d1		18.6						21.2			20.0	
Progression Factor		0.55						0.91			1.00	
Incremental Delay, d2		1.1						2.5			2.7	
Delay (s)		11.4						21.8			22.6	
Level of Service		B						C			C	
Approach Delay (s)		11.4			0.0			21.8			22.6	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1494	215	0	0	0	0	0	0	324	1144	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5450									4329	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5450									4329	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1624	234	0	0	0	0	0	0	352	1243	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1846	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1899	
v/s Ratio Prot		c0.34										
v/s Ratio Perm											0.37	
v/c Ratio		0.74									0.83	
Uniform Delay, d1		20.0									22.3	
Progression Factor		1.42									0.48	
Incremental Delay, d2		1.5									4.2	
Delay (s)		29.9									14.9	
Level of Service		C									B	
Approach Delay (s)		29.9			0.0			0.0			14.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	1466	280	0	0	0	0	967	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	468	1593	304	0	0	0	0	1051	282
RTOR Reduction (vph)	0	0	0	25	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	363	1933	0	0	0	0	0	1051	269
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.23	
v/s Ratio Perm				c0.48	0.35							c0.29
v/c Ratio				1.09	0.79						0.52	0.65
Uniform Delay, d1				25.0	21.4						18.0	19.5
Progression Factor				1.26	1.25						1.00	1.00
Incremental Delay, d2				72.2	2.3						0.9	7.6
Delay (s)				103.8	29.0						19.0	27.1
Level of Service				F	C						B	C
Approach Delay (s)		0.0			41.3			0.0			20.7	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1077	91	631	1454	0	0	0	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5517		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5517		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1171	99	686	1580	0	0	0	443
RTOR Reduction (vph)	0	0	0	0	12	0	459	0	0	0	0	416
Lane Group Flow (vph)	0	0	0	0	1258	0	227	1580	0	0	0	27
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2016		851	2013				153
v/s Ratio Prot					c0.23		0.07	c0.35				
v/s Ratio Perm												c0.01
v/c Ratio					0.62		0.27	0.78				0.18
Uniform Delay, d1					23.5		25.5	21.6				40.1
Progression Factor					1.06		3.21	1.54				1.00
Incremental Delay, d2					1.3		0.5	2.0				0.5
Delay (s)					26.3		82.2	35.3				40.6
Level of Service					C		F	D				D
Approach Delay (s)		0.0			26.3			49.5			40.6	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	883	155	81	711	0	0	969	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1593	3185			3185	936
Flt Permitted				0.95	1.00		0.16	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		269	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	960	168	88	773	0	0	1053	185
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	103	1093	0	88	773	0	0	1053	172
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				39.0	39.0		41.2	41.2			41.2	41.2
Effective Green, g (s)				39.0	39.0		41.2	41.2			41.2	41.2
Actuated g/C Ratio				0.43	0.43		0.46	0.46			0.46	0.46
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				373	2318		123	1458			1458	428
v/s Ratio Prot					c0.20			0.24			c0.33	
v/s Ratio Perm				0.12			0.33					0.18
v/c Ratio				0.28	0.47		0.72	0.53			0.72	0.40
Uniform Delay, d1				16.4	18.2		19.7	17.5			19.8	16.2
Progression Factor				0.29	0.26		1.43	1.58			1.69	1.84
Incremental Delay, d2				1.6	0.6		23.4	1.0			2.0	1.8
Delay (s)				6.3	5.4		51.5	28.6			35.3	31.6
Level of Service				A	A		D	C			D	C
Approach Delay (s)		0.0			5.5			30.9			34.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	45	977	70	49	550	0	0	336	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.98			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5396			3121			1676	831
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5396			2797			1676	831
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	49	1062	76	53	598	0	0	365	73
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1176	0	0	651	0	0	365	61
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2098			1414			847	420
v/s Ratio Prot											0.22	
v/s Ratio Perm					0.22			c0.23				0.07
v/c Ratio					0.56			0.46			0.43	0.15
Uniform Delay, d1					21.5			14.3			14.1	11.9
Progression Factor					0.50			1.49			1.78	2.02
Incremental Delay, d2					1.0			0.9			1.3	0.6
Delay (s)					11.7			22.3			26.4	24.7
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.7			22.3			26.1	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	733	0	0	0	0	0	1068	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	797	0	0	0	0	0	1161	229
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	0	0	0	935	0	0	0	0	0	1161	193
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.25	
v/s Ratio Perm					0.16							0.14
v/c Ratio					0.42						0.50	0.27
Uniform Delay, d1					19.9						14.7	12.7
Progression Factor					1.00						0.57	0.56
Incremental Delay, d2					0.6						0.4	0.5
Delay (s)					20.4						8.9	7.6
Level of Service					C						A	A
Approach Delay (s)		0.0			20.4			0.0			8.7	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1686	188	0	0	0	0	0	0	208	1368	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5496	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1833	204	0	0	0	0	0	0	226	1487	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1833	194	0	0	0	0	0	0	0	1701	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2467	
v/s Ratio Prot		c0.32										
v/s Ratio Perm			0.21								0.31	
v/c Ratio		0.71	0.47								0.69	
Uniform Delay, d1		20.1	17.4								19.8	
Progression Factor		1.00	1.00								1.16	
Incremental Delay, d2		1.7	3.8								1.3	
Delay (s)		21.8	21.2								24.2	
Level of Service		C	C								C	
Approach Delay (s)		21.7			0.0			0.0			24.2	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	639	1233	0	0	0	0	0	1640	217	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5043						6417				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5043						6417				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	695	1340	0	0	0	0	0	1783	236	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	384	1627	0	0	0	0	0	2009	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2873				
v/s Ratio Prot								c0.31				
v/s Ratio Perm	c0.46	0.32										
v/c Ratio	1.02	0.72						0.70				
Uniform Delay, d1	24.9	20.3						20.0				
Progression Factor	0.45	0.38						0.81				
Incremental Delay, d2	44.4	1.4						0.9				
Delay (s)	55.5	9.1						17.1				
Level of Service	E	A						B				
Approach Delay (s)		18.2			0.0			17.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1145	155	0	0	0	0	781	115	102	934	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.86						0.95		1.00	0.91	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5664						3124		1593	4577	
Flt Permitted		1.00						1.00		0.18	1.00	
Satd. Flow (perm)		5664						3124		304	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1245	168	0	0	0	0	849	125	111	1015	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	0	1386	0	0	0	0	0	961	0	111	1015	0
Turn Type		NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						42.0		42.0	42.0	
Effective Green, g (s)		42.0						42.0		42.0	42.0	
Actuated g/C Ratio		0.47						0.47		0.47	0.47	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2643						1457		141	2135	
v/s Ratio Prot		c0.24						0.31			0.22	
v/s Ratio Perm										c0.37		
v/c Ratio		0.52						0.66		0.79	0.48	
Uniform Delay, d1		16.9						18.5		20.2	16.4	
Progression Factor		0.31						0.56		0.36	0.36	
Incremental Delay, d2		0.5						1.9		26.6	0.5	
Delay (s)		5.7						12.3		33.9	6.5	
Level of Service		A						B		C	A	
Approach Delay (s)		5.7			0.0			12.3			9.2	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	1066	132	0	0	0	0	611	108	0	380	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5149						2937			1676	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5149						2937			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	1159	143	0	0	0	0	664	117	0	413	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1454	0	0	0	0	0	778	0	0	413	0
Confl. Peds. (#/hr)	288		266						373			
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1295			739	
v/s Ratio Prot								c0.26			0.25	
v/s Ratio Perm		0.28										
v/c Ratio		0.64						0.60			0.56	
Uniform Delay, d1		19.4						19.1			18.7	
Progression Factor		0.23						1.52			1.07	
Incremental Delay, d2		1.1						1.5			2.8	
Delay (s)		5.7						30.5			22.8	
Level of Service		A						C			C	
Approach Delay (s)		5.7			0.0			30.5			22.8	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1106	138	0	0	0	0	0	0	234	1071	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1202	150	0	0	0	0	0	0	254	1164	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1334	0	0	0	0	0	0	0	0	1402	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.31	
v/c Ratio		0.53									0.69	
Uniform Delay, d1		17.9									19.7	
Progression Factor		0.20									0.96	
Incremental Delay, d2		0.6									1.7	
Delay (s)		4.2									20.6	
Level of Service		A									C	
Approach Delay (s)		4.2			0.0			0.0			20.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	279	0	0	476	151	294	1500	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1676			3185	1425	1593	4577	1425			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1676			3185	1425	1593	4577	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	303	0	0	517	164	320	1630	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	61	0	0	0
Lane Group Flow (vph)	116	303	0	0	517	28	320	1630	22	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Effective Green, g (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	252	1067			1661	99	431	1239	385			
v/s Ratio Prot	c0.04	0.02			c0.02	0.02		c0.36				
v/s Ratio Perm		0.16			0.14		0.20		0.02			
v/c Ratio	0.46	0.28			0.31	0.29	0.74	1.32	0.06			
Uniform Delay, d1	52.6	12.1			19.4	53.0	39.9	43.8	32.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.1			0.1	1.6	11.0	147.8	0.3			
Delay (s)	53.9	12.3			19.5	54.5	50.9	191.6	32.7			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.8			27.9			163.0			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	115.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	277	201	81	449	0	0	0	0	47	1441	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3066						5514	
Flt Permitted		1.00	1.00		0.83						1.00	
Satd. Flow (perm)		1676	932		2578						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	301	218	88	488	0	0	0	0	51	1566	87
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	301	206	0	576	0	0	0	0	0	1695	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1205						2340	
v/s Ratio Prot		0.18										
v/s Ratio Perm			0.22		c0.22						0.31	
v/c Ratio		0.38	0.47		0.48						0.72	
Uniform Delay, d1		15.5	16.4		16.4						21.5	
Progression Factor		1.00	1.00		0.26						1.00	
Incremental Delay, d2		1.4	3.7		1.3						2.0	
Delay (s)		17.0	20.1		5.6						23.5	
Level of Service		B	C		A						C	
Approach Delay (s)		18.3			5.6			0.0			23.5	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	314	65	0	481	85	75	390	73	42	356	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1676	762		3185	650		2765			3039	
Flt Permitted		1.00	1.00		1.00	1.00		0.82			0.86	
Satd. Flow (perm)		1676	762		3185	650		2295			2612	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	341	71	0	523	92	82	424	79	46	387	16
RTOR Reduction (vph)	0	0	7	0	0	8	0	5	0	0	1	0
Lane Group Flow (vph)	0	341	64	0	523	84	0	580	0	0	448	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		838	381		1592	325		994			1131	
v/s Ratio Prot		c0.20			0.16							
v/s Ratio Perm			0.08			0.13		c0.25			0.17	
v/c Ratio		0.41	0.17		0.33	0.26		0.58			0.40	
Uniform Delay, d1		14.1	12.3		13.5	12.9		19.3			17.4	
Progression Factor		0.49	0.45		1.13	1.17		1.08			1.00	
Incremental Delay, d2		1.4	0.9		0.4	1.5		2.1			1.0	
Delay (s)		8.4	6.5		15.7	16.6		23.0			18.5	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		8.0			15.8			23.0			18.5	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	341	78	44	490	0	0	0	0	217	1491	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.81	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1297	1676					933	3185	959
Flt Permitted		1.00	1.00	0.43	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	591	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	371	85	48	533	0	0	0	0	236	1621	55
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	371	72	48	533	0	0	0	0	236	1621	42
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	262	744					415	1419	427
v/s Ratio Prot		0.22			c0.32						c0.51	
v/s Ratio Perm			0.09	0.08						0.25		0.04
v/c Ratio		0.50	0.20	0.18	0.72					0.57	1.14	0.10
Uniform Delay, d1		17.8	15.2	15.1	20.4					18.5	24.9	14.5
Progression Factor		1.41	1.52	0.50	0.42					1.99	1.86	2.56
Incremental Delay, d2		2.2	1.1	1.1	4.3					4.5	71.5	0.4
Delay (s)		27.3	24.2	8.6	12.8					41.3	117.9	37.4
Level of Service		C	C	A	B					D	F	D
Approach Delay (s)		26.7			12.4			0.0			106.2	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	586	0	0	510	170	122	1412	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5255				
Flt Permitted	0.33	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	546	1676			1676	803		5255				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	637	0	0	554	185	133	1535	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	52	637	0	0	554	175	0	1774	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	293	899			899	430		1880				
v/s Ratio Prot		c0.38			0.33							
v/s Ratio Perm	0.10					0.22		0.34				
v/c Ratio	0.18	0.71			0.62	0.41		0.94				
Uniform Delay, d1	10.7	15.6			14.4	12.4		28.0				
Progression Factor	0.68	0.65			1.36	1.38		0.89				
Incremental Delay, d2	1.2	4.3			1.9	1.7		1.4				
Delay (s)	8.4	14.4			21.6	18.8		26.3				
Level of Service	A	B			C	B		C				
Approach Delay (s)		14.0			20.9			26.3			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	465	67	23	481	119	0	755	56	0	1059	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	0.89	1.00	1.00	0.88	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1417	1676	801	1404	1676	799		3001			2800	
Flt Permitted	0.29	1.00	1.00	0.31	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	436	1676	801	455	1676	799		3001			2800	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	505	73	25	523	129	0	821	61	0	1151	222
RTOR Reduction (vph)	0	0	2	0	0	2	0	4	0	0	4	0
Lane Group Flow (vph)	46	505	71	25	523	127	0	878	0	0	1369	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	208	800	382	217	800	381		1367			1275	
v/s Ratio Prot		0.30			c0.31			0.29			c0.49	
v/s Ratio Perm	0.11		0.09	0.05		0.16						
v/c Ratio	0.22	0.63	0.19	0.12	0.65	0.33		0.64			1.07	
Uniform Delay, d1	13.7	17.6	13.5	13.0	17.8	14.6		18.9			24.5	
Progression Factor	1.44	1.50	1.44	1.89	1.68	1.84		1.20			1.15	
Incremental Delay, d2	1.6	2.5	0.7	0.9	3.6	2.0		2.0			46.8	
Delay (s)	21.4	28.8	20.1	25.4	33.5	28.8		24.7			75.0	
Level of Service	C	C	C	C	C	C		C			E	
Approach Delay (s)		27.3			32.3			24.7			75.0	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	448	41	13	466	64	11	775	63	0	610	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.89	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1410	1676	439	1593	1676	881		2994			1676	
Flt Permitted	0.30	1.00	1.00	0.32	1.00	1.00		0.92			1.00	
Satd. Flow (perm)	449	1676	439	538	1676	881		2744			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	487	45	14	507	70	12	842	68	0	663	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	3	0	0	0	0
Lane Group Flow (vph)	30	487	27	14	507	52	0	919	0	0	663	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Effective Green, g (s)	40.1	40.1	40.1	40.1	40.1	40.1		39.4			39.4	
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45		0.44			0.44	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	200	746	195	239	746	392		1201			733	
v/s Ratio Prot		0.29			c0.30						c0.40	
v/s Ratio Perm	0.07		0.06	0.03		0.06		0.33				
v/c Ratio	0.15	0.65	0.14	0.06	0.68	0.13		0.76			0.90	
Uniform Delay, d1	14.8	19.5	14.8	14.2	19.8	14.7		21.4			23.5	
Progression Factor	0.45	0.73	0.43	0.86	1.08	1.12		0.86			0.54	
Incremental Delay, d2	1.2	3.4	1.2	0.4	4.1	0.6		1.9			15.2	
Delay (s)	7.9	17.6	7.4	12.7	25.4	17.1		20.3			27.9	
Level of Service	A	B	A	B	C	B		C			C	
Approach Delay (s)		16.3			24.1			20.3			27.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	79	64	414	0	0	0	0	71	959	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.88	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1409	1676						4399	618
Flt Permitted		1.00	1.00	0.31	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	464	1676						4399	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	86	70	450	0	0	0	0	77	1042	153
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	489	66	70	450	0	0	0	0	0	1119	68
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	197	713						1964	276
v/s Ratio Prot		c0.29			0.27							
v/s Ratio Perm			0.08	0.15							0.25	0.11
v/c Ratio		0.69	0.18	0.36	0.63						0.57	0.25
Uniform Delay, d1		21.0	16.1	17.5	20.3						18.5	15.5
Progression Factor		1.59	1.92	1.00	1.00						1.38	4.56
Incremental Delay, d2		4.1	0.8	5.0	4.2						0.9	1.6
Delay (s)		37.5	31.8	22.4	24.5						26.4	72.2
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.7			24.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2182	376	267	2316	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2372	409	290	2517	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	93	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2372	287	197	2517	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	1423				
v/s Ratio Prot					c0.41			c0.55				
v/s Ratio Perm						0.26	0.12					
v/c Ratio					0.93	0.58	0.40	1.77				
Uniform Delay, d1					23.9	18.9	24.4	31.0				
Progression Factor					1.00	1.00	0.80	0.86				
Incremental Delay, d2					7.8	5.0	1.4	347.7				
Delay (s)					31.7	23.9	20.9	374.4				
Level of Service					C	C	C	F				
Approach Delay (s)		0.0			30.5			337.9			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	184.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	1303	116	73	758	0	0	960	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.96	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4414		1522	3185			3185	975
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1160	4414		305	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	1416	126	79	824	0	0	1043	198
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	101	1530	0	79	824	0	0	1043	197
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1716		166	1734			1734	530
v/s Ratio Prot					c0.35			0.26			c0.33	
v/s Ratio Perm				0.09			0.26					0.20
v/c Ratio				0.22	0.89		0.48	0.48			0.60	0.37
Uniform Delay, d1				18.4	25.7		12.6	12.6			13.9	11.7
Progression Factor				1.84	1.77		1.13	0.91			1.58	1.70
Incremental Delay, d2				0.9	5.7		8.6	0.8			0.1	0.2
Delay (s)				34.8	51.2		22.8	12.3			22.1	20.1
Level of Service				C	D		C	B			C	C
Approach Delay (s)		0.0			50.2			13.3			21.8	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	1252	73	102	789	0	0	437	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5598			3167			1676	971
Flt Permitted					1.00			0.64			1.00	1.00
Satd. Flow (perm)					5598			2025			1676	971
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	1361	79	111	858	0	0	475	235
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	63
Lane Group Flow (vph)	0	0	0	0	1517	0	0	969	0	0	475	172
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					38.0			41.7			27.7	27.7
Effective Green, g (s)					38.0			41.7			27.7	27.7
Actuated g/C Ratio					0.42			0.46			0.31	0.31
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2363			1048			515	298
v/s Ratio Prot								c0.09			0.28	
v/s Ratio Perm					0.27			c0.34				0.18
v/c Ratio					0.64			0.92			0.92	0.58
Uniform Delay, d1					20.6			22.7			30.1	26.2
Progression Factor					1.80			1.49			1.66	2.13
Incremental Delay, d2					1.1			10.4			14.8	4.1
Delay (s)					38.3			44.1			64.8	60.0
Level of Service					D			D			E	E
Approach Delay (s)		0.0			38.3			44.1			63.2	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	130	1181	0	0	0	0	0	770	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5561						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5561						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	1284	0	0	0	0	0	837	234
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1404	0	0	0	0	0	837	223
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2263	634
v/s Ratio Prot											c0.18	
v/s Ratio Perm					0.25							0.17
v/c Ratio					0.63						0.37	0.35
Uniform Delay, d1					21.4						14.1	13.9
Progression Factor					1.00						1.83	1.92
Incremental Delay, d2					1.3						0.4	1.3
Delay (s)					22.8						26.1	28.0
Level of Service					C						C	C
Approach Delay (s)		0.0			22.8			0.0			26.5	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	346	1737	0	0	0	0	0	1522	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	957			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	957			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	376	1888	0	0	0	0	0	1654	210	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	0	16	0	0	0
Lane Group Flow (vph)	323	1911	0	0	0	0	0	1654	194	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	39.6	39.6						39.8	39.8			
Effective Green, g (s)	39.6	39.6						39.8	39.8			
Actuated g/C Ratio	0.44	0.44						0.44	0.44			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	481	2380						1408	423			
v/s Ratio Prot								c0.52				
v/s Ratio Perm	0.30	0.35							0.20			
v/c Ratio	0.67	0.80						1.17	0.46			
Uniform Delay, d1	20.0	21.8						25.1	17.6			
Progression Factor	1.00	1.00						1.23	1.46			
Incremental Delay, d2	7.3	3.0						79.4	0.3			
Delay (s)	27.3	24.8						110.4	25.9			
Level of Service	C	C						F	C			
Approach Delay (s)		25.2			0.0			100.9			0.0	
Approach LOS		C			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1441	280	0	0	0	0	0	0	181	1444	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5626								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5626								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1566	304	0	0	0	0	0	0	197	1570	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1861	0	0	0	0	0	0	0	185	1570	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2187								785	2845	
v/s Ratio Prot		c0.33									c0.27	
v/s Ratio Perm										0.12		
v/c Ratio		0.85								0.24	0.55	
Uniform Delay, d1		25.1								13.1	15.9	
Progression Factor		1.64								0.48	0.73	
Incremental Delay, d2		2.8								0.5	0.6	
Delay (s)		43.9								6.8	12.1	
Level of Service		D								A	B	
Approach Delay (s)		43.9			0.0			0.0			11.5	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	1403	46	0	0	0	0	636	99	104	424	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.98	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5442						2976			3106	
Flt Permitted		0.99						1.00			0.68	
Satd. Flow (perm)		5442						2976			2123	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	1525	50	0	0	0	0	691	108	113	461	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1778	0	0	0	0	0	799	0	0	574	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1934						1719			1226	
v/s Ratio Prot								0.27				
v/s Ratio Perm		0.33									c0.27	
v/c Ratio		0.92						0.46			0.47	
Uniform Delay, d1		27.8						11.0			11.0	
Progression Factor		1.25						1.00			0.51	
Incremental Delay, d2		5.6						0.9			1.2	
Delay (s)		40.2						11.9			6.9	
Level of Service		D						B			A	
Approach Delay (s)		40.2			0.0			11.9			6.9	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1716	261	0	0	0	0	0	0	251	2000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1865	284	0	0	0	0	0	0	273	2174	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1865	271	0	0	0	0	0	0	258	2174	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.41									c0.48	
v/s Ratio Perm			0.23							0.18		
v/c Ratio		1.03	0.58							0.36	0.97	
Uniform Delay, d1		27.2	21.3							14.1	22.2	
Progression Factor		0.78	0.67							0.96	0.76	
Incremental Delay, d2		26.1	3.6							0.8	9.1	
Delay (s)		47.2	18.0							14.3	26.0	
Level of Service		D	B							B	C	
Approach Delay (s)		43.3			0.0			0.0			24.7	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	546	2646	0	0	0	0	0	2217	335	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4412						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4412						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	593	2876	0	0	0	0	0	2410	364	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	3456	0	0	0	0	0	2410	352	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1769						2252	635			
v/s Ratio Prot								c0.53				
v/s Ratio Perm		0.78							0.27			
v/c Ratio		1.95						1.07	0.55			
Uniform Delay, d1		26.9						22.9	16.0			
Progression Factor		1.14						0.67	0.58			
Incremental Delay, d2		430.9						40.0	3.1			
Delay (s)		461.7						55.4	12.4			
Level of Service		F						E	B			
Approach Delay (s)		461.7			0.0			49.7			0.0	
Approach LOS		F			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	278.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	1524	57	0	0	0	0	706	74	123	1019	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.93	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4462						3051		1488	3185	
Flt Permitted		1.00						1.00		0.27	1.00	
Satd. Flow (perm)		4462						3051		427	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	1657	62	0	0	0	0	767	80	134	1108	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1756	0	0	0	0	0	847	0	134	1108	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1586						1762		246	1840	
v/s Ratio Prot								0.28			c0.35	
v/s Ratio Perm		0.39								0.31		
v/c Ratio		1.11						0.48		0.54	0.60	
Uniform Delay, d1		29.0						11.1		11.7	12.3	
Progression Factor		1.54						0.22		0.37	0.33	
Incremental Delay, d2		49.4						0.7		7.3	1.3	
Delay (s)		94.2						3.1		11.6	5.4	
Level of Service		F						A		B	A	
Approach Delay (s)		94.2			0.0			3.1			6.0	
Approach LOS		F			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	1507	115	0	0	0	0	893	116	0	551	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4355						3005			1676	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4355						3005			1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	1638	125	0	0	0	0	971	126	0	599	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	213	1753	0	0	0	0	0	1096	0	0	599	0
Confl. Peds. (#/hr)	296		272						287	287		
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1896						1352			754	
v/s Ratio Prot		c0.40						c0.36			0.36	
v/s Ratio Perm	0.20											
v/c Ratio	0.46	0.92						0.81			0.79	
Uniform Delay, d1	17.9	24.0						21.4			21.2	
Progression Factor	0.56	0.71						0.80			0.43	
Incremental Delay, d2	0.8	2.8						2.4			4.7	
Delay (s)	10.8	19.9						19.7			13.8	
Level of Service	B	B						B			B	
Approach Delay (s)		18.9			0.0			19.7			13.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	332	1017	130	0	0	0	0	1293	100	80	923	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4341						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.10	1.00	
Satd. Flow (perm)	1221	4341						3185	1110	174	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	1105	141	0	0	0	0	1405	109	87	1003	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	361	1228	0	0	0	0	0	1405	97	87	1003	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1437						1772	617	96	1772	
v/s Ratio Prot		0.28						0.44			0.31	
v/s Ratio Perm	c0.30								0.09	c0.50		
v/c Ratio	0.89	0.85						0.79	0.16	0.91	0.57	
Uniform Delay, d1	28.6	28.1						15.8	9.7	17.8	12.9	
Progression Factor	1.58	1.61						1.61	2.01	1.00	1.00	
Incremental Delay, d2	11.6	2.7						2.1	0.3	68.9	1.3	
Delay (s)	56.9	47.8						27.6	19.8	86.7	14.2	
Level of Service	E	D						C	B	F	B	
Approach Delay (s)		49.9			0.0			27.1			20.0	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1060	227	108	1648	237	272	1444	202	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.76	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1078	1475	4577	950	1164	3185	1246			
Flt Permitted	0.15	1.00	1.00	0.23	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	252	4577	1078	363	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	1152	247	117	1791	258	296	1570	220	0	0	0
RTOR Reduction (vph)	0	0	97	0	0	100	0	0	44	0	0	0
Lane Group Flow (vph)	207	1152	150	117	1791	158	296	1570	176	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Effective Green, g (s)	34.6	34.6	54.8	22.6	22.6	22.6	43.4	43.4	43.4			
Actuated g/C Ratio	0.38	0.38	0.61	0.25	0.25	0.25	0.48	0.48	0.48			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1759	656	91	1149	238	561	1535	600			
v/s Ratio Prot	c0.09	0.25	0.05		c0.39		0.12	c0.49				
v/s Ratio Perm	0.28		0.09	0.32		0.17	0.14		0.14			
v/c Ratio	0.96	0.65	0.23	1.29	1.56	0.67	0.53	1.02	0.29			
Uniform Delay, d1	23.4	22.8	8.0	33.7	33.7	30.3	16.2	23.3	14.1			
Progression Factor	1.00	1.00	1.00	1.10	1.07	1.24	0.51	0.71	0.27			
Incremental Delay, d2	48.9	1.9	0.2	165.3	253.7	7.6	0.1	13.8	0.1			
Delay (s)	72.2	24.7	8.2	202.2	289.9	45.1	8.3	30.3	3.8			
Level of Service	E	C	A	F	F	D	A	C	A			
Approach Delay (s)		28.3			256.0			24.4			0.0	
Approach LOS		C			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	111.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1045	66	56	1367	0	0	0	0	70	1322	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.14	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	240	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1136	72	61	1486	0	0	0	0	76	1437	453
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1136	57	61	1486	0	0	0	0	0	1513	439
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	114	1521						2345	581
v/s Ratio Prot		0.36			c0.47							
v/s Ratio Perm			0.04	0.25							0.26	c0.31
v/c Ratio		0.75	0.08	0.54	0.98						0.65	0.76
Uniform Delay, d1		19.1	12.8	16.5	23.0						21.4	22.8
Progression Factor		0.40	0.15	1.00	1.00						1.66	1.66
Incremental Delay, d2		2.8	0.2	16.8	18.2						1.1	7.4
Delay (s)		10.5	2.1	33.3	41.2						36.8	45.2
Level of Service		B	A	C	D						D	D
Approach Delay (s)		10.0			40.9			0.0			38.7	
Approach LOS		B			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	1050	45	32	1112	73	100	525	54	31	309	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3125		1593	3086			3046			2888	
Flt Permitted	0.11	1.00		0.13	1.00			0.74			0.87	
Satd. Flow (perm)	179	3125		225	3086			2261			2507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	1141	49	35	1209	79	109	571	59	34	336	127
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	5	0
Lane Group Flow (vph)	146	1187	0	35	1283	0	0	732	0	0	492	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	89	1568		112	1549			908			1007	
v/s Ratio Prot		0.38			0.42							
v/s Ratio Perm	c0.82			0.16				c0.32			0.20	
v/c Ratio	1.64	0.76		0.31	0.83			0.81			0.49	
Uniform Delay, d1	24.9	20.0		14.7	21.2			26.5			22.3	
Progression Factor	1.00	1.00		0.48	0.59			1.00			1.00	
Incremental Delay, d2	333.0	3.5		3.8	2.8			7.6			1.7	
Delay (s)	357.9	23.5		10.9	15.3			34.1			23.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		60.0			15.2			34.1			23.9	
Approach LOS		E			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	977	112	111	1314	0	0	0	0	121	1609	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3136		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.14	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3136		228	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1062	122	121	1428	0	0	0	0	132	1749	305
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	1183	0	121	1428	0	0	0	0	132	1749	292
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		114	1592					637	1830	570
v/s Ratio Prot		0.38			0.45						c0.38	
v/s Ratio Perm				c0.53						0.08		0.20
v/c Ratio		0.75		1.06	0.90					0.21	0.96	0.51
Uniform Delay, d1		20.1		25.0	22.7					19.6	29.1	22.6
Progression Factor		1.04		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.2		101.8	8.3					0.7	12.9	3.3
Delay (s)		23.1		126.8	31.0					20.4	42.0	25.9
Level of Service		C		F	C					C	D	C
Approach Delay (s)		23.1			38.5			0.0			38.5	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	965	0	0	1243	87	152	1026	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3132			4529	1327			
Flt Permitted	0.09	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	145	3185			3132			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1049	0	0	1351	95	165	1115	51	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	32	0	0	0
Lane Group Flow (vph)	187	1049	0	0	1440	0	0	1280	19	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	74	1631			1604			1710	501			
v/s Ratio Prot		0.33			0.46							
v/s Ratio Perm	c1.29							0.28	0.01			
v/c Ratio	2.53	0.64			0.90			0.75	0.04			
Uniform Delay, d1	21.9	16.0			19.8			24.3	17.7			
Progression Factor	1.00	1.00			0.71			0.52	0.29			
Incremental Delay, d2	725.3	2.0			8.1			2.5	0.1			
Delay (s)	747.2	17.9			22.2			15.2	5.3			
Level of Service	F	B			C			B	A			
Approach Delay (s)		128.3			22.2			14.8			0.0	
Approach LOS		F			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	791	58	47	668	78	47	650	58	53	935	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.98	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1557	3112		1533	3103		1593	3110		1549	3185	1230
Flt Permitted	0.29	1.00		0.25	1.00		0.13	1.00		0.20	1.00	1.00
Satd. Flow (perm)	478	3112		401	3103		216	3110		319	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	860	63	51	726	85	51	707	63	58	1016	174
RTOR Reduction (vph)	0	4	0	0	10	0	0	7	0	0	0	81
Lane Group Flow (vph)	77	919	0	51	801	0	51	763	0	58	1016	93
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	278	1815		233	1810		74	1071		109	1097	423
v/s Ratio Prot		c0.30			0.26			0.25			c0.32	
v/s Ratio Perm	0.16			0.13			0.24			0.18		0.08
v/c Ratio	0.28	0.51		0.22	0.44		0.69	0.71		0.53	0.93	0.22
Uniform Delay, d1	9.3	11.1		9.0	10.5		25.4	25.6		23.7	28.4	20.9
Progression Factor	2.30	2.21		1.29	1.01		0.58	0.53		1.54	1.53	2.73
Incremental Delay, d2	1.9	0.8		1.6	0.6		39.3	3.8		14.3	12.2	1.0
Delay (s)	23.3	25.3		13.2	11.2		54.0	17.4		50.8	55.7	58.0
Level of Service	C	C		B	B		D	B		D	E	E
Approach Delay (s)		25.2			11.3			19.7			55.8	
Approach LOS		C			B			B			E	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	783	85	98	727	107	40	813	78	0	642	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.96	1.00		0.95	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1537	3053		1517	3043			3178	1263		1676	
Flt Permitted	0.22	1.00		0.20	1.00			0.71	1.00		1.00	
Satd. Flow (perm)	352	3053		323	3043			2255	1263		1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	851	92	107	790	116	43	884	85	0	698	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	24	0	0	0
Lane Group Flow (vph)	95	934	0	107	893	0	0	927	61	0	698	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Effective Green, g (s)	41.0	41.0		41.0	41.0			39.0	39.0		39.0	
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	160	1390		147	1386			977	547		726	
v/s Ratio Prot		0.31			0.29						c0.42	
v/s Ratio Perm	0.27			c0.33				0.41	0.05			
v/c Ratio	0.59	0.67		0.73	0.64			0.95	0.11		0.96	
Uniform Delay, d1	18.3	19.2		20.0	18.9			24.5	15.2		24.8	
Progression Factor	0.72	0.72		1.48	1.54			0.59	0.54		1.24	
Incremental Delay, d2	13.5	2.3		14.3	1.1			15.7	0.3		17.1	
Delay (s)	26.8	16.1		43.8	30.2			30.2	8.5		47.9	
Level of Service	C	B		D	C			C	A		D	
Approach Delay (s)		17.1			31.6			28.4			47.9	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	614	136	95	816	132	75	958	115	65	822	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3099		1593	3119		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.11	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1593	3099		577	3119		176	3185	1425	246	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	667	148	103	887	143	82	1041	125	71	893	325
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	153
Lane Group Flow (vph)	208	794	0	103	1016	0	82	1041	76	71	893	172
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1435		190	1029		74	1344	601	103	707	601
v/s Ratio Prot	c0.13	0.26			c0.33			0.33			c0.53	
v/s Ratio Perm				0.18			0.46		0.05	0.29		0.12
v/c Ratio	1.39	0.55		0.54	0.99		1.11	0.77	0.13	0.69	1.26	0.29
Uniform Delay, d1	40.8	17.4		24.6	30.0		26.0	22.3	15.9	21.2	26.0	17.1
Progression Factor	0.79	1.16		1.00	1.00		1.02	1.01	1.44	0.66	0.70	0.33
Incremental Delay, d2	204.3	1.3		10.7	25.2		131.2	4.0	0.4	27.7	128.1	1.0
Delay (s)	236.6	21.6		35.3	55.1		157.8	26.4	23.2	41.6	146.4	6.6
Level of Service	F	C		D	E		F	C	C	D	F	A
Approach Delay (s)		65.3			53.3			34.8			105.4	
Approach LOS		E			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	65.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	38	55	213	481	315	7	1792	0	10	311	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		201	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	41	60	232	523	342	8	1948	0	11	338	39
RTOR Reduction (vph)	0	0	45	0	0	130	0	0	0	0	0	25
Lane Group Flow (vph)	87	41	15	232	523	212	8	1948	0	11	338	14
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.2	17.5	22.5	11.1	21.4	21.4	5.0	43.4		33.4	33.4	33.4
Effective Green, g (s)	7.2	17.5	22.5	11.1	21.4	21.4	5.0	43.4		33.4	33.4	33.4
Actuated g/C Ratio	0.08	0.19	0.25	0.12	0.24	0.24	0.06	0.48		0.37	0.37	0.37
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	247	325	356	196	757	338	88	1535		74	621	528
v/s Ratio Prot	c0.03	0.02	0.00	c0.15	c0.16		0.01	c0.61			0.20	
v/s Ratio Perm			0.01			0.15				0.05		0.01
v/c Ratio	0.35	0.13	0.04	1.18	0.69	0.63	0.09	1.27		0.15	0.54	0.03
Uniform Delay, d1	39.2	29.9	25.6	39.5	31.3	30.7	40.3	23.3		18.8	22.3	18.0
Progression Factor	1.00	1.00	1.00	1.33	1.21	1.42	1.00	1.00		0.66	0.69	1.00
Incremental Delay, d2	0.9	0.2	0.0	117.4	2.3	3.0	0.4	126.4		3.5	2.9	0.1
Delay (s)	40.1	30.1	25.6	169.7	40.1	46.8	40.8	149.7		16.0	18.2	18.1
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.3			69.6			149.2			18.1	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	105.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	51	84	534	0	0	0	0	0	1287	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1665						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1665						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	55	91	580	0	0	0	0	0	1399	252
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	110
Lane Group Flow (vph)	0	0	42	0	671	0	0	0	0	0	1399	142
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.31	
v/s Ratio Perm			0.03		0.40							0.11
v/c Ratio			0.07		0.91						0.69	0.24
Uniform Delay, d1			14.4		23.3						19.9	15.5
Progression Factor			0.43		1.97						1.47	3.76
Incremental Delay, d2			0.3		8.0						1.6	0.8
Delay (s)			6.4		53.9						30.9	58.9
Level of Service			A		D						C	E
Approach Delay (s)		6.4			53.9			0.0			35.2	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	521	144	29	233	0	0	319	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1669	1403		3163			3080	
Flt Permitted					1.00	1.00		0.88			1.00	
Satd. Flow (perm)					1669	1403		2807			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	566	157	32	253	0	0	347	72
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	0	617	133	0	285	0	0	400	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					32.2	32.2		48.6			48.6	
Effective Green, g (s)					32.2	32.2		48.6			48.6	
Actuated g/C Ratio					0.36	0.36		0.54			0.54	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					597	501		1515			1663	
v/s Ratio Prot											c0.13	
v/s Ratio Perm					0.37	0.09		0.10				
v/c Ratio					1.03	0.26		0.19			0.24	
Uniform Delay, d1					28.9	20.5		10.6			10.9	
Progression Factor					1.66	1.98		1.00			1.00	
Incremental Delay, d2					40.2	0.9		0.3			0.3	
Delay (s)					88.3	41.6		10.9			11.3	
Level of Service					F	D		B			B	
Approach Delay (s)		0.0			78.8			10.9			11.3	
Approach LOS		A			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	176	507	0	0	0	0	0	1687	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	191	551	0	0	0	0	0	1834	210
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	0	0	191	551	0	0	0	0	0	1834	125
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.33						c0.40	
v/s Ratio Perm				0.13								0.11
v/c Ratio				0.34	0.84						0.79	0.21
Uniform Delay, d1				19.3	24.9						18.4	12.4
Progression Factor				0.52	0.67						1.00	1.00
Incremental Delay, d2				0.6	4.7						2.9	0.8
Delay (s)				10.6	21.4						21.4	13.2
Level of Service				B	C						C	B
Approach Delay (s)		0.0			18.6			0.0			20.5	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	612	136	147	1172	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	665	148	160	1274	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	22	0	17	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	665	126	0	1417	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					35.2	35.2		45.4				
Effective Green, g (s)					35.2	35.2		45.4				
Actuated g/C Ratio					0.39	0.39		0.50				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					655	513		2288				
v/s Ratio Prot					c0.40							
v/s Ratio Perm						0.10		0.31				
v/c Ratio					1.02	0.25		0.62				
Uniform Delay, d1					27.4	18.5		16.1				
Progression Factor					0.90	0.73		1.00				
Incremental Delay, d2					14.6	0.1		1.3				
Delay (s)					39.4	13.5		17.3				
Level of Service					D	B		B				
Approach Delay (s)		0.0			34.7			17.3			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	721	83	22	635	0	0	1028	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1656	1277	1593	3185			3185	1277
Flt Permitted					0.99	1.00	0.14	1.00			1.00	1.00
Satd. Flow (perm)					1656	1277	231	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	784	90	24	690	0	0	1117	83
RTOR Reduction (vph)	0	0	0	0	0	14	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	891	76	24	690	0	0	1117	55
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					41.0	41.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					41.0	41.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.46	0.46	0.48	0.48			0.48	0.48
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					754	581	110	1521			1521	610
v/s Ratio Prot								0.22			c0.35	
v/s Ratio Perm					0.54	0.06	0.10					0.04
v/c Ratio					1.18	0.13	0.22	0.45			0.73	0.09
Uniform Delay, d1					24.5	14.2	13.7	15.7			18.9	12.8
Progression Factor					1.45	1.77	1.00	1.00			1.67	2.96
Incremental Delay, d2					83.1	0.0	4.5	1.0			1.8	0.2
Delay (s)					118.6	25.1	18.2	16.6			33.3	38.1
Level of Service					F	C	B	B			C	D
Approach Delay (s)		0.0			110.1			16.7			33.7	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	647	58	73	960	0	0	725	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes					1.00	0.70	1.00	1.00			0.94	
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.97	
Flt Protected					1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1633	998	1593	3185			1524	
Flt Permitted					1.00	1.00	0.09	1.00			1.00	
Satd. Flow (perm)					1633	998	151	3185			1524	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	703	63	79	1043	0	0	788	218
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	749	26	79	1043	0	0	995	0
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	
Lane Grp Cap (vph)					653	399	74	1574			753	
v/s Ratio Prot								0.33			c0.65	
v/s Ratio Perm					0.46	0.03	0.52					
v/c Ratio					1.15	0.06	1.07	0.66			1.32	
Uniform Delay, d1					27.0	16.6	22.8	17.1			22.8	
Progression Factor					0.55	0.19	1.00	1.00			0.93	
Incremental Delay, d2					80.9	0.3	124.4	2.2			149.9	
Delay (s)					95.8	3.4	147.1	19.3			170.9	
Level of Service					F	A	F	B			F	
Approach Delay (s)		0.0			88.7			28.3			170.9	
Approach LOS		A			F			C			F	

Intersection Summary			
HCM 2000 Control Delay	93.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	115.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	458	107	56	1015	0	0	919	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.20	1.00			1.00	
Satd. Flow (perm)					3159	1425	343	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	498	116	61	1103	0	0	999	132
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	599	54	61	1103	0	0	1120	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	232	2158			2121	
v/s Ratio Prot								0.35			c0.36	
v/s Ratio Perm					0.19	0.04	0.18					
v/c Ratio					0.74	0.15	0.26	0.51			0.53	
Uniform Delay, d1					30.8	25.9	5.7	7.1			7.3	
Progression Factor					1.00	1.00	1.00	1.00			1.55	
Incremental Delay, d2					6.1	0.9	2.7	0.9			0.1	
Delay (s)					36.9	26.8	8.4	8.0			11.4	
Level of Service					D	C	A	A			B	
Approach Delay (s)		0.0			35.2			8.0			11.4	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix J
Horizon Year (2040) With 7th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	685	554	253	481	58	73	134	73	200	772	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.92	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.85	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1460	3185	1232	1584	4408		1593	3185	1222	1349	3083	
Flt Permitted	0.42	1.00	1.00	0.22	1.00		0.20	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	646	3185	1232	363	4408		334	3185	1222	936	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	745	602	275	523	63	79	146	79	217	839	98
RTOR Reduction (vph)	0	0	169	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	111	745	433	275	564	0	79	146	58	217	925	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Effective Green, g (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1041	403	337	2197		186	1096	577	228	753	
v/s Ratio Prot		0.23		c0.10	0.13		c0.02	0.05	0.01		c0.30	
v/s Ratio Perm	0.17		c0.35	0.30			0.12		0.03	0.23		
v/c Ratio	0.53	0.72	1.07	0.82	0.26		0.42	0.13	0.10	0.95	1.23	
Uniform Delay, d1	19.1	20.7	23.6	12.1	10.1		17.8	15.8	10.2	26.0	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	4.2	66.2	14.1	0.3		1.6	0.3	0.1	48.3	114.3	
Delay (s)	28.2	24.9	89.8	26.2	10.4		19.3	16.0	10.3	74.3	140.7	
Level of Service	C	C	F	C	B		B	B	B	E	F	
Approach Delay (s)		51.9			15.4			15.4			128.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	613	186	249	607	272	25	89	98	166	1289	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1553	3185	1010	3090	3185	1055	1593	3185	1425	1191	3185	1126
Flt Permitted	0.31	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	514	3185	1010	3090	3185	1055	197	3185	1425	866	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	666	202	271	660	296	27	97	107	180	1401	200
RTOR Reduction (vph)	0	0	152	0	0	91	0	0	96	0	0	51
Lane Group Flow (vph)	162	666	50	271	660	205	27	97	11	180	1401	149
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.6	24.6	24.6	10.9	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.6	24.6	24.6	10.9	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	783	248	336	1226	406	66	1082	142	294	1082	461
v/s Ratio Prot	0.05	c0.21		c0.09	c0.21			0.03	0.01		c0.44	0.02
v/s Ratio Perm	0.17		0.05			0.19	0.14			0.21		0.11
v/c Ratio	0.69	0.85	0.20	0.81	0.54	0.50	0.41	0.09	0.08	0.61	1.29	0.32
Uniform Delay, d1	27.0	35.9	29.9	43.5	23.9	23.5	25.3	22.5	40.8	27.5	33.0	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	11.2	1.8	13.2	0.5	1.0	17.7	0.2	0.2	9.2	139.6	0.4
Delay (s)	35.1	47.2	31.7	56.7	24.3	24.5	43.0	22.6	41.0	36.7	172.6	20.5
Level of Service	D	D	C	E	C	C	D	C	D	D	F	C
Approach Delay (s)		42.2			31.5			33.5			141.8	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	80.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	667	194	182	872	256	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2091
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2091
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	725	211	198	948	278	357
RTOR Reduction (vph)	0	130	0	0	0	18
Lane Group Flow (vph)	725	81	198	948	278	339
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.0	27.0	12.2	42.7	17.5	29.7
Effective Green, g (s)	27.0	27.0	12.2	42.7	17.5	29.7
Actuated g/C Ratio	0.39	0.39	0.17	0.61	0.25	0.42
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228	455	277	1942	772	887
v/s Ratio Prot	c0.23		c0.12	0.30	0.09	c0.07
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.59	0.18	0.71	0.49	0.36	0.38
Uniform Delay, d1	17.1	14.2	27.3	7.6	21.6	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9	8.5	0.9	0.3	0.3
Delay (s)	19.2	15.0	35.7	8.5	21.9	14.1
Level of Service	B	B	D	A	C	B
Approach Delay (s)	18.3			13.2	17.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	693	126	111	930	93	95	258	29	66	1207	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	1.00	1.00		0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1463	3185	1034	1593	3097		1532	3185	885
Flt Permitted	0.13	1.00	1.00	0.32	1.00	1.00	0.95	1.00		0.56	1.00	1.00
Satd. Flow (perm)	222	3185	1053	490	3185	1034	1593	3097		907	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	753	137	121	1011	101	103	280	32	72	1312	168
RTOR Reduction (vph)	0	0	85	0	0	70	0	9	0	0	0	86
Lane Group Flow (vph)	79	753	52	121	1011	31	103	303	0	72	1312	82
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	148	962	312	159	1314		402	1174	326
v/s Ratio Prot	0.02	c0.24			c0.32		c0.06	0.10		0.01	c0.41	
v/s Ratio Perm	0.18		0.05	0.25		0.03				0.07		0.09
v/c Ratio	0.54	0.62	0.13	0.82	1.05	0.10	0.65	0.23		0.18	1.12	0.25
Uniform Delay, d1	21.7	22.7	18.2	29.1	31.4	22.6	39.0	16.5		16.3	28.4	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	2.4	0.7	37.4	43.3	0.6	8.8	0.1		0.2	64.8	0.4
Delay (s)	25.8	25.1	18.9	66.5	74.7	23.2	47.7	16.6		16.5	93.2	20.2
Level of Service	C	C	B	E	E	C	D	B		B	F	C
Approach Delay (s)		24.3			69.7			24.3			81.7	
Approach LOS		C			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	602	85	61	819	168	34	371	59	62	591	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1585	3185	1049	1433	3185	1181	1568	4360		1437	2945	
Flt Permitted	0.20	1.00	1.00	0.40	1.00	1.00	0.18	1.00		0.45	1.00	
Satd. Flow (perm)	337	3185	1049	608	3185	1181	300	4360		684	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	654	92	66	890	183	37	403	64	67	642	295
RTOR Reduction (vph)	0	0	14	0	0	76	0	31	0	0	77	0
Lane Group Flow (vph)	133	654	78	66	890	107	37	436	0	67	860	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	1833	603	275	1442	534	94	1370		214	925	
v/s Ratio Prot	c0.04	0.21			c0.28			0.10			c0.29	
v/s Ratio Perm	0.22		0.07	0.11		0.09	0.12			0.10		
v/c Ratio	0.45	0.36	0.13	0.24	0.62	0.20	0.39	0.32		0.31	0.93	
Uniform Delay, d1	8.4	7.9	6.8	11.8	14.5	11.5	18.8	18.3		18.3	23.3	
Progression Factor	1.00	1.00	1.00	1.09	1.15	1.80	1.94	2.17		1.00	1.00	
Incremental Delay, d2	1.1	0.5	0.4	1.5	1.4	0.6	11.5	0.6		3.8	16.8	
Delay (s)	9.5	8.5	7.3	14.3	18.1	21.3	47.9	40.3		22.0	40.1	
Level of Service	A	A	A	B	B	C	D	D		C	D	
Approach Delay (s)		8.5			18.4			40.9			38.9	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	543	84	42	684	7	0	0	0	88	1186	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1582	3185	1249	1513	3175						4545	1255
Flt Permitted	0.21	1.00	1.00	0.43	1.00						1.00	1.00
Satd. Flow (perm)	348	3185	1249	684	3175						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	590	91	46	743	8	0	0	0	96	1289	412
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	82	590	70	46	750	0	0	0	0	0	1385	394
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	263	1446	567	222	1034						1785	600
v/s Ratio Prot	0.03	0.19			c0.24							c0.06
v/s Ratio Perm	0.11		0.06	0.07							0.30	0.26
v/c Ratio	0.31	0.41	0.12	0.21	0.73						0.78	0.66
Uniform Delay, d1	12.0	12.8	11.0	17.1	20.8						18.6	13.9
Progression Factor	1.25	1.18	1.42	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	0.8	0.4	2.1	4.4						3.4	2.6
Delay (s)	15.7	15.9	16.1	19.2	25.3						21.9	16.5
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		15.9			24.9			0.0			20.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	5	16	53	60	84	12	64	6	41	1310	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.93	1.00	1.00
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2749		1593	2873		1593	3115		1474	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.70	1.00	1.00
Satd. Flow (perm)	1593	2749		1593	2873		206	3115		1093	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	5	17	58	65	91	13	70	7	45	1424	357
RTOR Reduction (vph)	0	12	0	0	68	0	0	4	0	0	0	90
Lane Group Flow (vph)	30	10	0	58	88	0	13	73	0	45	1424	267
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Effective Green, g (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Actuated g/C Ratio	0.07	0.28		0.04	0.25		0.47	0.47		0.47	0.47	0.54
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	113	773		68	726		95	1450		509	1483	698
v/s Ratio Prot	0.02	0.00		c0.04	c0.03			0.02			c0.45	0.03
v/s Ratio Perm							0.06			0.04		0.18
v/c Ratio	0.27	0.01		0.85	0.12		0.14	0.05		0.09	0.96	0.38
Uniform Delay, d1	30.8	18.1		33.3	20.2		10.7	10.2		10.4	18.1	9.4
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0		60.8	0.1		3.0	0.1		0.3	15.6	0.4
Delay (s)	32.0	18.1		94.1	20.2		19.2	15.4		10.8	33.7	9.8
Level of Service	C	B		F	C		B	B		B	C	A
Approach Delay (s)		26.2			40.2			16.0			28.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	439	471	0	111	31	86	400	57	22	1243	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.98		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.91	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3012		1574	3048		1449	3185	1239
Flt Permitted		1.00	1.00		1.00		0.12	1.00		0.46	1.00	1.00
Satd. Flow (perm)		1676	1326		3012		203	3048		696	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	477	512	0	121	34	93	435	62	24	1351	148
RTOR Reduction (vph)	0	0	23	0	21	0	0	16	0	0	0	79
Lane Group Flow (vph)	0	477	489	0	134	0	93	481	0	24	1351	69
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Effective Green, g (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Actuated g/C Ratio		0.39	0.39		0.39		0.47	0.47		0.47	0.47	0.47
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		646	511		1161		94	1419		324	1483	577
v/s Ratio Prot		0.28			0.04			0.16			0.42	
v/s Ratio Perm			c0.37				c0.46			0.03		0.06
v/c Ratio		0.74	0.96		0.12		0.99	0.34		0.07	0.91	0.12
Uniform Delay, d1		18.5	20.9		13.8		18.5	11.9		10.3	17.4	10.6
Progression Factor		1.00	1.00		1.65		1.38	1.44		1.00	1.00	1.00
Incremental Delay, d2		7.4	30.5		0.2		78.9	0.5		0.4	10.0	0.4
Delay (s)		25.9	51.5		22.9		104.5	17.6		10.8	27.3	11.0
Level of Service		C	D		C		F	B		B	C	B
Approach Delay (s)		39.1			22.9			31.3			25.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	617	82	0	427	44	58	387	143	0	692	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2884			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	216	2884			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	671	89	0	464	48	63	421	155	0	752	0
RTOR Reduction (vph)	0	0	57	0	0	31	0	10	0	0	0	0
Lane Group Flow (vph)	0	671	32	0	464	17	63	566	0	0	752	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		25.0	25.0		25.0	25.0	34.6	34.6			25.6	
Effective Green, g (s)		25.0	25.0		25.0	25.0	34.6	34.6			25.6	
Actuated g/C Ratio		0.36	0.36		0.36	0.36	0.49	0.49			0.37	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		598	407		598	471	177	1425			590	
v/s Ratio Prot		c0.40			0.28		0.02	c0.20			c0.47	
v/s Ratio Perm			0.03			0.01	0.16					
v/c Ratio		1.12	0.08		0.78	0.04	0.36	0.40			1.27	
Uniform Delay, d1		22.5	14.9		20.0	14.7	28.0	11.1			22.2	
Progression Factor		0.79	1.52		1.03	1.00	1.83	1.57			0.49	
Incremental Delay, d2		73.2	0.3		7.2	0.1	1.1	0.2			131.4	
Delay (s)		91.0	22.9		27.7	14.8	52.3	17.6			142.4	
Level of Service		F	C		C	B	D	B			F	
Approach Delay (s)		83.0			26.5			21.0			142.4	
Approach LOS		F			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	74.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	394	345	118	394	0	0	0	0	30	1272	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1490	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.30	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	465	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	428	375	128	428	0	0	0	0	33	1383	110
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	428	360	128	428	0	0	0	0	33	1383	59
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	154	555					721	1706	362
v/s Ratio Prot		0.26			0.26						c0.43	
v/s Ratio Perm			c0.31	0.28						0.02		0.09
v/c Ratio		0.77	0.92	0.83	0.77					0.05	0.81	0.16
Uniform Delay, d1		21.0	22.5	21.6	21.0					7.7	13.3	8.3
Progression Factor		0.85	0.89	1.00	1.00					0.28	0.31	0.00
Incremental Delay, d2		4.3	15.4	38.3	10.0					0.1	3.2	0.7
Delay (s)		22.1	35.4	59.9	31.0					2.3	7.4	0.7
Level of Service		C	D	E	C					A	A	A
Approach Delay (s)		28.3			37.6			0.0			6.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	25	62	21	66	1241	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1544	3185	3185	993
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	239	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	67	23	72	1349	201
RTOR Reduction (vph)	0	5	0	0	0	45
Lane Group Flow (vph)	27	62	23	72	1349	156
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.3	16.3	44.0	44.0	44.0	44.0
Effective Green, g (s)	16.3	16.3	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	355	495	150	2002	2002	624
v/s Ratio Prot				0.02	c0.42	
v/s Ratio Perm	0.02	c0.03	0.10			0.16
v/c Ratio	0.08	0.13	0.15	0.04	0.67	0.25
Uniform Delay, d1	21.0	21.2	5.3	4.9	8.4	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.18	0.00
Incremental Delay, d2	0.1	0.1	2.2	0.0	0.9	0.5
Delay (s)	21.1	21.3	7.5	5.0	2.4	0.5
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.6	2.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1562	189	64	499	0	0	1216	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3110		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3110		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1698	205	70	542	0	0	1322	252
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	117	1890	0	70	542	0	0	1322	249
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.61			0.17			c0.42	
v/s Ratio Perm				0.08			0.31					0.20
v/c Ratio				0.16	1.25		0.73	0.40			0.97	0.48
Uniform Delay, d1				10.1	18.0		16.6	13.8			19.5	14.4
Progression Factor				2.01	1.82		0.98	0.91			0.89	0.79
Incremental Delay, d2				0.0	113.7		34.8	0.8			9.2	1.2
Delay (s)				20.3	146.5		51.2	13.3			26.6	12.4
Level of Service				C	F		D	B			C	B
Approach Delay (s)		0.0			139.2			17.6			24.3	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	16	1776	64	89	484	0	0	346	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3142			1616	1254
Flt Permitted				0.95	1.00	1.00		0.81			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2554			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	17	1930	70	97	526	0	0	376	341
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	0	80
Lane Group Flow (vph)	0	0	0	17	1930	28	0	623	0	0	376	261
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1185			750	582
v/s Ratio Prot					c0.61						0.23	
v/s Ratio Perm				0.01		0.02		c0.24				0.21
v/c Ratio				0.03	1.50	0.05		0.53			0.50	0.45
Uniform Delay, d1				12.6	20.9	12.8		13.3			13.1	12.7
Progression Factor				1.90	1.73	5.16		0.88			0.26	0.22
Incremental Delay, d2				0.0	228.0	0.0		0.3			0.2	0.2
Delay (s)				24.0	264.2	65.8		12.1			3.7	3.0
Level of Service				C	F	E		B			A	A
Approach Delay (s)		0.0			255.2			12.1			3.3	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	156.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	485	1494	0	0	0	0	0	1184	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	527	1624	0	0	0	0	0	1287	201
RTOR Reduction (vph)	0	0	0	15	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	512	1624	0	0	0	0	0	1287	185
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.51						c0.28	
v/s Ratio Perm				0.35								0.15
v/c Ratio				0.82	1.18						0.65	0.35
Uniform Delay, d1				17.5	19.9						15.7	13.2
Progression Factor				1.00	1.00						0.88	0.96
Incremental Delay, d2				11.6	89.6						0.9	0.9
Delay (s)				29.1	109.5						14.7	13.6
Level of Service				C	F						B	B
Approach Delay (s)		0.0			89.8			0.0			14.6	
Approach LOS		A			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	634	1428	0	0	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	689	1552	0	0	48	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	689	1552	0	0	48	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.5	59.2			4.3	
Effective Green, g (s)	39.5	59.2			4.3	
Actuated g/C Ratio	0.56	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1743	5742			189	
v/s Ratio Prot	c0.22	c0.23				
v/s Ratio Perm					c0.02	
v/c Ratio	0.40	0.27			0.25	
Uniform Delay, d1	8.6	1.1			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.7	0.1			0.7	
Delay (s)	9.2	1.2			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.7	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	969	185	0	0	0	0	743	112	60	234	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4446		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4446		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	1053	201	0	0	0	0	808	122	65	254	0
RTOR Reduction (vph)	0	0	122	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	258	1053	79	0	0	0	0	904	0	65	254	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1587		158	780	
v/s Ratio Prot		0.18						c0.20		0.02	c0.15	
v/s Ratio Perm	c0.23		0.06									
v/c Ratio	0.59	0.46	0.15					0.57		0.41	0.33	
Uniform Delay, d1	16.8	15.8	13.7					18.2		32.2	11.8	
Progression Factor	1.21	1.17	2.38					1.09		1.00	1.00	
Incremental Delay, d2	5.8	0.7	0.6					1.3		1.7	1.1	
Delay (s)	26.2	19.1	33.2					21.1		33.9	12.9	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		22.2			0.0			21.1			17.2	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	840	152	0	0	0	0	523	80	162	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.94	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5471						3049		1500	3185	
Flt Permitted		0.99						1.00		0.33	1.00	
Satd. Flow (perm)		5471						3049		529	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	913	165	0	0	0	0	568	87	176	1276	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	1231	0	0	0	0	0	638	0	176	1276	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1350		234	1410	
v/s Ratio Prot								0.21			c0.40	
v/s Ratio Perm		0.22								0.33		
v/c Ratio		0.51						0.47		0.75	0.90	
Uniform Delay, d1		14.0						13.7		16.3	18.1	
Progression Factor		1.17						1.62		0.92	0.96	
Incremental Delay, d2		0.7						1.1		9.1	4.6	
Delay (s)		17.1						23.3		24.1	22.1	
Level of Service		B						C		C	C	
Approach Delay (s)		17.1			0.0			23.3			22.3	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	892	81	0	0	0	0	490	99	0	446	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5405						2939			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5405						2939			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	970	88	0	0	0	0	533	108	0	485	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1139	0	0	0	0	0	621	0	0	485	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2702						1037			570	
v/s Ratio Prot								0.21			c0.30	
v/s Ratio Perm		0.21										
v/c Ratio		0.42						0.60			0.85	
Uniform Delay, d1		11.1						18.6			20.9	
Progression Factor		1.84						1.17			0.98	
Incremental Delay, d2		0.4						2.0			14.0	
Delay (s)		20.8						23.8			34.6	
Level of Service		C						C			C	
Approach Delay (s)		20.8			0.0			23.8			34.6	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	181	0	0	0	0	0	0	134	1339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5396									4508	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5396									4508	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	197	0	0	0	0	0	0	146	1455	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	986	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.35	
v/c Ratio		0.36									0.96	
Uniform Delay, d1		10.6									21.8	
Progression Factor		1.73									0.91	
Incremental Delay, d2		0.3									11.9	
Delay (s)		18.6									31.8	
Level of Service		B									C	
Approach Delay (s)		18.6			0.0			0.0			31.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	410	1319	226	0	0	0	0	850	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5635						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5635						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	446	1434	246	0	0	0	0	924	222
RTOR Reduction (vph)	0	0	0	35	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	313	1723	0	0	0	0	0	924	204
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2415						1961	415
v/s Ratio Prot											0.20	
v/s Ratio Perm				c0.35	0.31							c0.21
v/c Ratio				0.82	0.71						0.47	0.49
Uniform Delay, d1				17.6	16.5						14.3	14.5
Progression Factor				0.93	0.91						1.00	1.00
Incremental Delay, d2				10.8	1.1						0.8	4.1
Delay (s)				27.2	16.1						15.1	18.6
Level of Service				C	B						B	B
Approach Delay (s)		0.0			17.9			0.0			15.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1384	120	399	851	0	0	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5535		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5535		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1504	130	434	925	0	0	0	229
RTOR Reduction (vph)	0	0	0	0	20	0	321	0	0	0	0	211
Lane Group Flow (vph)	0	0	0	0	1614	0	113	925	0	0	0	18
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.29		0.04	c0.20				
v/s Ratio Perm												c0.01
v/c Ratio					1.08		0.14	0.42				0.09
Uniform Delay, d1					25.6		19.9	11.9				29.9
Progression Factor					1.56		1.53	1.06				1.00
Incremental Delay, d2					45.5		0.3	0.5				0.2
Delay (s)					85.3		30.7	13.0				30.1
Level of Service					F		C	B				C
Approach Delay (s)		0.0			85.3			18.7			30.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	1389	97	64	450	0	0	1058	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5588		1537	3185			3185	960
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1004	5588		209	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	1510	105	70	489	0	0	1150	276
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	99	1600	0	70	489	0	0	1150	259
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		93	1419			1419	427
v/s Ratio Prot					c0.29			0.15			c0.36	
v/s Ratio Perm				0.10			0.33					0.27
v/c Ratio				0.24	0.69		0.75	0.34			0.81	0.61
Uniform Delay, d1				13.3	16.8		16.2	12.7			16.8	14.7
Progression Factor				0.26	0.36		1.00	0.85			0.48	0.33
Incremental Delay, d2				1.1	1.4		42.2	0.7			2.5	3.1
Delay (s)				4.6	7.4		58.5	11.5			10.6	8.0
Level of Service				A	A		E	B			B	A
Approach Delay (s)		0.0			7.3			17.4			10.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	1376	76	46	691	0	0	344	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3175			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2893			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	26	1496	83	50	751	0	0	374	114
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1594	0	0	801	0	0	374	97
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1260			704	429
v/s Ratio Prot											0.23	
v/s Ratio Perm					0.29			c0.28				0.10
v/c Ratio					0.67			0.64			0.53	0.22
Uniform Delay, d1					16.0			15.4			14.5	12.4
Progression Factor					0.69			0.46			0.42	0.23
Incremental Delay, d2					1.4			2.1			1.7	0.7
Delay (s)					12.5			9.3			7.9	3.6
Level of Service					B			A			A	A
Approach Delay (s)		0.0			12.5			9.3			6.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	119	889	0	0	0	0	0	1423	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	129	966	0	0	0	0	0	1547	370
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	0	1082	0	0	0	0	0	1547	339
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.34	
v/s Ratio Perm					0.19							0.24
v/c Ratio					0.44						0.78	0.55
Uniform Delay, d1					13.9						16.8	14.6
Progression Factor					1.00						1.08	1.03
Incremental Delay, d2					0.6						1.9	2.1
Delay (s)					14.4						20.0	17.3
Level of Service					B						C	B
Approach Delay (s)		0.0			14.4			0.0			19.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1395	262	0	0	0	0	0	0	142	1247	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1516	285	0	0	0	0	0	0	154	1355	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1516	271	0	0	0	0	0	0	0	1494	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.26										
v/s Ratio Perm			c0.27								0.27	
v/c Ratio		0.61	0.63								0.61	
Uniform Delay, d1		15.3	15.4								15.3	
Progression Factor		1.00	1.00								1.59	
Incremental Delay, d2		1.1	6.7								1.0	
Delay (s)		16.4	22.1								25.3	
Level of Service		B	C								C	
Approach Delay (s)		17.3			0.0			0.0			25.3	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	451	1092	0	0	0	0	0	1259	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6361				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6361				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	490	1187	0	0	0	0	0	1368	217	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	308	1339	0	0	0	0	0	1570	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2753				
v/s Ratio Prot								c0.25				
v/s Ratio Perm	c0.33	0.26										
v/c Ratio	0.77	0.60						0.57				
Uniform Delay, d1	16.9	15.2						14.9				
Progression Factor	0.24	0.20						1.92				
Incremental Delay, d2	10.8	0.9						0.7				
Delay (s)	14.9	4.0						29.4				
Level of Service	B	A						C				
Approach Delay (s)		6.1			0.0			29.4			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	805	201	0	0	0	0	372	100	160	952	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5595						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.48	1.00	
Satd. Flow (perm)		5595						3185	1425	806	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	875	218	0	0	0	0	404	109	174	1035	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	47	0	0	0
Lane Group Flow (vph)	0	1065	0	0	0	0	0	404	62	174	1035	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	368	2092	
v/s Ratio Prot		c0.19						0.13			c0.23	
v/s Ratio Perm									0.04	0.22		
v/c Ratio		0.42						0.28	0.10	0.47	0.49	
Uniform Delay, d1		12.7						11.8	10.8	13.2	13.3	
Progression Factor		0.51						0.45	0.23	0.79	0.80	
Incremental Delay, d2		0.4						0.4	0.3	2.7	0.5	
Delay (s)		6.9						5.7	2.7	13.1	11.1	
Level of Service		A						A	A	B	B	
Approach Delay (s)		6.9			0.0			5.1			11.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	884	67	0	0	0	0	655	68	0	362	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5500						3106			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5500						3106			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	961	73	0	0	0	0	712	74	0	393	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1105	0	0	0	0	0	783	0	0	393	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1964						1539			801	
v/s Ratio Prot								c0.25			0.24	
v/s Ratio Perm		0.20										
v/c Ratio		0.56						0.51			0.49	
Uniform Delay, d1		18.1						11.9			11.8	
Progression Factor		0.41						1.87			2.29	
Incremental Delay, d2		1.1						0.9			1.8	
Delay (s)		8.4						23.2			28.7	
Level of Service		A						C			C	
Approach Delay (s)		8.4			0.0			23.2			28.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	875	81	0	0	0	0	0	0	107	1298	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	951	88	0	0	0	0	0	0	116	1411	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1032	0	0	0	0	0	0	0	0	1512	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.33	
v/c Ratio		0.42									0.76	
Uniform Delay, d1		13.7									16.7	
Progression Factor		0.17									0.83	
Incremental Delay, d2		0.4									1.8	
Delay (s)		2.8									15.7	
Level of Service		A									B	
Approach Delay (s)		2.8			0.0			0.0			15.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	279	0	0	441	127	357	1450	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	303	0	0	479	138	388	1576	155	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	122	0	0	0
Lane Group Flow (vph)	108	303	0	0	479	6	388	1576	33	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Effective Green, g (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.09	0.62			0.49	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	275	1089			1735	62	342	984	295			
v/s Ratio Prot	c0.03	c0.01			0.01	0.00		c0.34				
v/s Ratio Perm		0.18			0.14		0.24		0.02			
v/c Ratio	0.39	0.28			0.28	0.10	1.13	1.60	0.11			
Uniform Delay, d1	43.0	8.8			15.1	45.9	39.2	39.2	31.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.1			0.1	0.7	90.3	275.5	0.8			
Delay (s)	43.9	9.0			15.2	46.6	129.5	314.8	32.4			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.1			22.2			260.2			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	181.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	286	190	95	438	0	0	0	0	176	991	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.97						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3059						5093	
Flt Permitted		1.00	1.00		0.79						0.99	
Satd. Flow (perm)		1676	971		2452						5093	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	311	207	103	476	0	0	0	0	191	1077	118
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	311	195	0	579	0	0	0	0	0	1369	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1146						2161	
v/s Ratio Prot		0.19										
v/s Ratio Perm			0.20		c0.24						0.27	
v/c Ratio		0.40	0.43		0.51						0.63	
Uniform Delay, d1		15.7	16.0		16.7						20.4	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.5	3.0		1.6						1.4	
Delay (s)		17.2	18.9		18.3						21.8	
Level of Service		B	B		B						C	
Approach Delay (s)		17.9			18.3			0.0			21.8	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	318	58	0	505	105	61	388	72	29	243	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2805			2975	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.88	
Satd. Flow (perm)		1616	949		3185	775		2477			2641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	346	63	0	549	114	66	422	78	32	264	29
RTOR Reduction (vph)	0	0	30	0	0	17	0	18	0	0	1	0
Lane Group Flow (vph)	0	346	33	0	549	97	0	548	0	0	324	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1061			1131	
v/s Ratio Prot		c0.21			0.17							
v/s Ratio Perm			0.03			0.13		c0.22			0.12	
v/c Ratio		0.44	0.07		0.35	0.26		0.52			0.29	
Uniform Delay, d1		11.8	9.6		11.2	10.6		14.7			13.0	
Progression Factor		1.00	1.00		0.14	0.06		1.40			1.00	
Incremental Delay, d2		1.8	0.3		0.5	1.2		1.6			0.6	
Delay (s)		13.6	9.9		2.1	1.8		22.1			13.7	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		13.0			2.0			22.1			13.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	329	101	55	516	0	0	0	0	135	882	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.46	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	767	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	358	110	60	561	0	0	0	0	147	959	92
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	358	93	60	561	0	0	0	0	147	959	56
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	328	718					513	1369	445
v/s Ratio Prot		0.21			c0.33						c0.30	
v/s Ratio Perm			0.10	0.08						0.12		0.05
v/c Ratio		0.50	0.23	0.18	0.78					0.29	0.70	0.12
Uniform Delay, d1		14.5	12.7	12.4	17.2					13.0	16.3	12.0
Progression Factor		0.86	0.95	1.64	1.64					0.99	0.81	1.22
Incremental Delay, d2		2.3	1.2	0.9	6.1					1.1	2.4	0.5
Delay (s)		14.8	13.2	21.2	34.2					13.9	15.6	15.1
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		14.4			32.9			0.0			15.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	514	0	0	452	195	85	1287	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5464				
Flt Permitted	0.28	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	475	1676			1676	976		5464				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	559	0	0	491	212	92	1399	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	12	0	0	0	0
Lane Group Flow (vph)	37	559	0	0	491	195	0	1562	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	27.3	27.3			27.3	27.3		33.2				
Effective Green, g (s)	27.3	27.3			27.3	27.3		33.2				
Actuated g/C Ratio	0.39	0.39			0.39	0.39		0.47				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	185	653			653	380		2591				
v/s Ratio Prot		c0.33			0.29							
v/s Ratio Perm	0.08					0.20		0.29				
v/c Ratio	0.20	0.86			0.75	0.51		0.60				
Uniform Delay, d1	14.1	19.6			18.4	16.3		13.5				
Progression Factor	0.69	0.73			1.34	1.45		0.79				
Incremental Delay, d2	2.3	12.9			0.7	0.4		0.7				
Delay (s)	12.1	27.1			25.5	24.0		11.4				
Level of Service	B	C			C	C		B				
Approach Delay (s)		26.2			25.0			11.4			0.0	
Approach LOS		C			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	305	56	24	543	50	0	426	63	0	943	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.93			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2912			2950	
Flt Permitted	0.95	1.00	1.00	0.56	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	929	939	1676	961		2912			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	332	61	26	590	54	0	463	68	0	1025	151
RTOR Reduction (vph)	0	0	4	0	0	34	0	17	0	0	17	0
Lane Group Flow (vph)	67	332	57	26	590	20	0	514	0	0	1159	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Effective Green, g (s)	13.0	36.0	36.0	20.0	20.0	20.0		28.0			28.0	
Actuated g/C Ratio	0.19	0.51	0.51	0.29	0.29	0.29		0.40			0.40	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	295	861	477	268	478	274		1164			1180	
v/s Ratio Prot	0.04	c0.20			c0.35			0.18			c0.39	
v/s Ratio Perm			0.06	0.03		0.02						
v/c Ratio	0.23	0.39	0.12	0.10	1.23	0.07		0.44			0.98	
Uniform Delay, d1	24.2	10.3	8.8	18.4	25.0	18.2		15.3			20.8	
Progression Factor	1.46	0.93	1.14	1.21	1.24	1.89		1.74			1.76	
Incremental Delay, d2	1.0	0.7	0.3	0.6	118.9	0.4		1.2			20.9	
Delay (s)	36.4	10.3	10.3	22.8	149.8	34.9		27.7			57.3	
Level of Service	D	B	B	C	F	C		C			E	
Approach Delay (s)		14.1			135.6			27.7			57.3	
Approach LOS		B			F			C			E	

Intersection Summary			
HCM 2000 Control Delay	63.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	295	31	12	500	25	8	700	56	0	473	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3029			1616	
Flt Permitted	0.26	1.00	1.00	0.49	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	434	1676	621	819	1676	964		2876			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	321	34	13	543	27	9	761	61	0	514	0
RTOR Reduction (vph)	0	0	19	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	21	321	15	13	543	11	0	823	0	0	514	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	180	696	269	340	696	400		1249			701	
v/s Ratio Prot		0.19			c0.32						c0.32	
v/s Ratio Perm	0.05		0.02	0.02		0.01		0.29				
v/c Ratio	0.12	0.46	0.05	0.04	0.78	0.03		0.66			0.73	
Uniform Delay, d1	12.6	14.8	11.5	12.1	17.7	12.1		15.7			16.4	
Progression Factor	0.90	0.90	1.73	1.63	1.32	2.99		0.35			0.79	
Incremental Delay, d2	1.2	2.1	0.4	0.2	7.0	0.1		2.1			6.1	
Delay (s)	12.5	15.3	20.2	20.0	30.4	36.2		7.6			19.0	
Level of Service	B	B	C	B	C	D		A			B	
Approach Delay (s)		15.6			30.5			7.6			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	294	79	71	434	0	0	0	0	50	1073	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.82	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1299	1676						4503	987
Flt Permitted		1.00	1.00	0.51	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	693	1676						4503	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	320	86	77	472	0	0	0	0	54	1166	148
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	320	60	77	472	0	0	0	0	0	1220	62
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	290	701						1878	411
v/s Ratio Prot		0.19			c0.28							
v/s Ratio Perm			0.06	0.11							0.27	0.06
v/c Ratio		0.46	0.15	0.27	0.67						0.65	0.15
Uniform Delay, d1		14.6	12.6	13.3	16.5						16.3	12.7
Progression Factor		0.39	0.11	1.00	1.00						0.19	0.06
Incremental Delay, d2		1.9	0.7	2.2	5.1						1.1	0.5
Delay (s)		7.7	2.1	15.5	21.6						4.2	1.3
Level of Service		A	A	B	C						A	A
Approach Delay (s)		6.5			20.7			0.0			3.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1705	170	356	1829	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1106	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1106	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1853	185	387	1988	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	76	117	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1853	109	270	1988	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					33.7	33.7	34.0	34.0				
Effective Green, g (s)					33.7	33.7	34.0	34.0				
Actuated g/C Ratio					0.37	0.37	0.38	0.38				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2159	424	417	1729				
v/s Ratio Prot					c0.32			c0.43				
v/s Ratio Perm						0.10	0.24					
v/c Ratio					0.86	0.26	0.65	1.15				
Uniform Delay, d1					25.9	19.5	23.1	28.0				
Progression Factor					1.00	1.00	0.59	0.78				
Incremental Delay, d2					4.7	1.5	0.7	68.1				
Delay (s)					30.7	21.0	14.4	90.0				
Level of Service					C	C	B	F				
Approach Delay (s)		0.0			29.8			77.7			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	55.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1144	73	64	480	0	0	758	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1517	3185			3185	1154
Flt Permitted				0.95	1.00		0.29	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		456	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1243	79	70	522	0	0	824	187
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	107	1312	0	70	522	0	0	824	186
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		260	1820			1820	659
v/s Ratio Prot					c0.29			0.16			c0.26	
v/s Ratio Perm				0.08			0.15					0.16
v/c Ratio				0.23	0.85		0.27	0.29			0.45	0.28
Uniform Delay, d1				16.4	21.3		7.6	7.7			8.7	7.7
Progression Factor				0.43	0.34		0.19	0.22			0.09	0.09
Incremental Delay, d2				0.9	4.6		2.2	0.4			0.3	0.4
Delay (s)				7.9	11.9		3.7	2.0			1.1	1.1
Level of Service				A	B		A	A			A	A
Approach Delay (s)		0.0			11.6			2.2			1.1	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	31	1126	47	96	728	0	0	358	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5690			3167			1616	1144
Flt Permitted					1.00			0.80			1.00	1.00
Satd. Flow (perm)					5690			2564			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	34	1224	51	104	791	0	0	389	191
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	81
Lane Group Flow (vph)	0	0	0	0	1301	0	0	895	0	0	389	110
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1788			1438			593	420
v/s Ratio Prot								c0.06			0.24	
v/s Ratio Perm					0.23			c0.28				0.10
v/c Ratio					0.73			0.62			0.66	0.26
Uniform Delay, d1					21.3			11.2			18.5	15.5
Progression Factor					0.78			1.15			1.13	1.98
Incremental Delay, d2					2.4			1.5			4.2	1.1
Delay (s)					19.0			14.4			25.1	31.8
Level of Service					B			B			C	C
Approach Delay (s)		0.0			19.0			14.4			27.3	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	817	0	0	0	0	0	823	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5636						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5636						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	888	0	0	0	0	0	895	364
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	960	0	0	0	0	0	895	337
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.17							c0.26
v/c Ratio					0.44						0.41	0.53
Uniform Delay, d1					15.7						11.8	12.8
Progression Factor					1.00						0.30	0.26
Incremental Delay, d2					0.6						0.5	2.6
Delay (s)					16.3						4.0	5.9
Level of Service					B						A	A
Approach Delay (s)		0.0			16.3			0.0			4.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	567	1539	0	0	0	0	0	2356	181	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	616	1673	0	0	0	0	0	2561	197	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	426	1827	0	0	0	0	0	2561	184	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1681						1797	578			
v/s Ratio Prot								c0.80				
v/s Ratio Perm	c0.43	0.35							0.18			
v/c Ratio	1.34	1.09						1.43	0.32			
Uniform Delay, d1	30.7	30.7						19.6	10.4			
Progression Factor	1.00	1.00						1.51	1.55			
Incremental Delay, d2	173.9	49.5						191.6	0.1			
Delay (s)	204.6	80.2						221.2	16.2			
Level of Service	F	F						F	B			
Approach Delay (s)		104.4			0.0			206.6			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	160.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	108.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1718	214	0	0	0	0	0	0	208	733	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5671								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5671								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1867	233	0	0	0	0	0	0	226	797	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	2076	0	0	0	0	0	0	0	214	797	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2205								785	2845	
v/s Ratio Prot		c0.37									c0.14	
v/s Ratio Perm										0.13		
v/c Ratio		0.94								0.27	0.28	
Uniform Delay, d1		26.5								13.3	13.4	
Progression Factor		1.53								0.56	0.59	
Incremental Delay, d2		4.7								0.7	0.2	
Delay (s)		45.2								8.1	8.2	
Level of Service		D								A	A	
Approach Delay (s)		45.2			0.0			0.0			8.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1209	65	0	0	0	0	465	104	62	232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5495						2940			3090	
Flt Permitted		0.99						1.00			0.78	
Satd. Flow (perm)		5495						2940			2432	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1314	71	0	0	0	0	505	113	67	252	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	1569	0	0	0	0	0	609	0	0	319	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2669						1260			1042	
v/s Ratio Prot								c0.21				
v/s Ratio Perm		0.29									0.13	
v/c Ratio		0.59						0.48			0.31	
Uniform Delay, d1		13.0						14.4			13.2	
Progression Factor		1.00						1.00			1.48	
Incremental Delay, d2		1.0						1.3			0.7	
Delay (s)		13.9						15.7			20.2	
Level of Service		B						B			C	
Approach Delay (s)		13.9			0.0			15.7			20.2	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1489	266	0	0	0	0	0	0	202	1033	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1618	289	0	0	0	0	0	0	220	1123	0
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1618	273	0	0	0	0	0	0	198	1123	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.35									c0.25	
v/s Ratio Perm			0.21							0.13		
v/c Ratio		0.81	0.49							0.31	0.59	
Uniform Delay, d1		17.2	14.1							13.7	15.8	
Progression Factor		1.28	1.28							0.30	0.40	
Incremental Delay, d2		3.3	2.8							1.1	1.1	
Delay (s)		25.2	20.9							5.2	7.5	
Level of Service		C	C							A	A	
Approach Delay (s)		24.6			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1381	0	0	0	0	0	1319	101	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4471						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4471						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1501	0	0	0	0	0	1434	110	0	0	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	1799	0	0	0	0	0	1434	95	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		25.1						35.3	35.3			
Effective Green, g (s)		25.1						35.3	35.3			
Actuated g/C Ratio		0.36						0.50	0.50			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1603						2308	678			
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.40							0.07			
v/c Ratio		1.12						0.62	0.14			
Uniform Delay, d1		22.4						12.5	9.3			
Progression Factor		0.37						1.78	2.16			
Incremental Delay, d2		61.0						0.4	0.1			
Delay (s)		69.4						22.7	20.1			
Level of Service		E						C	C			
Approach Delay (s)		69.4			0.0			22.5			0.0	
Approach LOS		E			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	1248	58	0	0	0	0	544	80	179	494	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4460						3053		1593	3185	
Flt Permitted		1.00						1.00		0.33	1.00	
Satd. Flow (perm)		4460						3053		546	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	1357	63	0	0	0	0	591	87	195	537	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1476	0	0	0	0	0	676	0	195	537	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1911						1482		265	1547	
v/s Ratio Prot								0.22			0.17	
v/s Ratio Perm		0.33								c0.36		
v/c Ratio		0.77						0.46		0.74	0.35	
Uniform Delay, d1		17.1						11.9		14.4	11.1	
Progression Factor		1.58						1.75		1.83	1.97	
Incremental Delay, d2		0.3						0.9		15.4	0.6	
Delay (s)		27.3						21.8		41.8	22.6	
Level of Service		C						C		D	C	
Approach Delay (s)		27.3			0.0			21.8			27.7	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	1400	74	0	0	0	0	765	103	0	382	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4425						3055			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4425						3055			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1522	80	0	0	0	0	832	112	0	415	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	72	1594	0	0	0	0	0	943	0	0	415	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1845						1331			704	
v/s Ratio Prot		c0.36						c0.31			0.26	
v/s Ratio Perm	0.06											
v/c Ratio	0.14	0.86						0.71			0.59	
Uniform Delay, d1	12.6	18.6						16.1			15.0	
Progression Factor	0.42	0.31						0.38			0.47	
Incremental Delay, d2	0.4	3.8						1.8			2.7	
Delay (s)	5.7	9.6						7.9			9.8	
Level of Service	A	A						A			A	
Approach Delay (s)		9.5			0.0			7.9			9.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	1076	82	0	0	0	0	870	103	124	766	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1558	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.23	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	377	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1170	89	0	0	0	0	946	112	135	833	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	129	1247	0	0	0	0	0	946	95	135	833	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	189	1597	
v/s Ratio Prot		c0.28						0.30			0.26	
v/s Ratio Perm	0.09								0.08	c0.36		
v/c Ratio	0.25	0.79						0.59	0.15	0.71	0.52	
Uniform Delay, d1	16.0	20.2						12.4	9.4	13.6	11.8	
Progression Factor	0.90	1.03						0.27	0.06	1.00	1.00	
Incremental Delay, d2	0.6	2.0						0.9	0.3	20.5	1.2	
Delay (s)	15.1	22.8						4.2	0.8	34.1	13.0	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		22.0			0.0			3.9			15.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1284	117	72	1131	199	259	1892	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1348	1575	4577	1178	1449	3185	1345			
Flt Permitted	0.22	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	361	4577	1348	454	4577	1178	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1396	127	78	1229	216	282	2057	207	0	0	0
RTOR Reduction (vph)	0	0	49	0	0	111	0	0	36	0	0	0
Lane Group Flow (vph)	273	1396	78	78	1229	105	282	2057	171	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	25.6	25.6	55.1	14.6	14.6	14.6	52.4	52.4	52.4			
Effective Green, g (s)	25.6	25.6	55.1	14.6	14.6	14.6	52.4	52.4	52.4			
Actuated g/C Ratio	0.28	0.28	0.61	0.16	0.16	0.16	0.58	0.58	0.58			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1301	825	73	742	191	843	1854	783			
v/s Ratio Prot	c0.11	0.31	0.03		c0.27		0.11	c0.65				
v/s Ratio Perm	0.28		0.03	0.17		0.09	0.09		0.13			
v/c Ratio	1.38	1.07	0.09	1.07	1.66	0.55	0.33	1.11	0.22			
Uniform Delay, d1	30.4	32.2	7.2	37.7	37.7	34.7	9.8	18.8	9.0			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.73	1.52	2.05			
Incremental Delay, d2	198.8	47.1	0.0	125.4	301.4	10.8	0.0	50.1	0.1			
Delay (s)	229.2	79.3	7.2	163.1	339.1	45.5	16.9	78.7	18.5			
Level of Service	F	E	A	F	F	D	B	E	B			
Approach Delay (s)		97.0			288.4			66.9			0.0	
Approach LOS		F			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	133.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1054	114	48	1092	0	0	0	0	89	539	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.13	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	224	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1146	124	52	1187	0	0	0	0	97	586	137
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	1146	53	52	1187	0	0	0	0	0	683	119
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	96	1365						2429	604
v/s Ratio Prot		0.36			c0.37							
v/s Ratio Perm			0.04	0.23							0.12	0.08
v/c Ratio		0.84	0.09	0.54	0.87						0.28	0.20
Uniform Delay, d1		17.9	11.9	14.9	18.2						13.2	12.7
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		6.3	0.3	20.2	7.8						0.3	0.7
Delay (s)		24.2	12.2	35.1	26.0						13.5	13.4
Level of Service		C	B	D	C						B	B
Approach Delay (s)		23.0			26.4			0.0			13.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1134	66	20	955	84	90	383	44	34	166	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3064			3024			2813	
Flt Permitted	0.15	1.00		0.10	1.00			0.81			0.85	
Satd. Flow (perm)	256	3129		171	3064			2473			2400	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1233	72	22	1038	91	98	416	48	37	180	109
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	14	0
Lane Group Flow (vph)	179	1301	0	22	1123	0	0	555	0	0	312	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	128	1570		85	1538			994			964	
v/s Ratio Prot		0.42			0.37							
v/s Ratio Perm	c0.70			0.13				c0.22			0.13	
v/c Ratio	1.40	0.83		0.26	0.73			0.56			0.32	
Uniform Delay, d1	24.9	21.2		14.3	19.6			23.1			20.6	
Progression Factor	1.00	1.00		0.53	0.49			1.00			1.00	
Incremental Delay, d2	219.6	5.2		6.1	2.6			2.3			0.9	
Delay (s)	244.5	26.4		13.7	12.1			25.3			21.4	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		52.7			12.1			25.3			21.4	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	848	110	65	846	0	0	0	0	226	804	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.16	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		265	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	922	120	71	920	0	0	0	0	246	874	179
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1032	0	71	920	0	0	0	0	246	874	140
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		119	1433					716	2059	641
v/s Ratio Prot		c0.33			0.29						c0.19	
v/s Ratio Perm				0.27						0.15		0.10
v/c Ratio		0.73		0.60	0.64					0.34	0.42	0.22
Uniform Delay, d1		22.6		20.7	21.3					17.9	18.7	16.8
Progression Factor		0.37		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.0		20.1	2.2					1.3	0.6	0.8
Delay (s)		10.2		40.8	23.5					19.2	19.3	17.6
Level of Service		B		D	C					B	B	B
Approach Delay (s)		10.2			24.7			0.0			19.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	1021	0	0	777	115	113	1509	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.20	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	339	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1110	0	0	845	125	123	1640	92	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	25	0	0	0
Lane Group Flow (vph)	177	1110	0	0	968	0	0	1763	67	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	155	1460			1432			1824	570			
v/s Ratio Prot		0.35			0.31							
v/s Ratio Perm	c0.52							0.39	0.05			
v/c Ratio	1.14	0.76			0.68			0.97	0.12			
Uniform Delay, d1	18.9	15.8			14.9			20.5	13.2			
Progression Factor	1.00	1.00			0.65			0.67	1.01			
Incremental Delay, d2	115.5	3.8			2.2			9.8	0.2			
Delay (s)	134.5	19.5			11.8			23.5	13.6			
Level of Service	F	B			B			C	B			
Approach Delay (s)		35.3			11.8			23.1			0.0	
Approach LOS		D			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	885	58	68	742	95	50	437	37	53	539	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.22	1.00		0.18	1.00		0.36	1.00		0.40	1.00	1.00
Satd. Flow (perm)	373	3156		299	3131		596	3148		669	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	962	63	74	807	103	54	475	40	58	586	97
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	55
Lane Group Flow (vph)	89	1018	0	74	896	0	54	506	0	58	586	42
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	178	1510		143	1498		255	1349		286	1365	610
v/s Ratio Prot		c0.32			0.29			0.16			c0.18	
v/s Ratio Perm	0.24			0.25			0.09			0.09		0.03
v/c Ratio	0.50	0.67		0.52	0.60		0.21	0.37		0.20	0.43	0.07
Uniform Delay, d1	12.5	14.1		12.6	13.3		12.6	13.6		12.5	14.0	11.8
Progression Factor	1.74	1.74		1.10	1.14		1.47	1.51		0.53	0.63	0.25
Incremental Delay, d2	6.7	1.7		10.1	1.4		1.9	0.8		1.5	1.0	0.2
Delay (s)	28.4	26.1		24.0	16.6		20.4	21.3		8.1	9.8	3.2
Level of Service	C	C		C	B		C	C		A	A	A
Approach Delay (s)		26.3			17.1			21.2			8.8	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	908	49	72	762	61	70	791	81	0	439	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1563	3138		1563	3127			3163	1330		1616	
Flt Permitted	0.22	1.00		0.16	1.00			0.80	1.00		1.00	
Satd. Flow (perm)	364	3138		265	3127			2531	1330		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	987	53	78	828	66	76	860	88	0	477	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	18	0	0	0
Lane Group Flow (vph)	55	1034	0	78	885	0	0	936	70	0	477	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	156	1344		113	1340			1084	570		692	
v/s Ratio Prot		c0.33			0.28						0.30	
v/s Ratio Perm	0.15			0.29				c0.37	0.05			
v/c Ratio	0.35	0.77		0.69	0.66			0.86	0.12		0.69	
Uniform Delay, d1	13.5	17.1		16.2	15.9			18.1	12.1		16.2	
Progression Factor	1.51	1.53		1.41	1.48			0.48	0.48		1.56	
Incremental Delay, d2	4.9	3.4		27.6	2.4			7.3	0.3		4.3	
Delay (s)	25.2	29.5		50.4	26.0			16.0	6.2		29.6	
Level of Service	C	C		D	C			B	A		C	
Approach Delay (s)		29.3			28.0			15.2			29.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	738	85	29	465	47	73	869	90	103	637	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3136		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.32	1.00		0.15	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	1593	3136		534	3141		248	3185	1425	293	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	802	92	32	505	51	79	945	98	112	692	217
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	55	0	0	133
Lane Group Flow (vph)	141	882	0	32	545	0	79	945	43	112	692	84
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1464		180	1063		95	1228	549	113	646	549
v/s Ratio Prot	c0.09	c0.28			0.17			0.30			c0.41	
v/s Ratio Perm				0.06			0.32		0.03	0.38		0.06
v/c Ratio	1.13	0.60		0.18	0.51		0.83	0.77	0.08	0.99	1.07	0.15
Uniform Delay, d1	32.2	13.8		16.3	18.5		19.4	18.8	13.6	21.4	21.5	14.0
Progression Factor	0.54	1.05		1.00	1.00		0.64	0.64	0.61	1.36	1.36	4.32
Incremental Delay, d2	104.9	1.3		2.1	1.8		48.3	4.0	0.2	77.2	54.0	0.5
Delay (s)	122.2	15.7		18.4	20.3		60.8	15.9	8.6	106.2	83.1	61.1
Level of Service	F	B		B	C		E	B	A	F	F	E
Approach Delay (s)		30.2			20.2			18.5			81.0	
Approach LOS		C			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	27	27	58	95	77	42	2223	11	11	186	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	191	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	29	29	63	103	84	46	2416	12	12	202	23
RTOR Reduction (vph)	0	0	21	0	0	69	0	0	6	0	0	14
Lane Group Flow (vph)	35	29	8	63	103	15	46	2416	6	12	202	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	8.5	18.6	25.6	6.3	16.4	16.4	7.0	47.1	47.1	35.1	35.1	35.1
Effective Green, g (s)	8.5	18.6	25.6	6.3	16.4	16.4	7.0	47.1	47.1	35.1	35.1	35.1
Actuated g/C Ratio	0.09	0.21	0.28	0.07	0.18	0.18	0.08	0.52	0.52	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	346	405	111	580	259	123	1666	745	74	653	555
v/s Ratio Prot	c0.01	0.02	0.00	c0.04	c0.03		0.03	c0.76			0.12	
v/s Ratio Perm			0.00			0.01			0.00	0.06		0.01
v/c Ratio	0.12	0.08	0.02	0.57	0.18	0.06	0.37	1.45	0.01	0.16	0.31	0.02
Uniform Delay, d1	37.3	28.8	23.2	40.5	31.1	30.4	39.4	21.4	10.3	17.9	19.0	16.9
Progression Factor	1.00	1.00	1.00	1.30	1.12	1.00	1.00	1.00	1.00	1.13	1.12	1.00
Incremental Delay, d2	0.2	0.1	0.0	6.0	0.1	0.1	1.9	206.0	0.0	4.4	1.2	0.1
Delay (s)	37.5	28.9	23.2	58.8	34.9	30.5	41.3	227.5	10.3	24.7	22.4	16.9
Level of Service	D	C	C	E	C	C	D	F	B	C	C	B
Approach Delay (s)		30.4			39.4			222.9			22.0	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	186.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	11	56	314	0	0	0	0	0	506	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1664						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1664						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	12	61	341	0	0	0	0	0	550	103
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	62
Lane Group Flow (vph)	0	0	6	0	402	0	0	0	0	0	550	41
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		813						1835	571
v/s Ratio Prot											c0.12	
v/s Ratio Perm			0.00		0.24							0.03
v/c Ratio			0.01		0.49						0.30	0.07
Uniform Delay, d1			11.8		15.5						18.3	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		2.1						0.4	0.2
Delay (s)			11.8		17.6						18.8	16.9
Level of Service			B		B						B	B
Approach Delay (s)		11.8			17.6			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	303	116	22	249	0	0	179	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1664	1399		3172			3090	
Flt Permitted					0.99	1.00		0.92			1.00	
Satd. Flow (perm)					1664	1399		2946			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	58	329	126	24	271	0	0	195	41
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	0	387	86	0	295	0	0	220	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					18.2	18.2		42.6			42.6	
Effective Green, g (s)					18.2	18.2		42.6			42.6	
Actuated g/C Ratio					0.26	0.26		0.61			0.61	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					432	363		1792			1880	
v/s Ratio Prot											0.07	
v/s Ratio Perm					0.23	0.06		c0.10				
v/c Ratio					0.90	0.24		0.16			0.12	
Uniform Delay, d1					25.0	20.4		6.0			5.8	
Progression Factor					1.06	1.07		1.00			1.00	
Incremental Delay, d2					23.3	1.5		0.2			0.1	
Delay (s)					49.8	23.4		6.2			5.9	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			43.3			6.2			5.9	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	92	263	0	0	0	0	0	828	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	100	286	0	0	0	0	0	900	70
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	100	286	0	0	0	0	0	900	35
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.17						c0.20	
v/s Ratio Perm				0.07								0.03
v/c Ratio				0.20	0.47						0.39	0.06
Uniform Delay, d1				15.4	17.3						10.6	8.8
Progression Factor				0.40	0.46						1.00	1.00
Incremental Delay, d2				0.7	2.2						0.5	0.2
Delay (s)				7.0	10.1						11.1	9.0
Level of Service				A	B						B	A
Approach Delay (s)		0.0			9.3			0.0			11.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	266	73	89	1644	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	289	79	97	1787	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	289	63	0	1870	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.17							
v/s Ratio Perm						0.04		0.41				
v/c Ratio					0.46	0.12		0.83				
Uniform Delay, d1					16.6	14.3		15.3				
Progression Factor					1.68	1.93		1.00				
Incremental Delay, d2					2.2	0.4		3.8				
Delay (s)					30.0	28.1		19.2				
Level of Service					C	C		B				
Approach Delay (s)		0.0			29.6			19.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	29	251	42	31	466	0	0	707	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1656	1374	1547	3185			3185	1263
Flt Permitted					0.99	1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)					1656	1374	521	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	32	273	46	34	507	0	0	768	50
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	305	19	34	507	0	0	768	31
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					496	412	320	1956			1956	775
v/s Ratio Prot								0.16			c0.24	
v/s Ratio Perm					0.18	0.01	0.07					0.02
v/c Ratio					0.61	0.05	0.11	0.26			0.39	0.04
Uniform Delay, d1					21.0	17.4	5.6	6.2			6.9	5.3
Progression Factor					0.88	1.15	1.00	1.00			0.80	0.21
Incremental Delay, d2					5.1	0.2	0.7	0.3			0.6	0.1
Delay (s)					23.7	20.2	6.2	6.5			6.0	1.2
Level of Service					C	C	A	A			A	A
Approach Delay (s)		0.0			23.2			6.5			5.7	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	51	237	38	80	932	0	0	449	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.69
Flpb, ped/bikes					0.93	1.00	0.90	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1549	984	1427	3185			1616	955
Flt Permitted					0.99	1.00	0.36	1.00			1.00	1.00
Satd. Flow (perm)					1549	984	545	3185			1616	955
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	55	258	41	87	1013	0	0	488	210
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	313	15	87	1013	0	0	488	182
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					575	365	268	1569			796	470
v/s Ratio Prot								c0.32			0.30	
v/s Ratio Perm					0.20	0.02	0.16					0.19
v/c Ratio					0.54	0.04	0.32	0.65			0.61	0.39
Uniform Delay, d1					17.3	14.0	10.7	13.2			12.9	11.1
Progression Factor					1.43	1.96	1.00	1.00			1.46	1.71
Incremental Delay, d2					3.5	0.2	3.2	2.1			2.8	1.9
Delay (s)					28.3	27.7	13.9	15.3			21.7	21.0
Level of Service					C	C	B	B			C	C
Approach Delay (s)		0.0			28.2			15.2			21.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	198	53	68	1002	0	0	644	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3155	1425	1593	3185			3108	
Flt Permitted					0.99	1.00	0.29	1.00			1.00	
Satd. Flow (perm)					3155	1425	484	3185			3108	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	215	58	74	1089	0	0	700	136
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	267	18	74	1089	0	0	813	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	290	1911			1864	
v/s Ratio Prot								c0.34			0.26	
v/s Ratio Perm					0.08	0.01	0.15					
v/c Ratio					0.27	0.04	0.26	0.57			0.44	
Uniform Delay, d1					18.0	16.7	6.6	8.5			7.6	
Progression Factor					1.00	1.00	1.00	1.00			1.75	
Incremental Delay, d2					0.7	0.2	2.1	1.2			0.2	
Delay (s)					18.6	16.8	8.7	9.7			13.5	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.3			9.7			13.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	847	225	218	800	126	236	622	244	143	357	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.94	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1522	3185	1097	1593	4369		1552	3185	1229	1497	3045	
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.40	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	436	3185	1097	218	4369		648	3185	1229	622	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	921	245	237	870	137	257	676	265	155	388	62
RTOR Reduction (vph)	0	0	151	0	24	0	0	0	15	0	14	0
Lane Group Flow (vph)	239	921	94	237	983	0	257	676	250	155	436	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	1079	371	205	1966		327	1362	621	210	1031	
v/s Ratio Prot		0.29		c0.09	0.23		c0.04	0.21	0.03		0.14	
v/s Ratio Perm	c0.55		0.09	0.43			c0.29		0.17	0.25		
v/c Ratio	1.63	0.85	0.25	1.16	0.50		0.79	0.50	0.40	0.74	0.42	
Uniform Delay, d1	29.8	27.7	21.5	19.9	17.6		21.8	18.7	13.8	26.2	23.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	310.5	8.6	1.6	111.3	0.9		11.7	1.3	0.4	20.6	1.3	
Delay (s)	340.2	36.3	23.1	131.1	18.5		33.6	20.0	14.2	46.8	24.2	
Level of Service	F	D	C	F	B		C	C	B	D	C	
Approach Delay (s)		85.7			39.9			21.6			30.0	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	791	152	260	967	537	36	638	176	65	918	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1590	3185	1165	3090	3185	1230	1593	3185	1425	1550	3185	1132
Flt Permitted	0.13	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	213	3185	1165	3090	3185	1230	274	3185	1425	279	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	860	165	283	1051	584	39	693	191	71	998	162
RTOR Reduction (vph)	0	0	113	0	0	40	0	0	132	0	0	55
Lane Group Flow (vph)	295	860	52	283	1051	544	39	693	59	71	998	107
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	43.5	31.5	31.5	13.5	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	43.5	31.5	31.5	13.5	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.14	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	1003	366	417	1369	528	67	780	142	68	780	413
v/s Ratio Prot	c0.14	0.27		0.09	0.33			0.22	0.04		c0.31	0.03
v/s Ratio Perm	c0.36		0.04			c0.44	0.14			0.25		0.06
v/c Ratio	1.15	0.86	0.14	0.68	0.77	1.03	0.58	0.89	0.41	1.04	1.28	0.26
Uniform Delay, d1	26.0	32.1	24.6	41.2	24.3	28.5	33.2	36.4	42.2	37.8	37.8	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	102.0	9.4	0.8	4.4	2.6	46.9	32.0	14.3	2.0	121.9	135.6	0.3
Delay (s)	128.0	41.6	25.4	45.5	26.9	75.4	65.2	50.7	44.2	159.6	173.3	22.6
Level of Service	F	D	C	D	C	E	E	D	D	F	F	C
Approach Delay (s)		58.8			44.4			50.0			152.7	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	913	79	88	1026	717	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2378
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2378
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	992	86	96	1115	779	1110
RTOR Reduction (vph)	0	54	0	0	0	9
Lane Group Flow (vph)	992	32	96	1115	779	1101
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	33.6	33.6	16.0	53.1	27.1	43.1
Effective Green, g (s)	33.6	33.6	16.0	53.1	27.1	43.1
Actuated g/C Ratio	0.37	0.37	0.18	0.59	0.30	0.48
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1189	391	283	1879	930	1138
v/s Ratio Prot	c0.31		0.06	0.35	0.25	c0.17
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.83	0.08	0.34	0.59	0.84	0.97
Uniform Delay, d1	25.7	18.2	32.4	11.6	29.4	22.8
Progression Factor	1.00	1.00	0.66	1.90	1.00	1.00
Incremental Delay, d2	7.0	0.4	0.5	1.0	6.7	19.1
Delay (s)	32.6	18.6	21.8	23.1	36.1	41.9
Level of Service	C	B	C	C	D	D
Approach Delay (s)	31.5			23.0	39.5	
Approach LOS	C			C	D	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1160	42	57	709	70	131	762	49	97	962	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	3185	1143	1559	3185	1196	1593	3140		1586	3185	976
Flt Permitted	0.15	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.25	1.00	1.00
Satd. Flow (perm)	250	3185	1143	277	3185	1196	1593	3140		420	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1261	46	62	771	76	142	828	53	105	1046	179
RTOR Reduction (vph)	0	0	28	0	0	56	0	5	0	0	0	115
Lane Group Flow (vph)	299	1261	18	62	771	20	142	876	0	105	1046	64
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.8	35.9		33.7	28.9	28.9
Effective Green, g (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.8	35.9		33.7	28.9	28.9
Actuated g/C Ratio	0.40	0.40	0.40	0.26	0.26	0.26	0.13	0.40		0.37	0.32	0.32
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	232	1263	453	72	838	314	208	1252		219	1022	313
v/s Ratio Prot	c0.13	0.40			0.24		c0.09	0.28		0.03	c0.33	
v/s Ratio Perm	c0.38		0.02	0.22		0.02				0.15		0.07
v/c Ratio	1.29	1.00	0.04	0.86	0.92	0.06	0.68	0.70		0.48	1.02	0.21
Uniform Delay, d1	22.1	27.1	16.6	31.6	32.2	24.8	37.3	22.6		19.1	30.6	22.2
Progression Factor	1.06	1.03	1.00	0.88	0.91	11.68	0.61	1.56		1.00	1.00	1.00
Incremental Delay, d2	143.5	16.3	0.1	58.1	13.1	0.3	5.8	1.1		1.7	34.3	0.3
Delay (s)	167.0	44.3	16.7	85.9	42.6	290.4	28.5	36.4		20.8	64.8	22.5
Level of Service	F	D	B	F	D	F	C	D		C	E	C
Approach Delay (s)		66.3			66.2			35.3			55.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	1204	85	49	791	87	66	621	138	89	470	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00	1.00	0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1584	3185	834	1495	3185	1050	1544	4287		1512	2927	
Flt Permitted	0.18	1.00	1.00	0.20	1.00	1.00	0.21	1.00		0.23	1.00	
Satd. Flow (perm)	307	3185	834	312	3185	1050	347	4287		374	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1309	92	53	860	95	72	675	150	97	511	217
RTOR Reduction (vph)	0	0	24	0	0	57	0	18	0	0	52	0
Lane Group Flow (vph)	292	1309	68	53	860	38	72	807	0	97	676	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	36.3	36.3	36.3	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	36.3	36.3	36.3	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.40	0.40	0.40	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	380	1886	493	125	1284	423	111	1381		120	943	
v/s Ratio Prot	c0.12	0.41			0.27			0.19			0.23	
v/s Ratio Perm	c0.34		0.08	0.17		0.04	0.21			c0.26		
v/c Ratio	0.77	0.69	0.14	0.42	0.67	0.09	0.65	0.58		0.81	0.72	
Uniform Delay, d1	12.7	12.7	8.1	19.3	22.0	16.6	26.1	25.5		28.0	26.9	
Progression Factor	1.10	1.58	1.68	0.64	0.64	0.70	1.08	1.12		1.00	1.00	
Incremental Delay, d2	5.6	1.3	0.4	8.5	2.3	0.4	25.0	1.8		42.4	4.7	
Delay (s)	19.6	21.4	14.0	20.8	16.4	12.0	53.4	30.3		70.4	31.5	
Level of Service	B	C	B	C	B	B	D	C		E	C	
Approach Delay (s)		20.7			16.2			32.1			36.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1219	57	40	736	6	0	0	0	96	627	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.97	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1580	3185	1027	1542	3175						4468	1266
Flt Permitted	0.22	1.00	1.00	0.15	1.00						0.99	1.00
Satd. Flow (perm)	366	3185	1027	243	3175						4468	1266
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1325	62	43	800	7	0	0	0	104	682	213
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	122	1325	47	43	806	0	0	0	0	0	786	195
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Effective Green, g (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Actuated g/C Ratio	0.53	0.53	0.53	0.40	0.40						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	309	1691	545	98	1280						1563	562
v/s Ratio Prot	0.04	c0.42			0.25							0.03
v/s Ratio Perm	0.17		0.05	0.18							0.18	0.12
v/c Ratio	0.39	0.78	0.09	0.44	0.63						0.50	0.35
Uniform Delay, d1	12.2	16.9	10.4	19.5	21.5						23.1	16.4
Progression Factor	1.33	1.12	1.73	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	2.7	0.2	13.6	2.4						1.2	0.4
Delay (s)	16.8	21.6	18.2	33.1	23.8						24.2	16.8
Level of Service	B	C	B	C	C						C	B
Approach Delay (s)		21.1			24.3			0.0			22.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	16	36	40	72	160	22	457	19	15	1157	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.93	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2632		1593	2505		1584	3146		1482	3185	1333
Flt Permitted	0.95	1.00		0.95	1.00		0.15	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1593	2632		1593	2505		247	3146		695	3185	1333
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	17	39	43	78	174	24	497	21	16	1258	127
RTOR Reduction (vph)	0	30	0	0	68	0	0	2	0	0	0	26
Lane Group Flow (vph)	138	26	0	43	184	0	24	516	0	16	1258	101
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Effective Green, g (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Actuated g/C Ratio	0.06	0.23		0.03	0.21		0.57	0.57		0.57	0.57	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	88	605		53	520		141	1803		398	1826	838
v/s Ratio Prot	c0.09	0.01		0.03	c0.07			0.16			c0.39	0.01
v/s Ratio Perm							0.10			0.02		0.07
v/c Ratio	1.57	0.04		0.81	0.35		0.17	0.29		0.04	0.69	0.12
Uniform Delay, d1	42.5	26.9		43.2	30.5		9.1	9.8		8.4	13.5	6.7
Progression Factor	1.00	1.00		1.00	1.00		1.18	1.13		1.00	1.00	1.00
Incremental Delay, d2	303.3	0.0		59.7	0.4		2.6	0.4		0.2	2.2	0.1
Delay (s)	345.8	27.0		102.9	30.9		13.3	11.5		8.6	15.7	6.8
Level of Service	F	C		F	C		B	B		A	B	A
Approach Delay (s)		253.8			41.4			11.5			14.8	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	190	0	372	17	100	873	49	36	1116	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.97	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3154		1581	3125		1542	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.15	1.00	1.00
Satd. Flow (perm)		1676	1277		3154		187	3125		241	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	207	0	404	18	109	949	53	39	1213	43
RTOR Reduction (vph)	0	0	15	0	4	0	0	4	0	0	0	26
Lane Group Flow (vph)	0	489	192	0	418	0	109	998	0	39	1213	17
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1236		95	1259	514
v/s Ratio Prot		c0.29			0.13			0.32			0.38	
v/s Ratio Perm			0.15				c0.58			0.16		0.01
v/c Ratio		0.60	0.31		0.27		1.49	0.81		0.41	0.96	0.03
Uniform Delay, d1		16.6	13.8		13.6		27.2	24.2		19.6	26.6	16.7
Progression Factor		1.00	1.00		0.94		0.89	0.87		0.62	0.71	0.32
Incremental Delay, d2		3.2	1.3		0.3		276.8	5.3		5.7	10.2	0.1
Delay (s)		19.8	15.1		13.0		301.0	26.4		17.9	29.1	5.3
Level of Service		B	B		B		F	C		B	C	A
Approach Delay (s)		18.4			13.0			53.3			28.0	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	642	88	0	547	46	122	528	91	0	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	212	3025			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	698	96	0	595	50	133	574	99	0	587	0
RTOR Reduction (vph)	0	0	55	0	0	29	0	16	0	0	0	0
Lane Group Flow (vph)	0	698	41	0	595	21	133	657	0	0	587	0
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		38.3	38.3		38.3	38.3	41.3	41.3			28.6	
Effective Green, g (s)		38.3	38.3		38.3	38.3	41.3	41.3			28.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.46	0.46			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		713	431		713	572	209	1388			513	
v/s Ratio Prot		c0.42			0.35		c0.05	0.22			c0.36	
v/s Ratio Perm			0.04			0.02	0.24					
v/c Ratio		0.98	0.10		0.83	0.04	0.64	0.47			1.14	
Uniform Delay, d1		25.5	15.5		23.0	15.1	34.0	16.8			30.7	
Progression Factor		0.67	0.05		0.31	0.43	0.79	0.86			0.96	
Incremental Delay, d2		27.5	0.4		6.3	0.1	5.5	0.2			82.0	
Delay (s)		44.6	1.1		13.5	6.6	32.5	14.7			111.3	
Level of Service		D	A		B	A	C	B			F	
Approach Delay (s)		39.3			13.0			17.7			111.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	525	192	62	597	0	0	0	0	19	658	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1593	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.24	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	410	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	571	209	67	649	0	0	0	0	21	715	43
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	571	198	67	649	0	0	0	0	21	715	19
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	183	748					614	1433	275
v/s Ratio Prot		0.34			c0.39						c0.22	
v/s Ratio Perm			0.18	0.16						0.02		0.03
v/c Ratio		0.76	0.40	0.37	0.87					0.03	0.50	0.07
Uniform Delay, d1		20.9	16.7	16.5	22.5					13.8	17.6	14.1
Progression Factor		1.41	1.65	1.00	1.00					0.21	0.19	0.00
Incremental Delay, d2		2.9	0.9	5.6	13.0					0.1	1.1	0.4
Delay (s)		32.5	28.5	22.0	35.5					3.0	4.5	0.5
Level of Service		C	C	C	D					A	A	A
Approach Delay (s)		31.4			34.2			0.0			4.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	130	27	315	1118	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.94	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1497	3185	3185	748
Flt Permitted	0.95	1.00	0.19	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	296	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	141	29	342	1215	92
RTOR Reduction (vph)	0	20	0	0	0	19
Lane Group Flow (vph)	190	121	29	342	1215	73
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	20.0	20.0	60.3	60.3	60.3	60.3
Effective Green, g (s)	20.0	20.0	60.3	60.3	60.3	60.3
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	419	198	2133	2133	501
v/s Ratio Prot				0.11	c0.38	
v/s Ratio Perm	c0.13	0.06	0.10			0.10
v/c Ratio	0.60	0.29	0.15	0.16	0.57	0.14
Uniform Delay, d1	31.4	29.1	5.4	5.5	7.9	5.4
Progression Factor	1.00	1.00	1.00	1.00	2.20	3.04
Incremental Delay, d2	3.2	0.4	1.6	0.2	0.8	0.5
Delay (s)	34.7	29.5	7.0	5.7	18.3	17.0
Level of Service	C	C	A	A	B	B
Approach Delay (s)	32.5			5.8	18.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1553	193	64	503	0	0	1323	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1688	210	70	547	0	0	1438	254
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	117	1887	0	70	547	0	0	1438	246
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.61			0.17			c0.45	
v/s Ratio Perm				0.08			0.34					0.21
v/c Ratio				0.15	1.08		0.95	0.47			1.23	0.58
Uniform Delay, d1				9.2	19.5		27.6	21.8			28.5	22.9
Progression Factor				1.33	0.98		1.38	1.43			1.36	1.49
Incremental Delay, d2				0.2	42.1		76.6	1.0			109.7	3.8
Delay (s)				12.5	61.2		114.7	32.3			148.5	38.0
Level of Service				B	E		F	C			F	D
Approach Delay (s)		0.0			58.4			41.6			131.9	
Approach LOS		A			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	84.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	1358	89	151	474	0	0	258	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.96			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3016			1616	941
Flt Permitted				0.95	1.00	1.00		0.73			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2235			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	1476	97	164	515	0	0	280	171
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	58
Lane Group Flow (vph)	0	0	0	48	1476	59	0	679	0	0	280	113
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		931			673	392
v/s Ratio Prot					c0.46						0.17	
v/s Ratio Perm				0.05		0.05		c0.30				0.12
v/c Ratio				0.11	0.97	0.11		0.73			0.42	0.29
Uniform Delay, d1				12.8	22.7	12.8		22.0			18.5	17.4
Progression Factor				0.90	1.13	1.36		0.29			0.96	1.00
Incremental Delay, d2				0.3	12.3	0.3		2.2			0.2	0.2
Delay (s)				11.9	38.1	17.7		8.5			17.9	17.6
Level of Service				B	D	B		A			B	B
Approach Delay (s)		0.0			36.1			8.5			17.8	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	303	982	0	0	0	0	0	966	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	329	1067	0	0	0	0	0	1050	341
RTOR Reduction (vph)	0	0	0	52	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	277	1067	0	0	0	0	0	1050	331
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.33						0.23	
v/s Ratio Perm				0.21								c0.29
v/c Ratio				0.58	0.94						0.43	0.54
Uniform Delay, d1				23.5	27.9						12.5	13.6
Progression Factor				1.00	1.00						1.47	1.52
Incremental Delay, d2				5.2	15.2						0.5	3.2
Delay (s)				28.7	43.2						19.0	23.9
Level of Service				C	D						B	C
Approach Delay (s)		0.0			39.7			0.0			20.2	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	88	1295	0	0	129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1408	0	0	140	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	96	1408	0	0	140	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	53.3	74.1			9.4	
Effective Green, g (s)	53.3	74.1			9.4	
Actuated g/C Ratio	0.59	0.82			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1829	5590			322	
v/s Ratio Prot	0.03	c0.21				
v/s Ratio Perm					c0.05	
v/c Ratio	0.05	0.25			0.43	
Uniform Delay, d1	7.7	1.8			37.8	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1			0.9	
Delay (s)	7.8	1.9			38.8	
Level of Service	A	A			D	
Approach Delay (s)		2.3	0.0		38.8	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	1104	152	0	0	0	0	1526	344	118	233	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4386		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4386		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1200	165	0	0	0	0	1659	374	128	253	0
RTOR Reduction (vph)	0	0	108	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	132	1200	57	0	0	0	0	2017	0	128	253	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1856		236	912	
v/s Ratio Prot		c0.21						c0.46		c0.04	0.15	
v/s Ratio Perm	0.12		0.04									
v/c Ratio	0.34	0.60	0.13					1.09		0.54	0.28	
Uniform Delay, d1	21.8	24.3	20.2					25.9		40.0	11.0	
Progression Factor	1.00	1.01	1.31					0.48		1.00	1.00	
Incremental Delay, d2	2.3	1.3	0.6					46.7		2.5	0.8	
Delay (s)	24.2	26.0	27.0					59.1		42.6	11.8	
Level of Service	C	C	C					E		D	B	
Approach Delay (s)		25.9			0.0			59.1			22.1	
Approach LOS		C			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1491	128	0	0	0	0	792	101	118	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.95	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3029		1520	3185	
Flt Permitted		1.00						1.00		0.20	1.00	
Satd. Flow (perm)		5642						3029		319	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1621	139	0	0	0	0	861	110	128	1190	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1779	0	0	0	0	0	969	0	128	1190	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1480		155	1557	
v/s Ratio Prot								0.32			0.37	
v/s Ratio Perm		0.32								c0.40		
v/c Ratio		0.75						0.66		0.83	0.76	
Uniform Delay, d1		21.9						17.3		19.7	18.8	
Progression Factor		0.75						0.64		0.43	0.24	
Incremental Delay, d2		1.6						2.0		4.7	0.3	
Delay (s)		18.0						13.0		13.2	4.9	
Level of Service		B						B		B	A	
Approach Delay (s)		18.0			0.0			13.0			5.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	1453	81	0	0	0	0	471	178	0	361	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5385						2738			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5385						2738			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1579	88	0	0	0	0	512	193	0	392	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1827	0	0	0	0	0	704	0	0	392	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2572						1116			658	
v/s Ratio Prot								c0.26			0.24	
v/s Ratio Perm		0.34										
v/c Ratio		0.71						0.63			0.60	
Uniform Delay, d1		18.6						21.2			20.8	
Progression Factor		0.54						0.91			1.13	
Incremental Delay, d2		1.1						2.5			3.8	
Delay (s)		11.2						21.8			27.4	
Level of Service		B						C			C	
Approach Delay (s)		11.2			0.0			21.8			27.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1494	215	0	0	0	0	0	0	324	1144	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5450									4329	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5450									4329	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1624	234	0	0	0	0	0	0	352	1243	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1846	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1899	
v/s Ratio Prot		c0.34										
v/s Ratio Perm											0.37	
v/c Ratio		0.74									0.83	
Uniform Delay, d1		20.0									22.3	
Progression Factor		1.42									0.48	
Incremental Delay, d2		1.5									4.2	
Delay (s)		29.8									14.9	
Level of Service		C									B	
Approach Delay (s)		29.8			0.0			0.0			14.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	1466	280	0	0	0	0	967	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	468	1593	304	0	0	0	0	1051	282
RTOR Reduction (vph)	0	0	0	25	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	363	1933	0	0	0	0	0	1051	269
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.23	
v/s Ratio Perm				c0.48	0.35							c0.29
v/c Ratio				1.09	0.79						0.52	0.65
Uniform Delay, d1				25.0	21.4						18.0	19.5
Progression Factor				1.26	1.24						1.00	1.00
Incremental Delay, d2				72.2	2.3						0.9	7.6
Delay (s)				103.7	28.9						19.0	27.1
Level of Service				F	C						B	C
Approach Delay (s)		0.0			41.2			0.0			20.7	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1077	91	631	1454	0	0	0	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5517		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5517		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1171	99	686	1580	0	0	0	443
RTOR Reduction (vph)	0	0	0	0	12	0	459	0	0	0	0	416
Lane Group Flow (vph)	0	0	0	0	1258	0	227	1580	0	0	0	27
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2016		851	2013				153
v/s Ratio Prot					c0.23		0.07	c0.35				
v/s Ratio Perm												c0.01
v/c Ratio					0.62		0.27	0.78				0.18
Uniform Delay, d1					23.5		25.5	21.6				40.1
Progression Factor					1.15		3.20	1.54				1.00
Incremental Delay, d2					1.2		0.5	2.0				0.5
Delay (s)					28.1		82.2	35.3				40.6
Level of Service					C		F	D				D
Approach Delay (s)		0.0			28.1			49.5			40.6	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	883	155	81	750	0	0	969	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1518	3185			3185	936
Flt Permitted				0.95	1.00		0.20	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		323	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	960	168	88	815	0	0	1053	185
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	103	1093	0	88	815	0	0	1053	174
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		180	1776			1776	522
v/s Ratio Prot					c0.20			0.26			c0.33	
v/s Ratio Perm				0.12			0.27					0.19
v/c Ratio				0.36	0.61		0.49	0.46			0.59	0.33
Uniform Delay, d1				22.7	25.1		12.1	11.8			13.1	10.8
Progression Factor				0.31	0.30		1.24	1.20			1.92	2.04
Incremental Delay, d2				3.0	1.4		8.1	0.7			0.9	1.1
Delay (s)				10.1	8.8		23.1	14.9			26.2	23.2
Level of Service				B	A		C	B			C	C
Approach Delay (s)		0.0			8.9			15.7			25.8	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	45	977	70	49	550	0	0	375	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.99			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5396			3127			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5396			2785			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	49	1062	76	53	598	0	0	408	73
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1176	0	0	651	0	0	408	61
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2098			1407			816	404
v/s Ratio Prot											c0.25	
v/s Ratio Perm					0.22			0.23				0.08
v/c Ratio					0.56			0.46			0.50	0.15
Uniform Delay, d1					21.5			14.4			14.7	11.9
Progression Factor					0.50			1.48			1.80	2.06
Incremental Delay, d2					1.0			0.9			1.7	0.6
Delay (s)					11.7			22.2			28.3	25.1
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.7			22.2			27.8	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	733	0	0	0	0	0	1068	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	797	0	0	0	0	0	1161	229
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	0	0	0	935	0	0	0	0	0	1161	193
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.25	
v/s Ratio Perm					0.16							0.14
v/c Ratio					0.42						0.50	0.27
Uniform Delay, d1					19.9						14.7	12.7
Progression Factor					1.00						0.57	0.55
Incremental Delay, d2					0.6						0.4	0.5
Delay (s)					20.4						8.9	7.6
Level of Service					C						A	A
Approach Delay (s)		0.0			20.4			0.0			8.7	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1686	188	0	0	0	0	0	0	208	1368	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5496	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1833	204	0	0	0	0	0	0	226	1487	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1833	194	0	0	0	0	0	0	0	1701	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2467	
v/s Ratio Prot		c0.32										
v/s Ratio Perm			0.21								0.31	
v/c Ratio		0.71	0.47								0.69	
Uniform Delay, d1		20.1	17.4								19.8	
Progression Factor		1.00	1.00								1.16	
Incremental Delay, d2		1.7	3.8								1.3	
Delay (s)		21.8	21.2								24.2	
Level of Service		C	C								C	
Approach Delay (s)		21.7			0.0			0.0			24.2	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	639	1233	0	0	0	0	0	1640	217	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5043						6417				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5043						6417				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	695	1340	0	0	0	0	0	1783	236	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	384	1627	0	0	0	0	0	2009	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2873				
v/s Ratio Prot								c0.31				
v/s Ratio Perm	c0.46	0.32										
v/c Ratio	1.02	0.72						0.70				
Uniform Delay, d1	24.9	20.3						20.0				
Progression Factor	0.45	0.38						0.80				
Incremental Delay, d2	44.4	1.4						0.9				
Delay (s)	55.5	9.1						17.0				
Level of Service	E	A						B				
Approach Delay (s)		18.2			0.0			17.0			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1145	155	0	0	0	0	820	115	102	934	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.24	1.00	
Satd. Flow (perm)		5664						3185	1425	410	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1245	168	0	0	0	0	891	125	111	1015	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	1386	0	0	0	0	0	891	119	111	1015	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	223	2491	
v/s Ratio Prot		c0.24						c0.28			0.22	
v/s Ratio Perm									0.08	0.27		
v/c Ratio		0.63						0.51	0.15	0.50	0.41	
Uniform Delay, d1		22.3						13.0	10.2	12.8	12.0	
Progression Factor		0.26						0.40	0.45	0.41	0.40	
Incremental Delay, d2		0.9						0.9	0.3	6.4	0.4	
Delay (s)		6.8						6.1	4.9	11.7	5.3	
Level of Service		A						A	A	B	A	
Approach Delay (s)		6.8			0.0			6.0			5.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	1066	132	0	0	0	0	611	108	0	419	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5149						2937			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5149						2937			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	1159	143	0	0	0	0	664	117	0	455	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1454	0	0	0	0	0	778	0	0	455	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1295			712	
v/s Ratio Prot								0.26			c0.28	
v/s Ratio Perm		0.28										
v/c Ratio		0.64						0.60			0.64	
Uniform Delay, d1		19.4						19.1			19.6	
Progression Factor		0.28						1.48			1.03	
Incremental Delay, d2		1.1						1.5			3.8	
Delay (s)		6.6						29.7			24.0	
Level of Service		A						C			C	
Approach Delay (s)		6.6			0.0			29.7			24.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1106	138	0	0	0	0	0	0	234	1071	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1202	150	0	0	0	0	0	0	254	1164	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1334	0	0	0	0	0	0	0	0	1402	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.31	
v/c Ratio		0.53									0.69	
Uniform Delay, d1		17.9									19.7	
Progression Factor		0.19									0.96	
Incremental Delay, d2		0.6									1.7	
Delay (s)		4.0									20.6	
Level of Service		A									C	
Approach Delay (s)		4.0			0.0			0.0			20.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	279	0	0	476	151	294	1500	115	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	303	0	0	517	164	320	1630	125	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	91	0	0	0
Lane Group Flow (vph)	116	303	0	0	517	28	320	1630	34	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Effective Green, g (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	252	1028			1661	99	431	1239	372			
v/s Ratio Prot	c0.04	0.02			c0.02	0.02		c0.36				
v/s Ratio Perm		0.17			0.14		0.20		0.02			
v/c Ratio	0.46	0.29			0.31	0.29	0.74	1.32	0.09			
Uniform Delay, d1	52.6	12.2			19.4	53.0	39.9	43.8	32.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.2			0.1	1.6	11.0	147.8	0.5			
Delay (s)	53.9	12.4			19.5	54.5	50.9	191.6	33.2			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.9			27.9			160.3			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	113.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	316	201	81	449	0	0	0	0	47	1441	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3075						5514	
Flt Permitted		1.00	1.00		0.81						1.00	
Satd. Flow (perm)		1676	932		2509						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	343	218	88	488	0	0	0	0	51	1566	87
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	343	206	0	576	0	0	0	0	0	1695	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1173						2340	
v/s Ratio Prot		0.20										
v/s Ratio Perm			0.22		c0.23						0.31	
v/c Ratio		0.44	0.47		0.49						0.72	
Uniform Delay, d1		16.0	16.4		16.5						21.5	
Progression Factor		1.00	1.00		0.27						1.00	
Incremental Delay, d2		1.8	3.7		1.4						2.0	
Delay (s)		17.8	20.1		5.9						23.5	
Level of Service		B	C		A						C	
Approach Delay (s)		18.7			5.9			0.0			23.5	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	353	65	0	481	85	75	390	73	42	356	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2765			3039	
Flt Permitted		1.00	1.00		1.00	1.00		0.82			0.86	
Satd. Flow (perm)		1616	762		3185	650		2295			2612	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	384	71	0	523	92	82	424	79	46	387	16
RTOR Reduction (vph)	0	0	7	0	0	8	0	4	0	0	1	0
Lane Group Flow (vph)	0	384	64	0	523	84	0	581	0	0	448	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		994			1131	
v/s Ratio Prot		c0.24			0.16							
v/s Ratio Perm			0.08			0.13		c0.25			0.17	
v/c Ratio		0.48	0.17		0.33	0.26		0.58			0.40	
Uniform Delay, d1		14.8	12.3		13.5	12.9		19.4			17.4	
Progression Factor		0.46	0.43		1.12	1.15		1.08			1.00	
Incremental Delay, d2		1.9	0.9		0.4	1.5		2.1			1.0	
Delay (s)		8.6	6.2		15.6	16.4		23.0			18.5	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		8.2			15.7			23.0			18.5	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	380	78	44	490	0	0	0	0	217	1491	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.84	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1335	1676					933	3185	959
Flt Permitted		1.00	1.00	0.39	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	550	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	413	85	48	533	0	0	0	0	236	1621	55
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	413	72	48	533	0	0	0	0	236	1621	42
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	244	744					415	1419	427
v/s Ratio Prot		0.25			c0.32						c0.51	
v/s Ratio Perm			0.09	0.09						0.25		0.04
v/c Ratio		0.56	0.20	0.20	0.72					0.57	1.14	0.10
Uniform Delay, d1		18.4	15.2	15.2	20.4					18.5	24.9	14.5
Progression Factor		1.42	1.52	0.46	0.39					1.99	1.86	2.56
Incremental Delay, d2		2.6	1.1	1.3	4.3					4.5	71.5	0.4
Delay (s)		28.8	24.2	8.4	12.2					41.3	117.9	37.4
Level of Service		C	C	A	B					D	F	D
Approach Delay (s)		28.0			11.8			0.0			106.2	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	74.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	625	0	0	510	170	122	1412	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5255				
Flt Permitted	0.33	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	546	1676			1676	803		5255				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	679	0	0	554	185	133	1535	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	52	679	0	0	554	175	0	1774	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	293	899			899	430		1880				
v/s Ratio Prot		c0.41			0.33							
v/s Ratio Perm	0.10					0.22		0.34				
v/c Ratio	0.18	0.76			0.62	0.41		0.94				
Uniform Delay, d1	10.7	16.2			14.4	12.4		28.0				
Progression Factor	0.63	0.59			1.40	1.47		0.89				
Incremental Delay, d2	1.2	5.2			0.9	0.8		1.4				
Delay (s)	7.9	14.8			21.2	18.9		26.3				
Level of Service	A	B			C	B		C				
Approach Delay (s)		14.3			20.6			26.3			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	81	465	67	23	481	119	0	755	56	0	1059	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	1.00	1.00	1.00	0.80	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	801	1273	1676	799		3001			2800	
Flt Permitted	0.95	1.00	1.00	0.44	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	1593	1676	801	591	1676	799		3001			2800	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	88	505	73	25	523	129	0	821	61	0	1151	222
RTOR Reduction (vph)	0	0	2	0	0	53	0	4	0	0	18	0
Lane Group Flow (vph)	88	505	71	25	523	76	0	878	0	0	1355	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Actuated Green, G (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Effective Green, g (s)	10.0	43.0	43.0	30.0	30.0	30.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.33	0.33	0.33		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	177	800	382	197	558	266		1367			1275	
v/s Ratio Prot	0.06	c0.30			c0.31			0.29			c0.48	
v/s Ratio Perm			0.09	0.04		0.09						
v/c Ratio	0.50	0.63	0.19	0.13	0.94	0.28		0.64			1.06	
Uniform Delay, d1	37.6	17.6	13.5	20.9	29.1	22.1		18.9			24.5	
Progression Factor	0.70	1.04	0.82	1.66	1.62	2.53		1.23			1.29	
Incremental Delay, d2	5.8	2.3	0.6	1.1	22.8	2.3		2.0			43.0	
Delay (s)	32.2	20.6	11.7	35.9	70.0	58.1		25.2			74.7	
Level of Service	C	C	B	D	E	E		C			E	
Approach Delay (s)		21.2			66.5			25.2			74.7	
Approach LOS		C			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	448	41	13	466	64	11	775	63	0	649	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.89	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1413	1676	439	1593	1676	881		2994			1616	
Flt Permitted	0.29	1.00	1.00	0.31	1.00	1.00		0.90			1.00	
Satd. Flow (perm)	436	1676	439	523	1676	881		2683			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	487	45	14	507	70	12	842	68	0	705	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	3	0	0	0	0
Lane Group Flow (vph)	30	487	27	14	507	52	0	919	0	0	705	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	39.1	39.1	39.1	39.1	39.1	39.1		40.4			40.4	
Effective Green, g (s)	39.1	39.1	39.1	39.1	39.1	39.1		40.4			40.4	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43		0.45			0.45	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	189	728	190	227	728	382		1204			725	
v/s Ratio Prot		0.29			c0.30						c0.44	
v/s Ratio Perm	0.07		0.06	0.03		0.06		0.34				
v/c Ratio	0.16	0.67	0.14	0.06	0.70	0.14		0.76			0.97	
Uniform Delay, d1	15.5	20.3	15.3	14.8	20.6	15.3		20.8			24.3	
Progression Factor	0.95	1.13	1.42	0.85	1.05	1.08		0.86			0.51	
Incremental Delay, d2	1.4	3.8	1.2	0.4	4.5	0.6		1.9			24.8	
Delay (s)	16.1	26.7	23.1	13.0	26.1	17.1		19.7			37.1	
Level of Service	B	C	C	B	C	B		B			D	
Approach Delay (s)		25.9			24.7			19.7			37.1	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	79	64	414	0	0	0	0	71	959	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.88	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1409	1676						4399	618
Flt Permitted		1.00	1.00	0.31	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	464	1676						4399	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	86	70	450	0	0	0	0	77	1042	153
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	489	66	70	450	0	0	0	0	0	1119	68
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	197	713						1964	276
v/s Ratio Prot		c0.29			0.27							
v/s Ratio Perm			0.08	0.15							0.25	0.11
v/c Ratio		0.69	0.18	0.36	0.63						0.57	0.25
Uniform Delay, d1		21.0	16.1	17.5	20.3						18.5	15.5
Progression Factor		1.60	1.92	1.00	1.00						1.38	4.56
Incremental Delay, d2		4.0	0.8	5.0	4.2						0.9	1.6
Delay (s)		37.5	31.8	22.4	24.5						26.3	72.2
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.7			24.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2182	376	267	2355	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2372	409	290	2560	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	116	92	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2372	293	198	2560	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					32.7	32.7	35.0	35.0				
Effective Green, g (s)					32.7	32.7	35.0	35.0				
Actuated g/C Ratio					0.36	0.36	0.39	0.39				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2095	406	619	1779				
v/s Ratio Prot					c0.41			c0.56				
v/s Ratio Perm						0.26	0.12					
v/c Ratio					1.13	0.72	0.32	1.44				
Uniform Delay, d1					28.6	24.7	19.2	27.5				
Progression Factor					1.00	1.00	0.78	0.85				
Incremental Delay, d2					66.1	10.6	0.9	199.7				
Delay (s)					94.8	35.3	15.9	222.9				
Level of Service					F	D	B	F				
Approach Delay (s)		0.0			86.0			201.9			0.0	
Approach LOS		A			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	144.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	1303	116	73	758	0	0	960	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.96	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4414		1522	3185			3185	975
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1160	4414		305	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	1416	126	79	824	0	0	1043	198
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	101	1530	0	79	824	0	0	1043	197
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1716		166	1734			1734	530
v/s Ratio Prot					c0.35			0.26			c0.33	
v/s Ratio Perm				0.09			0.26					0.20
v/c Ratio				0.22	0.89		0.48	0.48			0.60	0.37
Uniform Delay, d1				18.4	25.7		12.6	12.6			13.9	11.7
Progression Factor				1.85	1.77		1.12	0.92			0.95	1.03
Incremental Delay, d2				0.8	5.6		8.6	0.8			0.4	0.5
Delay (s)				34.8	51.2		22.7	12.5			13.5	12.6
Level of Service				C	D		C	B			B	B
Approach Delay (s)		0.0			50.2			13.3			13.4	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	1252	73	102	789	0	0	476	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5598			3167			1616	936
Flt Permitted					1.00			0.61			1.00	1.00
Satd. Flow (perm)					5598			1952			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	1361	79	111	858	0	0	517	235
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	60
Lane Group Flow (vph)	0	0	0	0	1517	0	0	969	0	0	517	175
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					37.0			42.7			28.7	28.7
Effective Green, g (s)					37.0			42.7			28.7	28.7
Actuated g/C Ratio					0.41			0.47			0.32	0.32
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2301			1043			515	298
v/s Ratio Prot								c0.09			0.32	
v/s Ratio Perm					0.27			c0.35				0.19
v/c Ratio					0.66			0.93			1.00	0.59
Uniform Delay, d1					21.4			22.2			30.6	25.7
Progression Factor					1.76			1.49			1.61	2.05
Incremental Delay, d2					1.2			10.9			25.9	3.3
Delay (s)					38.8			44.1			75.2	55.9
Level of Service					D			D			E	E
Approach Delay (s)		0.0			38.8			44.1			69.2	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	130	1181	0	0	0	0	0	770	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5561						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5561						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	1284	0	0	0	0	0	837	234
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1404	0	0	0	0	0	837	223
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2263	634
v/s Ratio Prot											c0.18	
v/s Ratio Perm					0.25							0.17
v/c Ratio					0.63						0.37	0.35
Uniform Delay, d1					21.4						14.1	13.9
Progression Factor					1.00						1.83	1.92
Incremental Delay, d2					1.3						0.4	1.3
Delay (s)					22.8						26.1	28.0
Level of Service					C						C	C
Approach Delay (s)		0.0			22.8			0.0			26.5	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	346	1737	0	0	0	0	0	1561	193	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	376	1888	0	0	0	0	0	1697	210	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	321	1909	0	0	0	0	0	1697	195	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2079						1585	476			
v/s Ratio Prot								c0.53				
v/s Ratio Perm	0.29	0.35							0.20			
v/c Ratio	0.77	0.92						1.07	0.41			
Uniform Delay, d1	24.2	26.4						22.6	14.3			
Progression Factor	1.00	1.00						1.31	1.62			
Incremental Delay, d2	12.5	8.0						33.3	0.2			
Delay (s)	36.6	34.4						63.0	23.3			
Level of Service	D	C						E	C			
Approach Delay (s)		34.7			0.0			58.6			0.0	
Approach LOS		C			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1441	280	0	0	0	0	0	0	181	1444	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5626								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5626								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1566	304	0	0	0	0	0	0	197	1570	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1861	0	0	0	0	0	0	0	185	1570	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2187								785	2845	
v/s Ratio Prot		c0.33									c0.27	
v/s Ratio Perm										0.12		
v/c Ratio		0.85								0.24	0.55	
Uniform Delay, d1		25.1								13.1	15.9	
Progression Factor		1.68								0.48	0.73	
Incremental Delay, d2		2.1								0.5	0.6	
Delay (s)		44.3								6.8	12.1	
Level of Service		D								A	B	
Approach Delay (s)		44.3			0.0			0.0			11.5	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	1403	46	0	0	0	0	636	99	104	424	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.98	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5442						2976			3106	
Flt Permitted		0.99						1.00			0.68	
Satd. Flow (perm)		5442						2976			2123	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	1525	50	0	0	0	0	691	108	113	461	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1778	0	0	0	0	0	799	0	0	574	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0			52.0	
Effective Green, g (s)		32.0						52.0			52.0	
Actuated g/C Ratio		0.36						0.58			0.58	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1934						1719			1226	
v/s Ratio Prot								0.27				
v/s Ratio Perm		0.33									c0.27	
v/c Ratio		0.92						0.46			0.47	
Uniform Delay, d1		27.8						11.0			11.0	
Progression Factor		1.25						1.00			0.51	
Incremental Delay, d2		5.6						0.9			1.2	
Delay (s)		40.2						11.9			6.9	
Level of Service		D						B			A	
Approach Delay (s)		40.2			0.0			11.9			6.9	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1716	261	0	0	0	0	0	0	251	2000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1865	284	0	0	0	0	0	0	273	2174	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1865	271	0	0	0	0	0	0	258	2174	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.41									c0.48	
v/s Ratio Perm			0.23							0.18		
v/c Ratio		1.03	0.58							0.36	0.97	
Uniform Delay, d1		27.2	21.3							14.1	22.2	
Progression Factor		0.78	0.67							0.96	0.76	
Incremental Delay, d2		26.1	3.6							0.8	9.1	
Delay (s)		47.2	17.9							14.4	26.0	
Level of Service		D	B							B	C	
Approach Delay (s)		43.3			0.0			0.0			24.7	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	546	2646	0	0	0	0	0	2217	335	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4412						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4412						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	593	2876	0	0	0	0	0	2410	364	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	0	3456	0	0	0	0	0	2410	352	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		36.1						44.3	44.3			
Effective Green, g (s)		36.1						44.3	44.3			
Actuated g/C Ratio		0.40						0.49	0.49			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1769						2252	635			
v/s Ratio Prot								c0.53				
v/s Ratio Perm		0.78							0.27			
v/c Ratio		1.95						1.07	0.55			
Uniform Delay, d1		26.9						22.9	16.0			
Progression Factor		1.14						0.66	0.58			
Incremental Delay, d2		430.9						40.0	3.1			
Delay (s)		461.7						55.2	12.4			
Level of Service		F						E	B			
Approach Delay (s)		461.7			0.0			49.6			0.0	
Approach LOS		F			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	278.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	1524	57	0	0	0	0	706	74	123	1019	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.93	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4462						3051		1488	3185	
Flt Permitted		1.00						1.00		0.27	1.00	
Satd. Flow (perm)		4462						3051		427	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	1657	62	0	0	0	0	767	80	134	1108	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1756	0	0	0	0	0	847	0	134	1108	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		32.0						52.0		52.0	52.0	
Effective Green, g (s)		32.0						52.0		52.0	52.0	
Actuated g/C Ratio		0.36						0.58		0.58	0.58	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1586						1762		246	1840	
v/s Ratio Prot								0.28			c0.35	
v/s Ratio Perm		0.39								0.31		
v/c Ratio		1.11						0.48		0.54	0.60	
Uniform Delay, d1		29.0						11.1		11.7	12.3	
Progression Factor		1.54						0.19		0.33	0.32	
Incremental Delay, d2		49.4						0.7		7.3	1.3	
Delay (s)		94.2						2.8		11.1	5.2	
Level of Service		F						A		B	A	
Approach Delay (s)		94.2			0.0			2.8			5.9	
Approach LOS		F			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	1507	115	0	0	0	0	893	116	0	590	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4355						3005			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4355						3005			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	1638	125	0	0	0	0	971	126	0	641	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	213	1753	0	0	0	0	0	1096	0	0	641	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1896						1352			727	
v/s Ratio Prot		c0.40						0.36			c0.40	
v/s Ratio Perm	0.20											
v/c Ratio	0.46	0.92						0.81			0.88	
Uniform Delay, d1	17.9	24.0						21.4			22.6	
Progression Factor	0.57	0.73						0.82			0.44	
Incremental Delay, d2	0.8	2.8						2.4			6.8	
Delay (s)	11.0	20.2						19.9			16.8	
Level of Service	B	C						B			B	
Approach Delay (s)		19.2			0.0			19.9			16.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	332	1017	130	0	0	0	0	1293	100	80	923	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4341						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.10	1.00	
Satd. Flow (perm)	1221	4341						3185	1110	174	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	1105	141	0	0	0	0	1405	109	87	1003	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	361	1228	0	0	0	0	0	1405	97	87	1003	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1437						1772	617	96	1772	
v/s Ratio Prot		0.28						0.44			0.31	
v/s Ratio Perm	c0.30								0.09	c0.50		
v/c Ratio	0.89	0.85						0.79	0.16	0.91	0.57	
Uniform Delay, d1	28.6	28.1						15.8	9.7	17.8	12.9	
Progression Factor	1.58	1.61						1.61	2.01	1.00	1.00	
Incremental Delay, d2	11.6	2.7						2.1	0.3	68.9	1.3	
Delay (s)	56.9	47.9						27.6	19.8	86.7	14.2	
Level of Service	E	D						C	B	F	B	
Approach Delay (s)		49.9			0.0			27.1			20.0	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1060	227	108	1648	237	272	1483	202	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1072	1475	4577	950	1164	3185	1246			
Flt Permitted	0.14	1.00	1.00	0.23	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	243	4577	1072	363	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	1152	247	117	1791	258	296	1612	220	0	0	0
RTOR Reduction (vph)	0	0	95	0	0	98	0	0	45	0	0	0
Lane Group Flow (vph)	207	1152	152	117	1791	160	296	1612	175	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	35.6	35.6	55.4	23.6	23.6	23.6	42.4	42.4	42.4			
Effective Green, g (s)	35.6	35.6	55.4	23.6	23.6	23.6	42.4	42.4	42.4			
Actuated g/C Ratio	0.40	0.40	0.62	0.26	0.26	0.26	0.47	0.47	0.47			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1810	659	95	1200	249	548	1500	587			
v/s Ratio Prot	c0.09	0.25	0.05		c0.39		0.12	c0.51				
v/s Ratio Perm	0.29		0.09	0.32		0.17	0.14		0.14			
v/c Ratio	0.96	0.64	0.23	1.23	1.49	0.64	0.54	1.07	0.30			
Uniform Delay, d1	22.7	22.0	7.8	33.2	33.2	29.5	16.9	23.8	14.6			
Progression Factor	1.00	1.00	1.00	1.08	1.05	1.20	0.55	0.74	0.30			
Incremental Delay, d2	48.9	1.7	0.2	143.1	224.0	6.6	0.1	35.1	0.1			
Delay (s)	71.6	23.7	7.9	178.9	259.0	42.0	9.5	52.6	4.5			
Level of Service	E	C	A	F	F	D	A	D	A			
Approach Delay (s)		27.4			228.8			41.6			0.0	
Approach LOS		C			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	106.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1045	66	56	1367	0	0	0	0	70	1322	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.14	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	240	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1136	72	61	1486	0	0	0	0	76	1437	453
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1136	57	61	1486	0	0	0	0	0	1513	439
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	114	1521						2345	581
v/s Ratio Prot		0.36			c0.47							
v/s Ratio Perm			0.04	0.25							0.26	c0.31
v/c Ratio		0.75	0.08	0.54	0.98						0.65	0.76
Uniform Delay, d1		19.1	12.8	16.5	23.0						21.4	22.8
Progression Factor		0.39	0.14	1.00	1.00						1.66	1.66
Incremental Delay, d2		2.8	0.2	16.8	18.2						1.1	7.4
Delay (s)		10.4	2.1	33.3	41.2						36.8	45.2
Level of Service		B	A	C	D						D	D
Approach Delay (s)		9.9			40.9			0.0			38.7	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	1050	45	32	1112	73	100	525	54	31	309	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3125		1593	3086			3046			2888	
Flt Permitted	0.11	1.00		0.13	1.00			0.74			0.87	
Satd. Flow (perm)	179	3125		225	3086			2261			2507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	1141	49	35	1209	79	109	571	59	34	336	127
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	5	0
Lane Group Flow (vph)	146	1187	0	35	1283	0	0	732	0	0	492	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	89	1568		112	1549			908			1007	
v/s Ratio Prot		0.38			0.42							
v/s Ratio Perm	c0.82			0.16				c0.32			0.20	
v/c Ratio	1.64	0.76		0.31	0.83			0.81			0.49	
Uniform Delay, d1	24.9	20.0		14.7	21.2			26.5			22.3	
Progression Factor	1.00	1.00		0.48	0.59			1.00			1.00	
Incremental Delay, d2	333.0	3.5		3.8	2.8			7.6			1.7	
Delay (s)	357.9	23.5		10.9	15.3			34.1			23.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		60.0			15.2			34.1			23.9	
Approach LOS		E			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	977	112	111	1314	0	0	0	0	121	1609	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3136		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.14	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3136		228	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1062	122	121	1428	0	0	0	0	132	1749	305
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	1183	0	121	1428	0	0	0	0	132	1749	292
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		114	1592					637	1830	570
v/s Ratio Prot		0.38			0.45						c0.38	
v/s Ratio Perm				c0.53						0.08		0.20
v/c Ratio		0.75		1.06	0.90					0.21	0.96	0.51
Uniform Delay, d1		20.1		25.0	22.7					19.6	29.1	22.6
Progression Factor		1.04		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.2		101.8	8.3					0.7	12.9	3.3
Delay (s)		23.1		126.8	31.0					20.4	42.0	25.9
Level of Service		C		F	C					C	D	C
Approach Delay (s)		23.1			38.5			0.0			38.5	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	965	0	0	1243	87	152	1026	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3132			4529	1327			
Flt Permitted	0.09	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	145	3185			3132			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1049	0	0	1351	95	165	1115	51	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	32	0	0	0
Lane Group Flow (vph)	187	1049	0	0	1440	0	0	1280	19	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	74	1631			1604			1710	501			
v/s Ratio Prot		0.33			0.46							
v/s Ratio Perm	c1.29							0.28	0.01			
v/c Ratio	2.53	0.64			0.90			0.75	0.04			
Uniform Delay, d1	21.9	16.0			19.8			24.3	17.7			
Progression Factor	1.00	1.00			0.71			0.53	0.39			
Incremental Delay, d2	725.3	2.0			8.1			2.5	0.1			
Delay (s)	747.2	17.9			22.2			15.4	7.0			
Level of Service	F	B			C			B	A			
Approach Delay (s)		128.3			22.2			15.1			0.0	
Approach LOS		F			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	791	58	47	668	78	47	650	58	53	935	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.98	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1557	3112		1533	3103		1593	3110		1549	3185	1230
Flt Permitted	0.29	1.00		0.25	1.00		0.13	1.00		0.20	1.00	1.00
Satd. Flow (perm)	478	3112		401	3103		216	3110		319	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	860	63	51	726	85	51	707	63	58	1016	174
RTOR Reduction (vph)	0	4	0	0	10	0	0	7	0	0	0	81
Lane Group Flow (vph)	77	919	0	51	801	0	51	763	0	58	1016	93
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	278	1815		233	1810		74	1071		109	1097	423
v/s Ratio Prot		c0.30			0.26			0.25			c0.32	
v/s Ratio Perm	0.16			0.13			0.24			0.18		0.08
v/c Ratio	0.28	0.51		0.22	0.44		0.69	0.71		0.53	0.93	0.22
Uniform Delay, d1	9.3	11.1		9.0	10.5		25.4	25.6		23.7	28.4	20.9
Progression Factor	2.29	2.21		1.29	1.01		0.47	0.42		1.46	1.46	2.44
Incremental Delay, d2	1.9	0.8		1.6	0.6		38.5	3.7		14.3	12.2	1.0
Delay (s)	23.3	25.2		13.2	11.2		50.4	14.5		48.9	53.6	52.0
Level of Service	C	C		B	B		D	B		D	D	D
Approach Delay (s)		25.1			11.4			16.8			53.2	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	783	85	98	727	107	40	813	78	0	681	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.97	1.00		0.95	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1538	3052		1518	3043			3178	1263		1616	
Flt Permitted	0.21	1.00		0.20	1.00			0.69	1.00		1.00	
Satd. Flow (perm)	343	3052		315	3043			2193	1263		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	851	92	107	790	116	43	884	85	0	740	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	22	0	0	0
Lane Group Flow (vph)	95	934	0	107	893	0	0	927	63	0	740	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	40.0	40.0		40.0	40.0			40.0	40.0		40.0	
Effective Green, g (s)	40.0	40.0		40.0	40.0			40.0	40.0		40.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.44	0.44		0.44	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	152	1356		140	1352			974	561		718	
v/s Ratio Prot		0.31			0.29						c0.46	
v/s Ratio Perm	0.28			c0.34				0.42	0.05			
v/c Ratio	0.62	0.69		0.76	0.66			0.95	0.11		1.03	
Uniform Delay, d1	19.2	20.0		21.0	19.7			24.1	14.6		25.0	
Progression Factor	0.76	0.77		1.42	1.48			0.63	0.56		1.21	
Incremental Delay, d2	15.9	2.5		17.5	1.3			16.1	0.3		30.4	
Delay (s)	30.6	17.9		47.5	30.4			31.4	8.4		60.7	
Level of Service	C	B		D	C			C	A		E	
Approach Delay (s)		19.0			32.2			29.5			60.7	
Approach LOS		B			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	614	136	95	816	132	75	958	115	65	822	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3099		1593	3119		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.11	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1593	3099		577	3119		176	3185	1425	246	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	667	148	103	887	143	82	1041	125	71	893	325
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	153
Lane Group Flow (vph)	208	794	0	103	1016	0	82	1041	76	71	893	172
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1435		190	1029		74	1344	601	103	707	601
v/s Ratio Prot	c0.13	0.26			c0.33			0.33			c0.53	
v/s Ratio Perm				0.18			0.46		0.05	0.29		0.12
v/c Ratio	1.39	0.55		0.54	0.99		1.11	0.77	0.13	0.69	1.26	0.29
Uniform Delay, d1	40.8	17.4		24.6	30.0		26.0	22.3	15.9	21.2	26.0	17.1
Progression Factor	0.76	1.18		1.00	1.00		1.02	1.01	1.44	0.66	0.70	0.33
Incremental Delay, d2	203.9	1.3		10.7	25.2		131.2	4.0	0.4	27.7	128.1	1.0
Delay (s)	234.9	21.9		35.3	55.1		157.8	26.4	23.2	41.6	146.4	6.6
Level of Service	F	C		D	E		F	C	C	D	F	A
Approach Delay (s)		65.2			53.3			34.8			105.4	
Approach LOS		E			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	65.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	38	55	213	481	354	7	1792	0	10	311	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		201	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	41	60	232	523	385	8	1948	0	11	338	39
RTOR Reduction (vph)	0	0	45	0	0	129	0	0	0	0	0	25
Lane Group Flow (vph)	87	41	15	232	523	256	8	1948	0	11	338	14
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.0	17.5	22.5	11.1	21.6	21.6	5.0	43.4		33.4	33.4	33.4
Effective Green, g (s)	7.0	17.5	22.5	11.1	21.6	21.6	5.0	43.4		33.4	33.4	33.4
Actuated g/C Ratio	0.08	0.19	0.25	0.12	0.24	0.24	0.06	0.48		0.37	0.37	0.37
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	240	325	356	196	764	342	88	1535		74	621	528
v/s Ratio Prot	c0.03	0.02	0.00	c0.15	0.16		0.01	c0.61			0.20	
v/s Ratio Perm			0.01			c0.18				0.05		0.01
v/c Ratio	0.36	0.13	0.04	1.18	0.68	0.75	0.09	1.27		0.15	0.54	0.03
Uniform Delay, d1	39.4	29.9	25.6	39.5	31.1	31.7	40.3	23.3		18.8	22.3	18.0
Progression Factor	1.00	1.00	1.00	1.33	1.21	1.37	1.00	1.00		0.68	0.70	1.00
Incremental Delay, d2	0.9	0.2	0.0	116.2	2.0	7.0	0.4	126.4		3.6	2.9	0.1
Delay (s)	40.3	30.1	25.6	168.5	39.6	50.4	40.8	149.7		16.3	18.4	18.1
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.4			69.5			149.2			18.3	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	104.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	51	84	573	0	0	0	0	0	1287	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1666						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1666						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	55	91	623	0	0	0	0	0	1399	252
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	96
Lane Group Flow (vph)	0	0	42	0	714	0	0	0	0	0	1399	156
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.31	
v/s Ratio Perm			0.03		0.43							0.12
v/c Ratio			0.07		0.96						0.69	0.26
Uniform Delay, d1			14.4		24.3						19.9	15.7
Progression Factor			0.42		1.81						1.48	3.04
Incremental Delay, d2			0.3		18.6						1.6	0.9
Delay (s)			6.3		62.5						31.0	48.5
Level of Service			A		E						C	D
Approach Delay (s)		6.3			62.5			0.0			33.6	
Approach LOS		A			E			A			C	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	560	144	29	233	0	0	319	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1670	1403		3163			3080	
Flt Permitted					1.00	1.00		0.88			1.00	
Satd. Flow (perm)					1670	1403		2801			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	609	157	32	253	0	0	347	72
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	660	134	0	285	0	0	399	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					41.2	41.2		39.6			39.6	
Effective Green, g (s)					41.2	41.2		39.6			39.6	
Actuated g/C Ratio					0.46	0.46		0.44			0.44	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					764	642		1232			1355	
v/s Ratio Prot											c0.13	
v/s Ratio Perm					0.40	0.10		0.10				
v/c Ratio					0.86	0.21		0.23			0.29	
Uniform Delay, d1					21.9	14.6		15.7			16.2	
Progression Factor					1.60	2.10		1.00			1.00	
Incremental Delay, d2					8.6	0.5		0.4			0.6	
Delay (s)					43.6	31.2		16.2			16.8	
Level of Service					D	C		B			B	
Approach Delay (s)		0.0			41.2			16.2			16.8	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	176	546	0	0	0	0	0	1687	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	191	593	0	0	0	0	0	1834	210
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	0	0	0	191	593	0	0	0	0	0	1834	137
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.35						c0.40	
v/s Ratio Perm				0.13								0.12
v/c Ratio				0.34	0.91						0.79	0.23
Uniform Delay, d1				19.3	25.8						18.4	12.5
Progression Factor				0.51	0.67						1.00	1.00
Incremental Delay, d2				0.5	6.3						2.9	0.9
Delay (s)				10.4	23.6						21.4	13.4
Level of Service				B	C						C	B
Approach Delay (s)		0.0			20.4			0.0			20.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	651	136	147	1172	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	708	148	160	1274	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	18	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	708	128	0	1416	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					36.2	36.2		44.4				
Effective Green, g (s)					36.2	36.2		44.4				
Actuated g/C Ratio					0.40	0.40		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					674	528		2237				
v/s Ratio Prot					c0.42							
v/s Ratio Perm						0.10		0.31				
v/c Ratio					1.05	0.24		0.63				
Uniform Delay, d1					26.9	17.8		16.8				
Progression Factor					0.86	0.64		1.00				
Incremental Delay, d2					31.8	0.3		1.4				
Delay (s)					54.9	11.6		18.2				
Level of Service					D	B		B				
Approach Delay (s)		0.0			47.4			18.2			0.0	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	760	83	22	635	0	0	1028	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1277	1593	3185			3185	1277
Flt Permitted					0.99	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)					1657	1277	178	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	826	90	24	690	0	0	1117	83
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	933	77	24	690	0	0	1117	55
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					46.0	46.0	38.0	38.0			38.0	38.0
Effective Green, g (s)					46.0	46.0	38.0	38.0			38.0	38.0
Actuated g/C Ratio					0.51	0.51	0.42	0.42			0.42	0.42
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					846	652	75	1344			1344	539
v/s Ratio Prot								0.22			c0.35	
v/s Ratio Perm					0.56	0.06	0.14					0.04
v/c Ratio					1.10	0.12	0.32	0.51			0.83	0.10
Uniform Delay, d1					22.0	11.4	17.4	19.2			23.1	15.7
Progression Factor					1.33	1.71	1.00	1.00			1.52	2.54
Incremental Delay, d2					52.0	0.1	10.9	1.4			3.4	0.2
Delay (s)					81.3	19.6	28.3	20.6			38.6	40.1
Level of Service					F	B	C	C			D	D
Approach Delay (s)		0.0			75.8			20.8			38.7	
Approach LOS		A			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	647	58	73	960	0	0	725	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.71
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1633	998	1593	3185			1616	972
Flt Permitted					1.00	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)					1633	998	188	3185			1616	972
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	703	63	79	1043	0	0	788	261
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	0	749	26	79	1043	0	0	788	248
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					653	399	92	1574			799	480
v/s Ratio Prot								0.33			c0.49	
v/s Ratio Perm					0.46	0.03	0.42					0.26
v/c Ratio					1.15	0.06	0.86	0.66			0.99	0.52
Uniform Delay, d1					27.0	16.6	20.0	17.1			22.4	15.5
Progression Factor					0.55	0.19	1.00	1.00			0.92	1.07
Incremental Delay, d2					80.9	0.3	60.8	2.2			18.9	1.9
Delay (s)					95.8	3.4	80.8	19.3			39.5	18.4
Level of Service					F	A	F	B			D	B
Approach Delay (s)		0.0			88.7			23.6			34.3	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	458	107	56	1015	0	0	919	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.20	1.00			1.00	
Satd. Flow (perm)					3159	1425	343	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	498	116	61	1103	0	0	999	132
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	599	54	61	1103	0	0	1120	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	232	2158			2121	
v/s Ratio Prot								0.35			c0.36	
v/s Ratio Perm					0.19	0.04	0.18					
v/c Ratio					0.74	0.15	0.26	0.51			0.53	
Uniform Delay, d1					30.8	25.9	5.7	7.1			7.3	
Progression Factor					1.00	1.00	1.00	1.00			1.55	
Incremental Delay, d2					6.1	0.9	2.7	0.9			0.1	
Delay (s)					36.9	26.8	8.4	8.0			11.4	
Level of Service					D	C	A	A			B	
Approach Delay (s)		0.0			35.2			8.0			11.4	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	685	554	253	481	58	73	134	73	200	772	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.92	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.85	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1460	3185	1232	1584	4408		1593	3185	1222	1349	3083	
Flt Permitted	0.42	1.00	1.00	0.22	1.00		0.20	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	646	3185	1232	363	4408		334	3185	1222	936	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	745	602	275	523	63	79	146	79	217	839	98
RTOR Reduction (vph)	0	0	169	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	111	745	433	275	564	0	79	146	58	217	925	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Effective Green, g (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1041	403	337	2197		186	1096	577	228	753	
v/s Ratio Prot		0.23		c0.10	0.13		c0.02	0.05	0.01		c0.30	
v/s Ratio Perm	0.17		c0.35	0.30			0.12		0.03	0.23		
v/c Ratio	0.53	0.72	1.07	0.82	0.26		0.42	0.13	0.10	0.95	1.23	
Uniform Delay, d1	19.1	20.7	23.6	12.1	10.1		17.8	15.8	10.2	26.0	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	4.2	66.2	14.1	0.3		1.6	0.3	0.1	48.3	114.3	
Delay (s)	28.2	24.9	89.8	26.2	10.4		19.3	16.0	10.3	74.3	140.7	
Level of Service	C	C	F	C	B		B	B	B	E	F	
Approach Delay (s)		51.9			15.4			15.4			128.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	613	186	210	607	272	25	89	59	166	1289	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1550	3185	1050	3090	3185	1091	1593	3185	1154	1231	3185	1171
Flt Permitted	0.36	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	581	3185	1050	3090	3185	1091	227	3185	1154	895	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	666	202	228	660	296	27	97	64	180	1401	200
RTOR Reduction (vph)	0	0	80	0	0	107	0	0	16	0	0	46
Lane Group Flow (vph)	162	666	122	228	660	189	27	97	48	180	1401	154
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Effective Green, g (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Actuated g/C Ratio	0.47	0.37	0.37	0.13	0.41	0.41	0.33	0.33	0.46	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	1189	392	408	1309	448	74	1043	530	293	1043	494
v/s Ratio Prot	0.04	c0.21		c0.07	c0.21			0.03	0.01		c0.44	0.03
v/s Ratio Perm	0.17		0.12			0.17	0.12		0.03	0.20		0.10
v/c Ratio	0.45	0.56	0.31	0.56	0.50	0.42	0.36	0.09	0.09	0.61	1.34	0.31
Uniform Delay, d1	14.3	22.3	20.0	36.6	19.7	18.9	23.1	21.0	13.7	25.5	30.2	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.9	2.1	1.7	1.4	2.9	13.3	0.2	0.1	9.3	160.9	0.4
Delay (s)	15.2	24.3	22.1	38.3	21.1	21.8	36.4	21.2	13.8	34.8	191.2	17.7
Level of Service	B	C	C	D	C	C	D	C	B	C	F	B
Approach Delay (s)		22.4			24.6			20.8			155.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	79.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	628	194	182	833	256	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2091
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2091
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	683	211	198	905	278	357
RTOR Reduction (vph)	0	130	0	0	0	22
Lane Group Flow (vph)	683	81	198	905	278	335
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.0	27.0	12.2	42.7	17.5	29.7
Effective Green, g (s)	27.0	27.0	12.2	42.7	17.5	29.7
Actuated g/C Ratio	0.39	0.39	0.17	0.61	0.25	0.42
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228	455	277	1942	772	887
v/s Ratio Prot	c0.21		c0.12	0.28	0.09	c0.07
v/s Ratio Perm		0.07				0.09
v/c Ratio	0.56	0.18	0.71	0.47	0.36	0.38
Uniform Delay, d1	16.8	14.2	27.3	7.4	21.6	13.8
Progression Factor	1.00	1.00	1.06	2.03	1.00	1.00
Incremental Delay, d2	1.8	0.9	3.3	0.3	0.3	0.3
Delay (s)	18.6	15.0	32.2	15.4	21.9	14.1
Level of Service	B	B	C	B	C	B
Approach Delay (s)	17.8			18.4	17.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	654	126	111	930	93	56	258	68	66	1207	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.96	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1132	1476	3185	1116	1526	3023		1558	3185	927
Flt Permitted	0.17	1.00	1.00	0.38	1.00	1.00	0.16	1.00		0.48	1.00	1.00
Satd. Flow (perm)	288	3185	1132	592	3185	1116	255	3023		791	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	711	137	121	1011	101	61	280	74	72	1312	168
RTOR Reduction (vph)	0	0	51	0	0	72	0	33	0	0	0	91
Lane Group Flow (vph)	79	711	86	121	1011	29	61	321	0	72	1312	77
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Effective Green, g (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.36	0.36		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	186	1237	439	170	919	322	91	1088		407	1465	426
v/s Ratio Prot	0.02	c0.22			c0.32			0.11		0.01	c0.41	
v/s Ratio Perm	0.14		0.08	0.20		0.03	0.24			0.07		0.08
v/c Ratio	0.42	0.57	0.20	0.71	1.10	0.09	0.67	0.30		0.18	0.90	0.18
Uniform Delay, d1	16.4	16.8	14.2	22.3	24.9	18.2	18.9	16.0		10.8	17.4	11.1
Progression Factor	1.03	0.78	0.81	0.98	1.02	2.82	1.97	2.31		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.7	0.9	16.9	57.4	0.4	17.0	0.1		0.2	7.5	0.2
Delay (s)	18.4	14.8	12.4	38.8	82.9	51.6	54.2	37.3		11.0	24.8	11.3
Level of Service	B	B	B	D	F	D	D	D		B	C	B
Approach Delay (s)		14.8			76.0			39.8			22.7	
Approach LOS		B			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	602	85	61	819	168	34	371	59	62	591	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1585	3185	1049	1433	3185	1181	1568	4360		1437	2945	
Flt Permitted	0.20	1.00	1.00	0.40	1.00	1.00	0.18	1.00		0.45	1.00	
Satd. Flow (perm)	337	3185	1049	608	3185	1181	300	4360		684	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	654	92	66	890	183	37	403	64	67	642	295
RTOR Reduction (vph)	0	0	14	0	0	76	0	31	0	0	77	0
Lane Group Flow (vph)	133	654	78	66	890	107	37	436	0	67	860	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	1833	603	275	1442	534	94	1370		214	925	
v/s Ratio Prot	c0.04	0.21			c0.28			0.10			c0.29	
v/s Ratio Perm	0.22		0.07	0.11		0.09	0.12			0.10		
v/c Ratio	0.45	0.36	0.13	0.24	0.62	0.20	0.39	0.32		0.31	0.93	
Uniform Delay, d1	8.4	7.9	6.8	11.8	14.5	11.5	18.8	18.3		18.3	23.3	
Progression Factor	1.01	1.18	1.07	1.09	1.15	1.80	1.94	2.17		1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.4	1.5	1.4	0.6	11.5	0.6		3.8	16.8	
Delay (s)	9.5	9.8	7.7	14.3	18.1	21.3	47.9	40.3		22.0	40.1	
Level of Service	A	A	A	B	B	C	D	D		C	D	
Approach Delay (s)		9.5			18.4			40.9			38.9	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	543	84	42	684	7	0	0	0	88	1186	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1582	3185	1249	1513	3175						4545	1255
Flt Permitted	0.21	1.00	1.00	0.43	1.00						1.00	1.00
Satd. Flow (perm)	348	3185	1249	684	3175						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	590	91	46	743	8	0	0	0	96	1289	412
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	82	590	70	46	750	0	0	0	0	0	1385	394
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	263	1446	567	222	1034						1785	600
v/s Ratio Prot	0.03	0.19			c0.24							c0.06
v/s Ratio Perm	0.11		0.06	0.07							0.30	0.26
v/c Ratio	0.31	0.41	0.12	0.21	0.73						0.78	0.66
Uniform Delay, d1	12.0	12.8	11.0	17.1	20.8						18.6	13.9
Progression Factor	1.49	1.43	1.74	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	0.8	0.4	2.1	4.4						3.4	2.6
Delay (s)	18.5	19.1	19.7	19.2	25.3						21.9	16.5
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		19.1			24.9			0.0			20.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	847	225	218	800	126	236	622	244	143	357	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.94	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1522	3185	1097	1593	4369		1552	3185	1229	1497	3045	
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.40	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	436	3185	1097	218	4369		648	3185	1229	622	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	921	245	237	870	137	257	676	265	155	388	62
RTOR Reduction (vph)	0	0	151	0	24	0	0	0	15	0	14	0
Lane Group Flow (vph)	239	921	94	237	983	0	257	676	250	155	436	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	1079	371	205	1966		327	1362	621	210	1031	
v/s Ratio Prot		0.29		c0.09	0.23		c0.04	0.21	0.03		0.14	
v/s Ratio Perm	c0.55		0.09	0.43			c0.29		0.17	0.25		
v/c Ratio	1.63	0.85	0.25	1.16	0.50		0.79	0.50	0.40	0.74	0.42	
Uniform Delay, d1	29.8	27.7	21.5	19.9	17.6		21.8	18.7	13.8	26.2	23.0	
Progression Factor	1.00	1.00	1.00	2.38	0.77		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	310.5	8.6	1.6	99.2	0.6		11.7	1.3	0.4	20.6	1.3	
Delay (s)	340.2	36.3	23.1	146.5	14.2		33.6	20.0	14.2	46.8	24.2	
Level of Service	F	D	C	F	B		C	C	B	D	C	
Approach Delay (s)		85.7			39.4			21.6			30.0	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	791	152	221	967	537	36	638	137	65	918	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1590	3185	1190	3090	3185	1248	1528	3185	1316	1549	3185	1121
Flt Permitted	0.13	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	216	3185	1190	3090	3185	1248	211	3185	1316	433	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	860	165	240	1051	584	39	693	149	71	998	162
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	295	860	117	240	1051	536	39	693	132	71	998	145
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Effective Green, g (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Actuated g/C Ratio	0.49	0.39	0.39	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	1256	469	309	1256	492	71	1079	577	146	1079	491
v/s Ratio Prot	c0.12	0.27		0.08	0.33			0.22	0.02		c0.31	0.03
v/s Ratio Perm	c0.48		0.10			0.43	0.18		0.08	0.16		0.10
v/c Ratio	1.21	0.68	0.25	0.78	0.84	1.09	0.55	0.64	0.23	0.49	0.92	0.30
Uniform Delay, d1	20.1	22.6	18.3	39.5	24.6	27.2	24.2	25.1	15.8	23.5	28.6	16.3
Progression Factor	1.75	0.87	1.06	0.80	1.09	1.08	1.09	1.10	1.02	1.00	1.00	1.00
Incremental Delay, d2	116.2	2.0	0.8	9.1	5.3	62.4	25.0	2.7	0.2	11.1	14.4	0.3
Delay (s)	151.3	21.7	20.3	40.9	32.0	91.9	51.4	30.2	16.3	34.7	43.1	16.6
Level of Service	F	C	C	D	C	F	D	C	B	C	D	B
Approach Delay (s)		50.5			51.8			28.8			39.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	874	79	88	987	717	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2378
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2378
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	950	86	96	1073	779	1110
RTOR Reduction (vph)	0	54	0	0	0	10
Lane Group Flow (vph)	950	32	96	1073	779	1100
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	33.6	33.6	16.0	53.1	27.1	43.1
Effective Green, g (s)	33.6	33.6	16.0	53.1	27.1	43.1
Actuated g/C Ratio	0.37	0.37	0.18	0.59	0.30	0.48
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1189	391	283	1879	930	1138
v/s Ratio Prot	c0.30		0.06	0.34	0.25	c0.17
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.80	0.08	0.34	0.57	0.84	0.97
Uniform Delay, d1	25.2	18.2	32.4	11.4	29.4	22.7
Progression Factor	1.53	3.59	0.78	1.87	1.00	1.00
Incremental Delay, d2	4.5	0.3	0.5	0.9	6.7	18.9
Delay (s)	43.1	65.8	25.8	22.1	36.1	41.6
Level of Service	D	E	C	C	D	D
Approach Delay (s)	45.0			22.4	39.3	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1121	42	57	709	70	92	762	88	97	962	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.94	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	3185	1143	1551	3185	1196	1493	3107		1591	3185	976
Flt Permitted	0.15	1.00	1.00	0.17	1.00	1.00	0.22	1.00		0.15	1.00	1.00
Satd. Flow (perm)	255	3185	1143	281	3185	1196	347	3107		245	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1218	46	62	771	76	100	828	96	105	1046	179
RTOR Reduction (vph)	0	0	27	0	0	56	0	10	0	0	0	95
Lane Group Flow (vph)	299	1218	19	62	771	20	100	914	0	105	1046	84
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	37.3	37.3	37.3	23.2	23.2	23.2	32.7	32.7		42.1	42.1	42.1
Effective Green, g (s)	37.3	37.3	37.3	23.2	23.2	23.2	32.7	32.7		42.1	42.1	42.1
Actuated g/C Ratio	0.41	0.41	0.41	0.26	0.26	0.26	0.36	0.36		0.47	0.47	0.47
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	270	1320	473	72	821	308	126	1128		210	1489	456
v/s Ratio Prot	c0.14	0.38			0.24			c0.29		0.04	c0.33	
v/s Ratio Perm	c0.32		0.02	0.22		0.02	0.29			0.20		0.09
v/c Ratio	1.11	0.92	0.04	0.86	0.94	0.06	0.79	0.81		0.50	0.70	0.18
Uniform Delay, d1	22.2	25.0	15.7	31.9	32.7	25.2	25.6	25.8		16.1	19.0	13.9
Progression Factor	1.06	1.05	0.86	0.88	0.92	2.96	1.52	1.49		1.00	1.00	1.00
Incremental Delay, d2	70.0	6.3	0.1	58.4	15.7	0.3	19.3	2.9		1.9	1.5	0.2
Delay (s)	93.5	32.7	13.6	86.5	45.6	74.8	58.1	41.5		18.0	20.5	14.1
Level of Service	F	C	B	F	D	E	E	D		B	C	B
Approach Delay (s)		43.7			50.8			43.1			19.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	1204	85	49	791	87	66	621	138	89	470	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00	1.00	0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3185	834	1496	3185	1050	1544	4287		1512	2927	
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.21	1.00		0.23	1.00	
Satd. Flow (perm)	311	3185	834	309	3185	1050	347	4287		374	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1309	92	53	860	95	72	675	150	97	511	217
RTOR Reduction (vph)	0	0	24	0	0	56	0	18	0	0	52	0
Lane Group Flow (vph)	292	1309	68	53	860	39	72	807	0	97	676	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	376	1886	493	126	1298	428	111	1381		120	943	
v/s Ratio Prot	c0.12	0.41			0.27			0.19			0.23	
v/s Ratio Perm	c0.34		0.08	0.17		0.04	0.21			c0.26		
v/c Ratio	0.78	0.69	0.14	0.42	0.66	0.09	0.65	0.58		0.81	0.72	
Uniform Delay, d1	12.7	12.7	8.1	19.1	21.6	16.4	26.1	25.5		28.0	26.9	
Progression Factor	1.10	1.63	1.59	0.63	0.64	0.67	1.06	1.10		1.00	1.00	
Incremental Delay, d2	6.7	1.4	0.4	8.3	2.2	0.3	25.0	1.8		42.4	4.7	
Delay (s)	20.7	22.1	13.3	20.4	16.0	11.3	52.8	29.8		70.4	31.5	
Level of Service	C	C	B	C	B	B	D	C		E	C	
Approach Delay (s)		21.4			15.8			31.7			36.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1219	57	40	736	6	0	0	0	96	627	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.97	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1580	3185	1027	1542	3175						4468	1266
Flt Permitted	0.22	1.00	1.00	0.15	1.00						0.99	1.00
Satd. Flow (perm)	366	3185	1027	243	3175						4468	1266
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1325	62	43	800	7	0	0	0	104	682	213
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	122	1325	47	43	806	0	0	0	0	0	786	195
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Effective Green, g (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Actuated g/C Ratio	0.53	0.53	0.53	0.40	0.40						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	309	1691	545	98	1280						1563	562
v/s Ratio Prot	0.04	c0.42			0.25							0.03
v/s Ratio Perm	0.17		0.05	0.18							0.18	0.12
v/c Ratio	0.39	0.78	0.09	0.44	0.63						0.50	0.35
Uniform Delay, d1	12.2	16.9	10.4	19.5	21.5						23.1	16.4
Progression Factor	1.33	1.11	1.72	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	2.7	0.2	13.6	2.4						1.2	0.4
Delay (s)	16.8	21.5	18.0	33.1	23.8						24.2	16.8
Level of Service	B	C	B	C	C						C	B
Approach Delay (s)		21.0			24.3			0.0			22.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix K
Horizon Year (2040) With 9th Street Alternative
HCM Analysis Output

With Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	685	554	253	481	58	73	134	73	200	772	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.92	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.85	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1460	3185	1232	1584	4408		1593	3185	1222	1349	3083	
Flt Permitted	0.42	1.00	1.00	0.22	1.00		0.20	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	646	3185	1232	363	4408		334	3185	1222	936	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	745	602	275	523	63	79	146	79	217	839	98
RTOR Reduction (vph)	0	0	169	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	111	745	433	275	564	0	79	146	58	217	925	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Effective Green, g (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1041	403	337	2197		186	1096	577	228	753	
v/s Ratio Prot		0.23		c0.10	0.13		c0.02	0.05	0.01		c0.30	
v/s Ratio Perm	0.17		c0.35	0.30			0.12		0.03	0.23		
v/c Ratio	0.53	0.72	1.07	0.82	0.26		0.42	0.13	0.10	0.95	1.23	
Uniform Delay, d1	19.1	20.7	23.6	12.1	10.1		17.8	15.8	10.2	26.0	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	4.2	66.2	14.1	0.3		1.6	0.3	0.1	48.3	114.3	
Delay (s)	28.2	24.9	89.8	26.2	10.4		19.3	16.0	10.3	74.3	140.7	
Level of Service	C	C	F	C	B		B	B	B	E	F	
Approach Delay (s)		51.9			15.4			15.4			128.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	613	186	249	607	272	25	89	98	166	1289	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.71	1.00	1.00	0.74	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1553	3185	1010	3090	3185	1055	1593	3185	1425	1191	3185	1126
Flt Permitted	0.31	1.00	1.00	0.95	1.00	1.00	0.12	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	514	3185	1010	3090	3185	1055	197	3185	1425	866	3185	1126
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	666	202	271	660	296	27	97	107	180	1401	200
RTOR Reduction (vph)	0	0	152	0	0	91	0	0	96	0	0	51
Lane Group Flow (vph)	162	666	50	271	660	205	27	97	11	180	1401	149
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	31.6	24.6	24.6	10.9	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Effective Green, g (s)	31.6	24.6	24.6	10.9	38.5	38.5	34.0	34.0	10.0	34.0	34.0	41.0
Actuated g/C Ratio	0.32	0.25	0.25	0.11	0.38	0.38	0.34	0.34	0.10	0.34	0.34	0.41
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	783	248	336	1226	406	66	1082	142	294	1082	461
v/s Ratio Prot	0.05	c0.21		c0.09	c0.21			0.03	0.01		c0.44	0.02
v/s Ratio Perm	0.17		0.05			0.19	0.14			0.21		0.11
v/c Ratio	0.69	0.85	0.20	0.81	0.54	0.50	0.41	0.09	0.08	0.61	1.29	0.32
Uniform Delay, d1	27.0	35.9	29.9	43.5	23.9	23.5	25.3	22.5	40.8	27.5	33.0	20.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.2	11.2	1.8	13.2	0.5	1.0	17.7	0.2	0.2	9.2	139.6	0.4
Delay (s)	35.1	47.2	31.7	56.7	24.3	24.5	43.0	22.6	41.0	36.7	172.6	20.5
Level of Service	D	D	C	E	C	C	D	C	D	D	F	C
Approach Delay (s)		42.2			31.5			33.5			141.8	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	80.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	667	194	182	872	256	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2091
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2091
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	725	211	198	948	278	357
RTOR Reduction (vph)	0	130	0	0	0	18
Lane Group Flow (vph)	725	81	198	948	278	339
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.0	27.0	12.2	42.7	17.5	29.7
Effective Green, g (s)	27.0	27.0	12.2	42.7	17.5	29.7
Actuated g/C Ratio	0.39	0.39	0.17	0.61	0.25	0.42
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228	455	277	1942	772	887
v/s Ratio Prot	c0.23		c0.12	0.30	0.09	c0.07
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.59	0.18	0.71	0.49	0.36	0.38
Uniform Delay, d1	17.1	14.2	27.3	7.6	21.6	13.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.9	8.5	0.9	0.3	0.3
Delay (s)	19.2	15.0	35.7	8.5	21.9	14.1
Level of Service	B	B	D	A	C	B
Approach Delay (s)	18.3			13.2	17.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	693	126	111	930	93	95	258	29	66	1207	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.73	1.00	0.99		1.00	1.00	0.62
Flpb, ped/bikes	1.00	1.00	1.00	0.92	1.00	1.00	1.00	1.00		0.96	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3185	1053	1463	3185	1034	1593	3097		1532	3185	885
Flt Permitted	0.13	1.00	1.00	0.32	1.00	1.00	0.95	1.00		0.56	1.00	1.00
Satd. Flow (perm)	222	3185	1053	490	3185	1034	1593	3097		907	3185	885
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	753	137	121	1011	101	103	280	32	72	1312	168
RTOR Reduction (vph)	0	0	85	0	0	70	0	9	0	0	0	86
Lane Group Flow (vph)	79	753	52	121	1011	31	103	303	0	72	1312	82
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Effective Green, g (s)	34.2	34.2	34.2	27.2	27.2	27.2	9.0	38.2		37.2	33.2	33.2
Actuated g/C Ratio	0.38	0.38	0.38	0.30	0.30	0.30	0.10	0.42		0.41	0.37	0.37
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	145	1210	400	148	962	312	159	1314		402	1174	326
v/s Ratio Prot	0.02	c0.24			c0.32		c0.06	0.10		0.01	c0.41	
v/s Ratio Perm	0.18		0.05	0.25		0.03				0.07		0.09
v/c Ratio	0.54	0.62	0.13	0.82	1.05	0.10	0.65	0.23		0.18	1.12	0.25
Uniform Delay, d1	21.7	22.7	18.2	29.1	31.4	22.6	39.0	16.5		16.3	28.4	19.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.1	2.4	0.7	37.4	43.3	0.6	8.8	0.1		0.2	64.8	0.4
Delay (s)	25.8	25.1	18.9	66.5	74.7	23.2	47.7	16.6		16.5	93.2	20.2
Level of Service	C	C	B	E	E	C	D	B		B	F	C
Approach Delay (s)		24.3			69.7			24.3			81.7	
Approach LOS		C			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	602	85	61	819	168	34	371	59	62	591	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1585	3185	1049	1433	3185	1181	1568	4360		1437	2945	
Flt Permitted	0.20	1.00	1.00	0.40	1.00	1.00	0.18	1.00		0.45	1.00	
Satd. Flow (perm)	337	3185	1049	608	3185	1181	300	4360		684	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	654	92	66	890	183	37	403	64	67	642	295
RTOR Reduction (vph)	0	0	14	0	0	76	0	31	0	0	77	0
Lane Group Flow (vph)	133	654	78	66	890	107	37	436	0	67	860	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	1833	603	275	1442	534	94	1370		214	925	
v/s Ratio Prot	c0.04	0.21			c0.28			0.10			c0.29	
v/s Ratio Perm	0.22		0.07	0.11		0.09	0.12			0.10		
v/c Ratio	0.45	0.36	0.13	0.24	0.62	0.20	0.39	0.32		0.31	0.93	
Uniform Delay, d1	8.4	7.9	6.8	11.8	14.5	11.5	18.8	18.3		18.3	23.3	
Progression Factor	1.00	1.00	1.00	1.09	1.15	1.80	1.94	2.17		1.00	1.00	
Incremental Delay, d2	1.1	0.5	0.4	1.5	1.4	0.6	11.5	0.6		3.8	16.8	
Delay (s)	9.5	8.5	7.3	14.3	18.1	21.3	47.9	40.3		22.0	40.1	
Level of Service	A	A	A	B	B	C	D	D		C	D	
Approach Delay (s)		8.5			18.4			40.9			38.9	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	543	84	42	684	7	0	0	0	88	1186	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1582	3185	1249	1513	3175						4545	1255
Flt Permitted	0.21	1.00	1.00	0.43	1.00						1.00	1.00
Satd. Flow (perm)	348	3185	1249	684	3175						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	590	91	46	743	8	0	0	0	96	1289	412
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	82	590	70	46	750	0	0	0	0	0	1385	394
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	263	1446	567	222	1034						1785	600
v/s Ratio Prot	0.03	0.19			c0.24							c0.06
v/s Ratio Perm	0.11		0.06	0.07							0.30	0.26
v/c Ratio	0.31	0.41	0.12	0.21	0.73						0.78	0.66
Uniform Delay, d1	12.0	12.8	11.0	17.1	20.8						18.6	13.9
Progression Factor	1.25	1.18	1.42	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	0.8	0.4	2.1	4.4						3.4	2.6
Delay (s)	15.7	15.9	16.1	19.2	25.3						21.9	16.5
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		15.9			24.9			0.0			20.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	5	16	53	60	84	12	64	6	41	1310	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		0.93	1.00	1.00
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2749		1593	2873		1593	3115		1474	3185	1300
Flt Permitted	0.95	1.00		0.95	1.00		0.12	1.00		0.70	1.00	1.00
Satd. Flow (perm)	1593	2749		1593	2873		206	3115		1093	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	5	17	58	65	91	13	70	7	45	1424	357
RTOR Reduction (vph)	0	12	0	0	68	0	0	4	0	0	0	90
Lane Group Flow (vph)	30	10	0	58	88	0	13	73	0	45	1424	267
Confl. Peds. (#/hr)			21			9	78		71	71		78
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Effective Green, g (s)	5.0	19.7		3.0	17.7		32.6	32.6		32.6	32.6	37.6
Actuated g/C Ratio	0.07	0.28		0.04	0.25		0.47	0.47		0.47	0.47	0.54
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	113	773		68	726		95	1450		509	1483	698
v/s Ratio Prot	0.02	0.00		c0.04	c0.03			0.02			c0.45	0.03
v/s Ratio Perm							0.06			0.04		0.18
v/c Ratio	0.27	0.01		0.85	0.12		0.14	0.05		0.09	0.96	0.38
Uniform Delay, d1	30.8	18.1		33.3	20.2		10.7	10.2		10.4	18.1	9.4
Progression Factor	1.00	1.00		1.00	1.00		1.52	1.50		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0		60.8	0.1		3.0	0.1		0.3	15.6	0.4
Delay (s)	32.0	18.1		94.1	20.2		19.2	15.4		10.8	33.7	9.8
Level of Service	C	B		F	C		B	B		B	C	A
Approach Delay (s)		26.2			40.2			16.0			28.5	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	439	471	0	111	31	86	400	57	22	1243	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.93		0.98		1.00	0.98		1.00	1.00	0.87
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.91	1.00	1.00
Frt		1.00	0.85		0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1326		3012		1574	3048		1449	3185	1239
Flt Permitted		1.00	1.00		1.00		0.12	1.00		0.46	1.00	1.00
Satd. Flow (perm)		1676	1326		3012		203	3048		696	3185	1239
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	477	512	0	121	34	93	435	62	24	1351	148
RTOR Reduction (vph)	0	0	23	0	21	0	0	16	0	0	0	79
Lane Group Flow (vph)	0	477	489	0	134	0	93	481	0	24	1351	69
Confl. Peds. (#/hr)			59	59		91	150		136	136		150
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Effective Green, g (s)		27.0	27.0		27.0		32.6	32.6		32.6	32.6	32.6
Actuated g/C Ratio		0.39	0.39		0.39		0.47	0.47		0.47	0.47	0.47
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		646	511		1161		94	1419		324	1483	577
v/s Ratio Prot		0.28			0.04			0.16			0.42	
v/s Ratio Perm			c0.37				c0.46			0.03		0.06
v/c Ratio		0.74	0.96		0.12		0.99	0.34		0.07	0.91	0.12
Uniform Delay, d1		18.5	20.9		13.8		18.5	11.9		10.3	17.4	10.6
Progression Factor		1.00	1.00		1.65		1.38	1.44		1.00	1.00	1.00
Incremental Delay, d2		7.4	30.5		0.2		78.9	0.5		0.4	10.0	0.4
Delay (s)		25.9	51.5		22.9		104.5	17.6		10.8	27.3	11.0
Level of Service		C	D		C		F	B		B	C	B
Approach Delay (s)		39.1			22.9			31.3			25.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	617	82	0	427	44	58	387	143	0	692	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.80		1.00	0.93	1.00	0.94			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.96			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1142		1676	1320	1593	2884			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1142		1676	1320	216	2884			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	671	89	0	464	48	63	421	155	0	752	0
RTOR Reduction (vph)	0	0	57	0	0	31	0	10	0	0	0	0
Lane Group Flow (vph)	0	671	32	0	464	17	63	566	0	0	752	0
Confl. Peds. (#/hr)			104			60	68		154	154		68
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		25.0	25.0		25.0	25.0	34.6	34.6			25.6	
Effective Green, g (s)		25.0	25.0		25.0	25.0	34.6	34.6			25.6	
Actuated g/C Ratio		0.36	0.36		0.36	0.36	0.49	0.49			0.37	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		598	407		598	471	177	1425			590	
v/s Ratio Prot		c0.40			0.28		0.02	c0.20			c0.47	
v/s Ratio Perm			0.03			0.01	0.16					
v/c Ratio		1.12	0.08		0.78	0.04	0.36	0.40			1.27	
Uniform Delay, d1		22.5	14.9		20.0	14.7	28.0	11.1			22.2	
Progression Factor		0.79	1.52		1.03	1.00	1.83	1.57			0.49	
Incremental Delay, d2		73.2	0.3		7.2	0.1	1.1	0.2			131.4	
Delay (s)		91.0	22.9		27.7	14.8	52.3	17.6			142.4	
Level of Service		F	C		C	B	D	B			F	
Approach Delay (s)		83.0			26.5			21.0			142.4	
Approach LOS		F			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	74.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	394	345	118	394	0	0	0	0	30	1272	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.83	1.00	1.00					1.00	1.00	0.48
Flpb, ped/bikes		1.00	1.00	0.94	1.00					0.85	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1178	1490	1676					1347	3185	677
Flt Permitted		1.00	1.00	0.30	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1178	465	1676					1347	3185	677
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	428	375	128	428	0	0	0	0	33	1383	110
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	51
Lane Group Flow (vph)	0	428	360	128	428	0	0	0	0	33	1383	59
Confl. Peds. (#/hr)			133	133						75		279
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Effective Green, g (s)		23.2	23.2	23.2	23.2					37.5	37.5	37.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33					0.54	0.54	0.54
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		555	390	154	555					721	1706	362
v/s Ratio Prot		0.26			0.26						c0.43	
v/s Ratio Perm			c0.31	0.28						0.02		0.09
v/c Ratio		0.77	0.92	0.83	0.77					0.05	0.81	0.16
Uniform Delay, d1		21.0	22.5	21.6	21.0					7.7	13.3	8.3
Progression Factor		0.85	0.89	1.00	1.00					0.28	0.31	0.00
Incremental Delay, d2		4.3	15.4	38.3	10.0					0.1	3.2	0.7
Delay (s)		22.1	35.4	59.9	31.0					2.3	7.4	0.7
Level of Service		C	D	E	C					A	A	A
Approach Delay (s)		28.3			37.6			0.0			6.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	25	62	21	66	1241	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.85	1.00	1.00	1.00	0.70
Flpb, ped/bikes	0.96	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1528	2128	1544	3185	3185	993
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1528	2128	239	3185	3185	993
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	67	23	72	1349	201
RTOR Reduction (vph)	0	5	0	0	0	45
Lane Group Flow (vph)	27	62	23	72	1349	156
Confl. Peds. (#/hr)	48	96	157			157
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	16.3	16.3	44.0	44.0	44.0	44.0
Effective Green, g (s)	16.3	16.3	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.23	0.23	0.63	0.63	0.63	0.63
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	355	495	150	2002	2002	624
v/s Ratio Prot				0.02	c0.42	
v/s Ratio Perm	0.02	c0.03	0.10			0.16
v/c Ratio	0.08	0.13	0.15	0.04	0.67	0.25
Uniform Delay, d1	21.0	21.2	5.3	4.9	8.4	5.7
Progression Factor	1.00	1.00	1.00	1.00	0.18	0.00
Incremental Delay, d2	0.1	0.1	2.2	0.0	0.9	0.5
Delay (s)	21.1	21.3	7.5	5.0	2.4	0.5
Level of Service	C	C	A	A	A	A
Approach Delay (s)	21.3			5.6	2.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1562	189	64	499	0	0	1216	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.85
Flpb, ped/bikes				0.92	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1471	3110		1593	3185			3185	1218
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1471	3110		224	3185			3185	1218
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1698	205	70	542	0	0	1322	252
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	117	1890	0	70	542	0	0	1322	249
Confl. Peds. (#/hr)				73		57	110					110
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				34.0	34.0		30.0	30.0			30.0	30.0
Effective Green, g (s)				34.0	34.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio				0.49	0.49		0.43	0.43			0.43	0.43
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				714	1510		96	1365			1365	522
v/s Ratio Prot					c0.61			0.17			c0.42	
v/s Ratio Perm				0.08			0.31					0.20
v/c Ratio				0.16	1.25		0.73	0.40			0.97	0.48
Uniform Delay, d1				10.1	18.0		16.6	13.8			19.5	14.4
Progression Factor				2.01	1.82		0.98	0.91			0.89	0.79
Incremental Delay, d2				0.0	113.7		34.8	0.8			9.2	1.2
Delay (s)				20.3	146.5		51.2	13.3			26.6	12.4
Level of Service				C	F		D	B			C	B
Approach Delay (s)		0.0			139.2			17.6			24.3	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	16	1776	64	89	484	0	0	346	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	0.91
Flpb, ped/bikes				0.89	1.00	1.00		0.99			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				1411	3185	1314		3142			1616	1254
Flt Permitted				0.95	1.00	1.00		0.81			1.00	1.00
Satd. Flow (perm)				1411	3185	1314		2554			1616	1254
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	17	1930	70	97	526	0	0	376	341
RTOR Reduction (vph)	0	0	0	0	0	42	0	0	0	0	0	80
Lane Group Flow (vph)	0	0	0	17	1930	28	0	623	0	0	376	261
Confl. Peds. (#/hr)				62		61	55					55
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				28.2	28.2	28.2		32.5			32.5	32.5
Effective Green, g (s)				28.2	28.2	28.2		32.5			32.5	32.5
Actuated g/C Ratio				0.40	0.40	0.40		0.46			0.46	0.46
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				568	1283	529		1185			750	582
v/s Ratio Prot					c0.61						0.23	
v/s Ratio Perm				0.01		0.02		c0.24				0.21
v/c Ratio				0.03	1.50	0.05		0.53			0.50	0.45
Uniform Delay, d1				12.6	20.9	12.8		13.3			13.1	12.7
Progression Factor				1.90	1.73	5.16		0.88			0.26	0.22
Incremental Delay, d2				0.0	228.0	0.0		0.3			0.2	0.2
Delay (s)				24.0	264.2	65.8		12.1			3.7	3.0
Level of Service				C	F	E		B			A	A
Approach Delay (s)		0.0			255.2			12.1			3.3	
Approach LOS		A			F			B			A	

Intersection Summary			
HCM 2000 Control Delay	156.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	485	1494	0	0	0	0	0	1184	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.87
Flpb, ped/bikes				0.91	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1447	3185						4577	1237
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1447	3185						4577	1237
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	527	1624	0	0	0	0	0	1287	201
RTOR Reduction (vph)	0	0	0	15	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	512	1624	0	0	0	0	0	1287	185
Confl. Peds. (#/hr)				74								99
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.2	30.2						30.3	30.3
Effective Green, g (s)				30.2	30.2						30.3	30.3
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				624	1374						1981	535
v/s Ratio Prot					c0.51						c0.28	
v/s Ratio Perm				0.35								0.15
v/c Ratio				0.82	1.18						0.65	0.35
Uniform Delay, d1				17.5	19.9						15.7	13.2
Progression Factor				1.00	1.00						0.88	0.96
Incremental Delay, d2				11.6	89.6						0.9	0.9
Delay (s)				29.1	109.5						14.7	13.6
Level of Service				C	F						B	B
Approach Delay (s)		0.0			89.8			0.0			14.6	
Approach LOS		A			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	59.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	634	1428	0	0	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	689	1552	0	0	48	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	689	1552	0	0	48	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	39.5	59.2			4.3	
Effective Green, g (s)	39.5	59.2			4.3	
Actuated g/C Ratio	0.56	0.85			0.06	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1743	5742			189	
v/s Ratio Prot	c0.22	c0.23				
v/s Ratio Perm					c0.02	
v/c Ratio	0.40	0.27			0.25	
Uniform Delay, d1	8.6	1.1			31.3	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.7	0.1			0.7	
Delay (s)	9.2	1.2			32.0	
Level of Service	A	A			C	
Approach Delay (s)		3.7	0.0		32.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	969	185	0	0	0	0	743	112	60	234	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.92					0.99		1.00	1.00	
Flpb, ped/bikes	0.69	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1106	5767	1316					4446		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1106	5767	1316					4446		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	258	1053	201	0	0	0	0	808	122	65	254	0
RTOR Reduction (vph)	0	0	122	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	258	1053	79	0	0	0	0	904	0	65	254	0
Confl. Peds. (#/hr)	313		61						50			
Confl. Bikes (#/hr)			3									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Effective Green, g (s)	27.5	27.5	27.5					25.0		3.6	32.6	
Actuated g/C Ratio	0.39	0.39	0.39					0.36		0.05	0.47	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	434	2265	517					1587		158	780	
v/s Ratio Prot		0.18						c0.20		0.02	c0.15	
v/s Ratio Perm	c0.23		0.06									
v/c Ratio	0.59	0.46	0.15					0.57		0.41	0.33	
Uniform Delay, d1	16.8	15.8	13.7					18.2		32.2	11.8	
Progression Factor	1.21	1.17	2.38					1.09		1.00	1.00	
Incremental Delay, d2	5.8	0.7	0.6					1.3		1.7	1.1	
Delay (s)	26.2	19.1	33.2					21.0		33.9	12.9	
Level of Service	C	B	C					C		C	B	
Approach Delay (s)		22.2			0.0			21.0			17.2	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	152	840	152	0	0	0	0	523	80	162	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.94	1.00	
Frt		0.98						0.98		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		5471						3049		1500	3185	
Flt Permitted		0.99						1.00		0.33	1.00	
Satd. Flow (perm)		5471						3049		529	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	913	165	0	0	0	0	568	87	176	1276	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	17	0	0	0	0
Lane Group Flow (vph)	0	1231	0	0	0	0	0	638	0	176	1276	0
Confl. Peds. (#/hr)	120		72						151	151		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		31.0						31.0		31.0	31.0	
Effective Green, g (s)		31.0						31.0		31.0	31.0	
Actuated g/C Ratio		0.44						0.44		0.44	0.44	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2422						1350		234	1410	
v/s Ratio Prot								0.21			c0.40	
v/s Ratio Perm		0.22								0.33		
v/c Ratio		0.51						0.47		0.75	0.90	
Uniform Delay, d1		14.0						13.7		16.3	18.1	
Progression Factor		1.17						1.62		0.92	0.96	
Incremental Delay, d2		0.7						1.1		9.1	4.6	
Delay (s)		17.1						23.3		24.1	22.1	
Level of Service		B						C		C	C	
Approach Delay (s)		17.1			0.0			23.3			22.3	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	892	81	0	0	0	0	490	99	0	446	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.95			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5405						2939			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5405						2939			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	970	88	0	0	0	0	533	108	0	485	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	1139	0	0	0	0	0	621	0	0	485	0
Confl. Peds. (#/hr)	217		174						257	257		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		35.0						24.7			24.7	
Effective Green, g (s)		35.0						24.7			24.7	
Actuated g/C Ratio		0.50						0.35			0.35	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2702						1037			570	
v/s Ratio Prot								0.21			c0.30	
v/s Ratio Perm		0.21										
v/c Ratio		0.42						0.60			0.85	
Uniform Delay, d1		11.1						18.6			20.9	
Progression Factor		1.84						1.17			0.98	
Incremental Delay, d2		0.4						2.0			14.0	
Delay (s)		20.8						23.7			34.6	
Level of Service		C						C			C	
Approach Delay (s)		20.8			0.0			23.7			34.6	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	728	181	0	0	0	0	0	0	134	1339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.99	
Frt		0.97									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5396									4508	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5396									4508	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	791	197	0	0	0	0	0	0	146	1455	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	18	0
Lane Group Flow (vph)	0	986	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			121							82		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.2									25.5	
Effective Green, g (s)		35.2									25.5	
Actuated g/C Ratio		0.50									0.36	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2713									1642	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.35	
v/c Ratio		0.36									0.96	
Uniform Delay, d1		10.6									21.8	
Progression Factor		1.73									0.91	
Incremental Delay, d2		0.3									11.9	
Delay (s)		18.6									31.8	
Level of Service		B									C	
Approach Delay (s)		18.6			0.0			0.0			31.8	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	410	1319	226	0	0	0	0	850	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.92						1.00	0.68
Flpb, ped/bikes				0.74	0.99						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				894	5635						4577	969
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				894	5635						4577	969
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	446	1434	246	0	0	0	0	924	222
RTOR Reduction (vph)	0	0	0	35	55	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	313	1723	0	0	0	0	0	924	204
Confl. Peds. (#/hr)				199		404						283
Confl. Bikes (#/hr)						1						
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				30.0	30.0						30.0	30.0
Effective Green, g (s)				30.0	30.0						30.0	30.0
Actuated g/C Ratio				0.43	0.43						0.43	0.43
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				383	2415						1961	415
v/s Ratio Prot											0.20	
v/s Ratio Perm				c0.35	0.31							c0.21
v/c Ratio				0.82	0.71						0.47	0.49
Uniform Delay, d1				17.6	16.5						14.3	14.5
Progression Factor				0.93	0.91						1.00	1.00
Incremental Delay, d2				10.8	1.1						0.8	4.1
Delay (s)				27.1	16.0						15.1	18.6
Level of Service				C	B						B	B
Approach Delay (s)		0.0			17.8			0.0			15.8	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1384	120	399	851	0	0	0	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5535		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5535		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1504	130	434	925	0	0	0	229
RTOR Reduction (vph)	0	0	0	0	20	0	321	0	0	0	0	211
Lane Group Flow (vph)	0	0	0	0	1614	0	113	925	0	0	0	18
Confl. Peds. (#/hr)						438						
Confl. Bikes (#/hr)						2						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					18.9		18.2	33.6				5.5
Effective Green, g (s)					18.9		18.2	33.6				5.5
Actuated g/C Ratio					0.27		0.26	0.48				0.08
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					1494		803	2196				197
v/s Ratio Prot					c0.29		0.04	c0.20				
v/s Ratio Perm												c0.01
v/c Ratio					1.08		0.14	0.42				0.09
Uniform Delay, d1					25.6		19.9	11.9				29.9
Progression Factor					1.56		1.42	1.00				1.00
Incremental Delay, d2					45.5		0.3	0.5				0.2
Delay (s)					85.3		28.5	12.4				30.1
Level of Service					F		C	B				C
Approach Delay (s)		0.0			85.3			17.5			30.1	
Approach LOS		A			F			B			C	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	1389	97	64	450	0	0	1058	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.67
Flpb, ped/bikes				0.63	1.00		0.97	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1004	5588		1537	3185			3185	960
Flt Permitted				0.95	1.00		0.13	1.00			1.00	1.00
Satd. Flow (perm)				1004	5588		209	3185			3185	960
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	1510	105	70	489	0	0	1150	276
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	99	1600	0	70	489	0	0	1150	259
Confl. Peds. (#/hr)				587		389	308					308
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				29.0	29.0		31.2	31.2			31.2	31.2
Effective Green, g (s)				29.0	29.0		31.2	31.2			31.2	31.2
Actuated g/C Ratio				0.41	0.41		0.45	0.45			0.45	0.45
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				415	2315		93	1419			1419	427
v/s Ratio Prot					c0.29			0.15			c0.36	
v/s Ratio Perm				0.10			0.33					0.27
v/c Ratio				0.24	0.69		0.75	0.34			0.81	0.61
Uniform Delay, d1				13.3	16.8		16.2	12.7			16.8	14.7
Progression Factor				0.26	0.36		1.02	0.89			0.48	0.33
Incremental Delay, d2				1.1	1.4		42.2	0.7			2.5	3.1
Delay (s)				4.6	7.4		58.7	12.0			10.6	8.0
Level of Service				A	A		E	B			B	A
Approach Delay (s)		0.0			7.3			17.8			10.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	24	1376	76	46	691	0	0	344	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.72
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5571			3175			1616	985
Flt Permitted					1.00			0.91			1.00	1.00
Satd. Flow (perm)					5571			2893			1616	985
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	26	1496	83	50	751	0	0	374	114
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1594	0	0	801	0	0	374	97
Confl. Peds. (#/hr)				475		328						224
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					30.0			30.5			30.5	30.5
Effective Green, g (s)					30.0			30.5			30.5	30.5
Actuated g/C Ratio					0.43			0.44			0.44	0.44
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2387			1260			704	429
v/s Ratio Prot											0.23	
v/s Ratio Perm					0.29			c0.28				0.10
v/c Ratio					0.67			0.64			0.53	0.22
Uniform Delay, d1					16.0			15.4			14.5	12.4
Progression Factor					0.69			0.46			0.42	0.23
Incremental Delay, d2					1.4			2.1			1.7	0.7
Delay (s)					12.5			9.2			7.9	3.6
Level of Service					B			A			A	A
Approach Delay (s)		0.0			12.5			9.2			6.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	119	889	0	0	0	0	0	1423	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5733						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5733						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	129	966	0	0	0	0	0	1547	370
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	0	0	0	1082	0	0	0	0	0	1547	339
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					30.3						30.5	30.5
Effective Green, g (s)					30.3						30.5	30.5
Actuated g/C Ratio					0.43						0.44	0.44
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2481						1994	620
v/s Ratio Prot											c0.34	
v/s Ratio Perm					0.19							0.24
v/c Ratio					0.44						0.78	0.55
Uniform Delay, d1					13.9						16.8	14.6
Progression Factor					1.00						1.08	1.03
Incremental Delay, d2					0.6						1.9	2.1
Delay (s)					14.4						20.0	17.3
Level of Service					B						C	B
Approach Delay (s)		0.0			14.4			0.0			19.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1395	262	0	0	0	0	0	0	142	1247	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.70								1.00	
Flpb, ped/bikes		1.00	1.00								0.98	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	1001								5614	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	1001								5614	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1516	285	0	0	0	0	0	0	154	1355	0
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1516	271	0	0	0	0	0	0	0	1494	0
Confl. Peds. (#/hr)			236							151		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.3	30.3								30.4	
Effective Green, g (s)		30.3	30.3								30.4	
Actuated g/C Ratio		0.43	0.43								0.43	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2496	433								2438	
v/s Ratio Prot		0.26										
v/s Ratio Perm			c0.27								0.27	
v/c Ratio		0.61	0.63								0.61	
Uniform Delay, d1		15.3	15.4								15.3	
Progression Factor		1.00	1.00								1.59	
Incremental Delay, d2		1.1	6.7								1.0	
Delay (s)		16.4	22.1								25.3	
Level of Service		B	C								C	
Approach Delay (s)		17.3			0.0			0.0			25.3	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	451	1092	0	0	0	0	0	1259	200	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.72	0.97						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	930	5213						6361				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	930	5213						6361				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	490	1187	0	0	0	0	0	1368	217	0	0	0
RTOR Reduction (vph)	15	15	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	308	1339	0	0	0	0	0	1570	0	0	0	0
Confl. Peds. (#/hr)	226								274			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	30.2	30.2						30.3				
Effective Green, g (s)	30.2	30.2						30.3				
Actuated g/C Ratio	0.43	0.43						0.43				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	401	2249						2753				
v/s Ratio Prot								c0.25				
v/s Ratio Perm	c0.33	0.26										
v/c Ratio	0.77	0.60						0.57				
Uniform Delay, d1	16.9	15.2						14.9				
Progression Factor	0.24	0.20						1.70				
Incremental Delay, d2	10.8	0.9						0.7				
Delay (s)	14.9	4.0						26.2				
Level of Service	B	A						C				
Approach Delay (s)		6.1			0.0			26.2			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	805	201	0	0	0	0	372	100	160	952	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.97						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5595						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.48	1.00	
Satd. Flow (perm)		5595						3185	1425	806	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	875	218	0	0	0	0	404	109	174	1035	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	47	0	0	0
Lane Group Flow (vph)	0	1065	0	0	0	0	0	404	62	174	1035	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		32.0						32.0	32.0	32.0	32.0	
Effective Green, g (s)		32.0						32.0	32.0	32.0	32.0	
Actuated g/C Ratio		0.46						0.46	0.46	0.46	0.46	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2557						1456	651	368	2092	
v/s Ratio Prot		c0.19						0.13			c0.23	
v/s Ratio Perm									0.04	0.22		
v/c Ratio		0.42						0.28	0.10	0.47	0.49	
Uniform Delay, d1		12.7						11.8	10.8	13.2	13.3	
Progression Factor		0.50						0.88	1.00	0.79	0.80	
Incremental Delay, d2		0.4						0.5	0.3	2.7	0.5	
Delay (s)		6.8						10.8	11.1	13.1	11.1	
Level of Service		A						B	B	B	B	
Approach Delay (s)		6.8			0.0			10.9			11.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	884	67	0	0	0	0	655	68	0	362	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.99			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5500						3106			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5500						3106			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	961	73	0	0	0	0	712	74	0	393	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1105	0	0	0	0	0	783	0	0	393	0
Confl. Peds. (#/hr)	69		208						75			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		25.0						34.7			34.7	
Effective Green, g (s)		25.0						34.7			34.7	
Actuated g/C Ratio		0.36						0.50			0.50	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		1964						1539			801	
v/s Ratio Prot								c0.25			0.24	
v/s Ratio Perm		0.20										
v/c Ratio		0.56						0.51			0.49	
Uniform Delay, d1		18.1						11.9			11.8	
Progression Factor		0.40						1.87			2.29	
Incremental Delay, d2		1.1						0.9			1.8	
Delay (s)		8.3						23.2			28.7	
Level of Service		A						C			C	
Approach Delay (s)		8.3			0.0			23.2			28.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	875	81	0	0	0	0	0	0	107	1298	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.99									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5694									4559	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5694									4559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	951	88	0	0	0	0	0	0	116	1411	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	1032	0	0	0	0	0	0	0	0	1512	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		30.3									30.5	
Effective Green, g (s)		30.3									30.5	
Actuated g/C Ratio		0.43									0.44	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2464									1986	
v/s Ratio Prot		c0.18										
v/s Ratio Perm											0.33	
v/c Ratio		0.42									0.76	
Uniform Delay, d1		13.7									16.7	
Progression Factor		0.17									0.83	
Incremental Delay, d2		0.4									1.8	
Delay (s)		2.8									15.7	
Level of Service		A									B	
Approach Delay (s)		2.8			0.0			0.0			15.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	279	0	0	441	127	357	1450	104	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	303	0	0	479	138	388	1576	113	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	132	0	0	89	0	0	0
Lane Group Flow (vph)	108	303	0	0	479	6	388	1576	24	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Effective Green, g (s)	8.9	61.8			48.9	4.4	21.5	21.5	21.5			
Actuated g/C Ratio	0.09	0.62			0.49	0.04	0.22	0.22	0.22			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	275	1089			1735	62	342	984	295			
v/s Ratio Prot	c0.03	c0.01			0.01	0.00		c0.34				
v/s Ratio Perm		0.18			0.14		0.24		0.02			
v/c Ratio	0.39	0.28			0.28	0.10	1.13	1.60	0.08			
Uniform Delay, d1	43.0	8.8			15.1	45.9	39.2	39.2	31.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	0.9	0.1			0.1	0.7	90.3	275.5	0.5			
Delay (s)	43.9	9.0			15.2	46.6	129.5	314.8	31.9			
Level of Service	D	A			B	D	F	F	C			
Approach Delay (s)		18.1			22.2			264.8			0.0	
Approach LOS		B			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	183.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	247	190	95	438	0	0	0	0	176	991	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.68		1.00						0.97	
Flpb, ped/bikes		1.00	1.00		0.97						0.93	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						0.99	
Satd. Flow (prot)		1676	971		3048						5093	
Flt Permitted		1.00	1.00		0.82						0.99	
Satd. Flow (perm)		1676	971		2523						5093	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	268	207	103	476	0	0	0	0	191	1077	118
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	268	195	0	579	0	0	0	0	0	1369	0
Confl. Peds. (#/hr)			263	263						343		387
Confl. Bikes (#/hr)			23									11
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	454		1180						2161	
v/s Ratio Prot		0.16										
v/s Ratio Perm			0.20		c0.23						0.27	
v/c Ratio		0.34	0.43		0.49						0.63	
Uniform Delay, d1		15.2	16.0		16.5						20.4	
Progression Factor		1.00	1.00		1.00						1.00	
Incremental Delay, d2		1.2	3.0		1.5						1.4	
Delay (s)		16.4	18.9		18.0						21.8	
Level of Service		B	B		B						C	
Approach Delay (s)		17.5			18.0			0.0			21.8	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	279	58	0	505	105	61	388	72	29	243	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.67		1.00	0.54		0.93			0.97	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			1.00	
Satd. Flow (prot)		1616	949		3185	775		2805			2975	
Flt Permitted		1.00	1.00		1.00	1.00		0.88			0.88	
Satd. Flow (perm)		1616	949		3185	775		2477			2641	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	303	63	0	549	114	66	422	78	32	264	29
RTOR Reduction (vph)	0	0	30	0	0	17	0	18	0	0	1	0
Lane Group Flow (vph)	0	303	33	0	549	97	0	548	0	0	324	0
Confl. Peds. (#/hr)			352			895	339		342	342		339
Confl. Bikes (#/hr)			29			37			13			3
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Effective Green, g (s)		34.0	34.0		34.0	34.0		30.0			30.0	
Actuated g/C Ratio		0.49	0.49		0.49	0.49		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		784	460		1547	376		1061			1131	
v/s Ratio Prot		c0.19			0.17							
v/s Ratio Perm			0.03			0.13		c0.22			0.12	
v/c Ratio		0.39	0.07		0.35	0.26		0.52			0.29	
Uniform Delay, d1		11.4	9.6		11.2	10.6		14.7			13.0	
Progression Factor		1.00	1.00		0.14	0.06		1.40			1.00	
Incremental Delay, d2		1.4	0.3		0.5	1.2		1.6			0.6	
Delay (s)		12.8	9.9		2.1	1.8		22.1			13.7	
Level of Service		B	A		A	A		C			B	
Approach Delay (s)		12.3			2.0			22.1			13.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	290	101	55	516	0	0	0	0	135	882	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.66	1.00	1.00					1.00	1.00	0.73
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.75	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	945	1593	1676					1194	3185	1036
Flt Permitted		1.00	1.00	0.50	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	945	843	1676					1194	3185	1036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	315	110	60	561	0	0	0	0	147	959	92
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	315	93	60	561	0	0	0	0	147	959	56
Confl. Peds. (#/hr)			322							136		239
Confl. Bikes (#/hr)			49									7
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Effective Green, g (s)		30.0	30.0	30.0	30.0					30.1	30.1	30.1
Actuated g/C Ratio		0.43	0.43	0.43	0.43					0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		718	405	361	718					513	1369	445
v/s Ratio Prot		0.19			c0.33						c0.30	
v/s Ratio Perm			0.10	0.07						0.12		0.05
v/c Ratio		0.44	0.23	0.17	0.78					0.29	0.70	0.12
Uniform Delay, d1		14.1	12.7	12.3	17.2					13.0	16.3	12.0
Progression Factor		0.80	0.81	1.71	1.70					0.99	0.81	1.22
Incremental Delay, d2		1.8	1.2	0.7	5.7					1.1	2.4	0.5
Delay (s)		13.0	11.5	21.7	34.9					13.9	15.6	15.1
Level of Service		B	B	C	C					B	B	B
Approach Delay (s)		12.7			33.6			0.0			15.4	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	475	0	0	452	195	85	1287	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.69		0.98				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.98				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	976		5464				
Flt Permitted	0.25	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	425	1676			1676	976		5464				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	516	0	0	491	212	92	1399	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	18	0	11	0	0	0	0
Lane Group Flow (vph)	37	516	0	0	491	194	0	1563	0	0	0	0
Confl. Peds. (#/hr)						279	200		164			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	25.3	25.3			25.3	25.3		35.2				
Effective Green, g (s)	25.3	25.3			25.3	25.3		35.2				
Actuated g/C Ratio	0.36	0.36			0.36	0.36		0.50				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	153	605			605	352		2747				
v/s Ratio Prot		c0.31			0.29							
v/s Ratio Perm	0.09					0.20		0.29				
v/c Ratio	0.24	0.85			0.81	0.55		0.57				
Uniform Delay, d1	15.6	20.6			20.2	17.8		12.1				
Progression Factor	0.77	0.77			1.36	1.48		0.50				
Incremental Delay, d2	3.6	13.7			6.2	3.2		0.5				
Delay (s)	15.7	29.6			33.6	29.5		6.6				
Level of Service	B	C			C	C		A				
Approach Delay (s)		28.6			32.4			6.6			0.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	305	56	24	543	50	0	465	63	0	943	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.65	1.00	1.00	0.67		0.94			0.94	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	929	1593	1676	961		2932			2950	
Flt Permitted	0.18	1.00	1.00	0.44	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	307	1676	929	736	1676	961		2932			2950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	332	61	26	590	54	0	505	68	0	1025	151
RTOR Reduction (vph)	0	0	13	0	0	29	0	12	0	0	10	0
Lane Group Flow (vph)	25	332	48	26	590	25	0	561	0	0	1167	0
Confl. Peds. (#/hr)			418			323			294			205
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Effective Green, g (s)	29.0	29.0	29.0	29.0	29.0	29.0		35.0			35.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41		0.50			0.50	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	127	694	384	304	694	398		1466			1475	
v/s Ratio Prot		0.20			c0.35			0.19			c0.40	
v/s Ratio Perm	0.08		0.05	0.04		0.03						
v/c Ratio	0.20	0.48	0.13	0.09	0.85	0.06		0.38			0.79	
Uniform Delay, d1	13.1	15.0	12.7	12.4	18.5	12.3		10.8			14.5	
Progression Factor	0.24	0.23	0.12	1.71	1.68	2.91		1.48			0.76	
Incremental Delay, d2	1.9	1.3	0.4	0.4	9.8	0.2		0.7			3.9	
Delay (s)	5.1	4.8	1.8	21.7	40.9	36.1		16.7			15.0	
Level of Service	A	A	A	C	D	D		B			B	
Approach Delay (s)		4.4			39.8			16.7			15.0	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	295	31	12	500	25	8	700	56	0	473	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.44	1.00	1.00	0.68		0.96			1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1593	1676	621	1593	1676	964		3029			1616	
Flt Permitted	0.26	1.00	1.00	0.49	1.00	1.00		0.95			1.00	
Satd. Flow (perm)	434	1676	621	819	1676	964		2876			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	321	34	13	543	27	9	761	61	0	514	0
RTOR Reduction (vph)	0	0	19	0	0	16	0	8	0	0	0	0
Lane Group Flow (vph)	21	321	15	13	543	11	0	823	0	0	514	0
Confl. Peds. (#/hr)			399			352			271			333
Confl. Bikes (#/hr)			1									
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					
Actuated Green, G (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Effective Green, g (s)	29.1	29.1	30.4	29.1	29.1	29.1		30.4			30.4	
Actuated g/C Ratio	0.42	0.42	0.43	0.42	0.42	0.42		0.43			0.43	
Clearance Time (s)	4.9	4.9	5.6	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	180	696	269	340	696	400		1249			701	
v/s Ratio Prot		0.19			c0.32						c0.32	
v/s Ratio Perm	0.05		0.02	0.02		0.01		0.29				
v/c Ratio	0.12	0.46	0.05	0.04	0.78	0.03		0.66			0.73	
Uniform Delay, d1	12.6	14.8	11.5	12.1	17.7	12.1		15.7			16.4	
Progression Factor	0.40	0.49	2.66	1.63	1.32	2.99		0.35			0.79	
Incremental Delay, d2	1.2	2.0	0.4	0.2	7.0	0.1		2.1			6.1	
Delay (s)	6.2	9.2	30.9	20.0	30.4	36.2		7.6			19.0	
Level of Service	A	A	C	B	C	D		A			B	
Approach Delay (s)		11.0			30.5			7.6			19.0	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	294	79	71	434	0	0	0	0	50	1073	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.68	1.00	1.00						1.00	0.69
Flpb, ped/bikes		1.00	1.00	0.82	1.00						0.99	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	963	1299	1676						4503	987
Flt Permitted		1.00	1.00	0.51	1.00						1.00	1.00
Satd. Flow (perm)		1676	963	693	1676						4503	987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	320	86	77	472	0	0	0	0	54	1166	148
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	320	60	77	472	0	0	0	0	0	1220	62
Confl. Peds. (#/hr)			297	297						163		150
Confl. Bikes (#/hr)			2									2
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		29.3	29.3	29.3	29.3						29.2	29.2
Effective Green, g (s)		29.3	29.3	29.3	29.3						29.2	29.2
Actuated g/C Ratio		0.42	0.42	0.42	0.42						0.42	0.42
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		701	403	290	701						1878	411
v/s Ratio Prot		0.19			c0.28							
v/s Ratio Perm			0.06	0.11							0.27	0.06
v/c Ratio		0.46	0.15	0.27	0.67						0.65	0.15
Uniform Delay, d1		14.6	12.6	13.3	16.5						16.3	12.7
Progression Factor		0.39	0.11	1.00	1.00						0.19	0.06
Incremental Delay, d2		1.9	0.7	2.2	5.1						1.1	0.5
Delay (s)		7.7	2.1	15.5	21.6						4.2	1.3
Level of Service		A	A	B	C						A	A
Approach Delay (s)		6.5			20.7			0.0			3.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1705	170	356	1790	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.80	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	0.69	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1135	1103	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1135	1103	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1853	185	387	1946	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	76	117	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1853	109	270	1946	0	0	0	0
Confl. Peds. (#/hr)						181	413					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					34.7	34.7	33.0	33.0				
Effective Green, g (s)					34.7	34.7	33.0	33.0				
Actuated g/C Ratio					0.39	0.39	0.37	0.37				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2223	437	404	1678				
v/s Ratio Prot					c0.32			c0.43				
v/s Ratio Perm						0.10	0.25					
v/c Ratio					0.83	0.25	0.67	1.16				
Uniform Delay, d1					25.0	18.8	23.9	28.5				
Progression Factor					1.00	1.00	0.60	0.79				
Incremental Delay, d2					3.9	1.4	0.8	72.6				
Delay (s)					28.9	20.2	15.2	95.0				
Level of Service					C	C	B	F				
Approach Delay (s)		0.0			28.1			81.7			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	1144	73	64	519	0	0	758	172
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.81
Flpb, ped/bikes				0.85	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1346	4497		1517	3185			3185	1154
Flt Permitted				0.95	1.00		0.29	1.00			1.00	1.00
Satd. Flow (perm)				1346	4497		456	3185			3185	1154
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	1243	79	70	564	0	0	824	187
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	107	1312	0	70	564	0	0	824	186
Confl. Peds. (#/hr)				140		122	164					164
Confl. Bikes (#/hr)						1						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				24.0	24.0		40.0	40.0			40.0	40.0
Effective Green, g (s)				24.0	24.0		40.0	40.0			40.0	40.0
Actuated g/C Ratio				0.34	0.34		0.57	0.57			0.57	0.57
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				461	1541		260	1820			1820	659
v/s Ratio Prot					c0.29			0.18			c0.26	
v/s Ratio Perm				0.08			0.15					0.16
v/c Ratio				0.23	0.85		0.27	0.31			0.45	0.28
Uniform Delay, d1				16.4	21.3		7.6	7.8			8.7	7.7
Progression Factor				0.43	0.34		0.27	0.31			1.14	1.19
Incremental Delay, d2				0.9	4.6		2.2	0.4			0.5	0.7
Delay (s)				7.9	11.9		4.3	2.8			10.4	9.8
Level of Service				A	B		A	A			B	A
Approach Delay (s)		0.0			11.6			2.9			10.3	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	31	1126	47	96	728	0	0	358	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					1.00			1.00			1.00	0.83
Flpb, ped/bikes					1.00			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5690			3167			1616	1144
Flt Permitted					1.00			0.80			1.00	1.00
Satd. Flow (perm)					5690			2564			1616	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	34	1224	51	104	791	0	0	389	191
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	0	81
Lane Group Flow (vph)	0	0	0	0	1301	0	0	895	0	0	389	110
Confl. Peds. (#/hr)				56		67						113
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					22.0			37.7			25.7	25.7
Effective Green, g (s)					22.0			37.7			25.7	25.7
Actuated g/C Ratio					0.31			0.54			0.37	0.37
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					1788			1438			593	420
v/s Ratio Prot								c0.06			0.24	
v/s Ratio Perm					0.23			c0.28				0.10
v/c Ratio					0.73			0.62			0.66	0.26
Uniform Delay, d1					21.3			11.2			18.5	15.5
Progression Factor					0.78			1.15			1.14	1.98
Incremental Delay, d2					2.4			1.5			4.2	1.1
Delay (s)					19.0			14.4			25.2	31.9
Level of Service					B			B			C	C
Approach Delay (s)		0.0			19.0			14.4			27.4	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	91	817	0	0	0	0	0	823	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.93
Flpb, ped/bikes					0.98						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5636						4577	1321
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5636						4577	1321
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	99	888	0	0	0	0	0	895	364
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	0	0	0	960	0	0	0	0	0	895	337
Confl. Peds. (#/hr)				170								56
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					27.3						33.5	33.5
Effective Green, g (s)					27.3						33.5	33.5
Actuated g/C Ratio					0.39						0.48	0.48
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2198						2190	632
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.17							c0.26
v/c Ratio					0.44						0.41	0.53
Uniform Delay, d1					15.7						11.8	12.8
Progression Factor					1.00						0.30	0.26
Incremental Delay, d2					0.6						0.5	2.6
Delay (s)					16.3						4.0	5.9
Level of Service					B						A	A
Approach Delay (s)		0.0			16.3			0.0			4.5	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	567	1539	0	0	0	0	0	2317	220	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.72			
Flpb, ped/bikes	0.77	0.98						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	999	5293						3185	1025			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	999	5293						3185	1025			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	616	1673	0	0	0	0	0	2518	239	0	0	0
RTOR Reduction (vph)	18	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	426	1827	0	0	0	0	0	2518	226	0	0	0
Confl. Peds. (#/hr)	159		76						161			
Confl. Bikes (#/hr)			31						10			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	28.6	28.6						50.8	50.8			
Effective Green, g (s)	28.6	28.6						50.8	50.8			
Actuated g/C Ratio	0.32	0.32						0.56	0.56			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	317	1681						1797	578			
v/s Ratio Prot								c0.79				
v/s Ratio Perm	c0.43	0.35							0.22			
v/c Ratio	1.34	1.09						1.40	0.39			
Uniform Delay, d1	30.7	30.7						19.6	11.0			
Progression Factor	1.00	1.00						1.51	1.56			
Incremental Delay, d2	173.9	49.5						180.9	0.2			
Delay (s)	204.6	80.2						210.5	17.3			
Level of Service	F	F						F	B			
Approach Delay (s)		104.4			0.0			193.7			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	153.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1757	214	0	0	0	0	0	0	208	733	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5673								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5673								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1910	233	0	0	0	0	0	0	226	797	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	2119	0	0	0	0	0	0	0	214	797	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2206								785	2845	
v/s Ratio Prot		c0.37									c0.14	
v/s Ratio Perm										0.13		
v/c Ratio		0.96								0.27	0.28	
Uniform Delay, d1		26.8								13.3	13.4	
Progression Factor		1.50								0.55	0.59	
Incremental Delay, d2		6.3								0.7	0.2	
Delay (s)		46.6								8.1	8.1	
Level of Service		D								A	A	
Approach Delay (s)		46.6			0.0			0.0			8.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	1248	65	0	0	0	0	465	104	62	232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.97						1.00			0.98	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5503						2940			3090	
Flt Permitted		0.99						1.00			0.78	
Satd. Flow (perm)		5503						2940			2432	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	193	1357	71	0	0	0	0	505	113	67	252	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	1612	0	0	0	0	0	611	0	0	319	0
Confl. Peds. (#/hr)	187		104						206	206		
Confl. Bikes (#/hr)			30						5			
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		34.0						30.0			30.0	
Effective Green, g (s)		34.0						30.0			30.0	
Actuated g/C Ratio		0.49						0.43			0.43	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2672						1260			1042	
v/s Ratio Prot								c0.21				
v/s Ratio Perm		0.29									0.13	
v/c Ratio		0.60						0.48			0.31	
Uniform Delay, d1		13.1						14.4			13.2	
Progression Factor		1.00						1.00			1.48	
Incremental Delay, d2		1.0						1.3			0.7	
Delay (s)		14.1						15.8			20.2	
Level of Service		B						B			C	
Approach Delay (s)		14.1			0.0			15.8			20.2	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1528	266	0	0	0	0	0	0	202	1033	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.89							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.95	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1272							1516	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1272							1516	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1661	289	0	0	0	0	0	0	220	1123	0
RTOR Reduction (vph)	0	0	16	0	0	0	0	0	0	22	0	0
Lane Group Flow (vph)	0	1661	273	0	0	0	0	0	0	198	1123	0
Confl. Peds. (#/hr)			74							41		
Confl. Bikes (#/hr)			14									
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		30.6	30.6							29.2	29.2	
Effective Green, g (s)		30.6	30.6							29.2	29.2	
Actuated g/C Ratio		0.44	0.44							0.42	0.42	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		2000	556							632	1909	
v/s Ratio Prot		c0.36									c0.25	
v/s Ratio Perm			0.21							0.13		
v/c Ratio		0.83	0.49							0.31	0.59	
Uniform Delay, d1		17.4	14.1							13.7	15.8	
Progression Factor		1.28	1.28							0.30	0.40	
Incremental Delay, d2		3.8	2.8							1.1	1.2	
Delay (s)		26.0	20.9							5.2	7.5	
Level of Service		C	C							A	A	
Approach Delay (s)		25.3			0.0			0.0			7.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	1420	0	0	0	0	0	1319	101	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.94			
Flpb, ped/bikes		0.99						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4474						4577	1345			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4474						4577	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1543	0	0	0	0	0	1434	110	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1843	0	0	0	0	0	1434	93	0	0	0
Confl. Peds. (#/hr)	68								40			
Confl. Bikes (#/hr)									2			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		29.1						31.3	31.3			
Effective Green, g (s)		29.1						31.3	31.3			
Actuated g/C Ratio		0.42						0.45	0.45			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		1859						2046	601			
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.41							0.07			
v/c Ratio		0.99						0.70	0.16			
Uniform Delay, d1		20.3						15.6	11.5			
Progression Factor		0.45						1.64	2.01			
Incremental Delay, d2		14.4						0.6	0.2			
Delay (s)		23.5						26.2	23.3			
Level of Service		C						C	C			
Approach Delay (s)		23.5			0.0			26.0			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	1248	58	0	0	0	0	544	80	179	494	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.98		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		1.00	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4439						3053		1593	3185	
Flt Permitted		1.00						1.00		0.33	1.00	
Satd. Flow (perm)		4439						3053		546	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	1357	63	0	0	0	0	591	87	195	537	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1519	0	0	0	0	0	676	0	195	537	0
Confl. Peds. (#/hr)	120		201						137			95
Confl. Bikes (#/hr)			1									1
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		30.0						34.0		34.0	34.0	
Effective Green, g (s)		30.0						34.0		34.0	34.0	
Actuated g/C Ratio		0.43						0.49		0.49	0.49	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		1902						1482		265	1547	
v/s Ratio Prot								0.22			0.17	
v/s Ratio Perm		0.34								c0.36		
v/c Ratio		0.80						0.46		0.74	0.35	
Uniform Delay, d1		17.4						11.9		14.4	11.1	
Progression Factor		1.49						1.75		1.25	1.13	
Incremental Delay, d2		1.3						0.9		15.4	0.6	
Delay (s)		27.2						21.8		33.4	13.2	
Level of Service		C						C		C	B	
Approach Delay (s)		27.2			0.0			21.8			18.6	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	1400	74	0	0	0	0	765	103	0	382	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.97						0.98			1.00	
Flpb, ped/bikes	0.78	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1249	4425						3055			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1249	4425						3055			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1522	80	0	0	0	0	832	112	0	415	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	72	1594	0	0	0	0	0	943	0	0	415	0
Confl. Peds. (#/hr)	195		287						135	135		
Confl. Bikes (#/hr)			3						1			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	29.2	29.2						30.5			30.5	
Effective Green, g (s)	29.2	29.2						30.5			30.5	
Actuated g/C Ratio	0.42	0.42						0.44			0.44	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	521	1845						1331			704	
v/s Ratio Prot		c0.36						c0.31			0.26	
v/s Ratio Perm	0.06											
v/c Ratio	0.14	0.86						0.71			0.59	
Uniform Delay, d1	12.6	18.6						16.1			15.0	
Progression Factor	0.46	0.33						0.38			0.47	
Incremental Delay, d2	0.4	3.7						1.8			2.7	
Delay (s)	6.2	9.8						7.9			9.8	
Level of Service	A	A						A			A	
Approach Delay (s)		9.7			0.0			7.9			9.8	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	119	1076	82	0	0	0	0	870	103	124	766	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99						1.00	0.89	1.00	1.00	
Flpb, ped/bikes	0.91	1.00						1.00	1.00	0.98	1.00	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1442	4481						3185	1261	1558	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.23	1.00	
Satd. Flow (perm)	1442	4481						3185	1261	377	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1170	89	0	0	0	0	946	112	135	833	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	129	1247	0	0	0	0	0	946	95	135	833	0
Confl. Peds. (#/hr)	99		143						90	90		
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Effective Green, g (s)	24.8	24.8						35.1	35.1	35.1	35.1	
Actuated g/C Ratio	0.35	0.35						0.50	0.50	0.50	0.50	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	510	1587						1597	632	189	1597	
v/s Ratio Prot		c0.28						0.30			0.26	
v/s Ratio Perm	0.09								0.08	c0.36		
v/c Ratio	0.25	0.79						0.59	0.15	0.71	0.52	
Uniform Delay, d1	16.0	20.2						12.4	9.4	13.6	11.8	
Progression Factor	0.90	1.02						0.27	0.06	1.00	1.00	
Incremental Delay, d2	0.6	2.0						0.9	0.3	20.5	1.2	
Delay (s)	15.0	22.6						4.2	0.8	34.1	13.0	
Level of Service	B	C						A	A	C	B	
Approach Delay (s)		21.9			0.0			3.9			15.9	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	251	1284	117	72	1131	199	259	1892	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.83	1.00	1.00	0.94			
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.91	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1348	1575	4577	1178	1449	3185	1345			
Flt Permitted	0.22	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	361	4577	1348	454	4577	1178	1449	3185	1345			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	1396	127	78	1229	216	282	2057	207	0	0	0
RTOR Reduction (vph)	0	0	49	0	0	111	0	0	36	0	0	0
Lane Group Flow (vph)	273	1396	78	78	1229	105	282	2057	171	0	0	0
Confl. Peds. (#/hr)	92		53	53		92	88		40			
Confl. Bikes (#/hr)			12			9			6			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	25.6	25.6	55.1	14.6	14.6	14.6	52.4	52.4	52.4			
Effective Green, g (s)	25.6	25.6	55.1	14.6	14.6	14.6	52.4	52.4	52.4			
Actuated g/C Ratio	0.28	0.28	0.61	0.16	0.16	0.16	0.58	0.58	0.58			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	198	1301	825	73	742	191	843	1854	783			
v/s Ratio Prot	c0.11	0.31	0.03		c0.27		0.11	c0.65				
v/s Ratio Perm	0.28		0.03	0.17		0.09	0.09		0.13			
v/c Ratio	1.38	1.07	0.09	1.07	1.66	0.55	0.33	1.11	0.22			
Uniform Delay, d1	30.4	32.2	7.2	37.7	37.7	34.7	9.8	18.8	9.0			
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.73	1.52	2.05			
Incremental Delay, d2	198.8	47.1	0.0	125.4	301.4	10.8	0.0	50.1	0.1			
Delay (s)	229.2	79.3	7.2	163.1	339.1	45.5	16.9	78.7	18.5			
Level of Service	F	E	A	F	F	D	B	E	B			
Approach Delay (s)		97.0			288.4			66.9			0.0	
Approach LOS		F			F			E			A	

Intersection Summary				
HCM 2000 Control Delay	133.6	HCM 2000 Level of Service	F	
HCM 2000 Volume to Capacity ratio	1.32			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	111.2%	ICU Level of Service	H	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1054	114	48	1092	0	0	0	0	89	539	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5726	1425
Flt Permitted		1.00	1.00	0.13	1.00						0.99	1.00
Satd. Flow (perm)		3185	1425	224	3185						5726	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1146	124	52	1187	0	0	0	0	97	586	137
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	1146	53	52	1187	0	0	0	0	0	683	119
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		30.0	30.0	30.0	30.0						29.7	29.7
Effective Green, g (s)		30.0	30.0	30.0	30.0						29.7	29.7
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.42	0.42
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1365	610	96	1365						2429	604
v/s Ratio Prot		0.36			c0.37							
v/s Ratio Perm			0.04	0.23							0.12	0.08
v/c Ratio		0.84	0.09	0.54	0.87						0.28	0.20
Uniform Delay, d1		17.9	11.9	14.9	18.2						13.2	12.7
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		6.3	0.3	20.2	7.8						0.3	0.7
Delay (s)		24.2	12.2	35.1	26.0						13.5	13.4
Level of Service		C	B	D	C						B	B
Approach Delay (s)		23.0			26.4			0.0			13.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	1134	66	20	955	84	90	383	44	34	166	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.97			0.99			0.94	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.98			0.99	
Frt	1.00	0.99		1.00	0.99			0.99			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1593	3129		1593	3064			3024			2813	
Flt Permitted	0.15	1.00		0.10	1.00			0.81			0.85	
Satd. Flow (perm)	256	3129		171	3064			2473			2400	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1233	72	22	1038	91	98	416	48	37	180	109
RTOR Reduction (vph)	0	4	0	0	6	0	0	7	0	0	14	0
Lane Group Flow (vph)	179	1301	0	22	1123	0	0	555	0	0	312	0
Confl. Peds. (#/hr)	196		89	89		196	101		78	78		101
Confl. Bikes (#/hr)			17			7			6			5
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	128	1570		85	1538			994			964	
v/s Ratio Prot		0.42			0.37							
v/s Ratio Perm	c0.70			0.13				c0.22			0.13	
v/c Ratio	1.40	0.83		0.26	0.73			0.56			0.32	
Uniform Delay, d1	24.9	21.2		14.3	19.6			23.1			20.6	
Progression Factor	1.00	1.00		0.53	0.49			1.00			1.00	
Incremental Delay, d2	219.6	5.2		6.1	2.6			2.3			0.9	
Delay (s)	244.5	26.4		13.7	12.1			25.3			21.4	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		52.7			12.1			25.3			21.4	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	848	110	65	846	0	0	0	0	226	804	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3130		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.16	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3130		265	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	922	120	71	920	0	0	0	0	246	874	179
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	1032	0	71	920	0	0	0	0	246	874	140
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		45.0		45.0	45.0					45.0	45.0	45.0
Effective Green, g (s)		45.0		45.0	45.0					45.0	45.0	45.0
Actuated g/C Ratio		0.45		0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1408		119	1433					716	2059	641
v/s Ratio Prot		c0.33			0.29						c0.19	
v/s Ratio Perm				0.27						0.15		0.10
v/c Ratio		0.73		0.60	0.64					0.34	0.42	0.22
Uniform Delay, d1		22.6		20.7	21.3					17.9	18.7	16.8
Progression Factor		0.37		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.0		20.1	2.2					1.3	0.6	0.8
Delay (s)		10.2		40.8	23.5					19.2	19.3	17.6
Level of Service		B		D	C					B	B	B
Approach Delay (s)		10.2			24.7			0.0			19.1	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	1021	0	0	777	115	113	1509	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frt	1.00	1.00			0.98			1.00	0.85			
Flt Protected	0.95	1.00			1.00			1.00	1.00			
Satd. Flow (prot)	1593	3185			3124			4561	1425			
Flt Permitted	0.20	1.00			1.00			1.00	1.00			
Satd. Flow (perm)	339	3185			3124			4561	1425			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1110	0	0	845	125	123	1640	92	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	25	0	0	0
Lane Group Flow (vph)	177	1110	0	0	968	0	0	1763	67	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	32.1	32.1			32.1			28.0	28.0			
Effective Green, g (s)	32.1	32.1			32.1			28.0	28.0			
Actuated g/C Ratio	0.46	0.46			0.46			0.40	0.40			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	155	1460			1432			1824	570			
v/s Ratio Prot		0.35			0.31							
v/s Ratio Perm	c0.52							0.39	0.05			
v/c Ratio	1.14	0.76			0.68			0.97	0.12			
Uniform Delay, d1	18.9	15.8			14.9			20.5	13.2			
Progression Factor	1.00	1.00			0.63			0.67	1.01			
Incremental Delay, d2	115.5	3.8			2.2			9.8	0.2			
Delay (s)	134.5	19.5			11.6			23.5	13.6			
Level of Service	F	B			B			C	B			
Approach Delay (s)		35.3			11.6			23.1			0.0	
Approach LOS		D			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	82	885	58	68	742	95	50	437	37	53	539	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	3156		1593	3131		1593	3148		1593	3185	1425
Flt Permitted	0.22	1.00		0.18	1.00		0.36	1.00		0.40	1.00	1.00
Satd. Flow (perm)	373	3156		299	3131		596	3148		669	3185	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	962	63	74	807	103	54	475	40	58	586	97
RTOR Reduction (vph)	0	7	0	0	14	0	0	9	0	0	0	55
Lane Group Flow (vph)	89	1018	0	74	896	0	54	506	0	58	586	42
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Effective Green, g (s)	33.5	33.5		33.5	33.5		30.0	30.0		30.0	30.0	30.0
Actuated g/C Ratio	0.48	0.48		0.48	0.48		0.43	0.43		0.43	0.43	0.43
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	178	1510		143	1498		255	1349		286	1365	610
v/s Ratio Prot		c0.32			0.29			0.16			c0.18	
v/s Ratio Perm	0.24			0.25			0.09			0.09		0.03
v/c Ratio	0.50	0.67		0.52	0.60		0.21	0.37		0.20	0.43	0.07
Uniform Delay, d1	12.5	14.1		12.6	13.3		12.6	13.6		12.5	14.0	11.8
Progression Factor	1.74	1.74		1.10	1.14		1.47	1.51		0.51	0.56	0.25
Incremental Delay, d2	6.7	1.7		10.1	1.4		1.9	0.8		1.5	1.0	0.2
Delay (s)	28.4	26.1		24.0	16.6		20.4	21.3		8.0	8.9	3.2
Level of Service	C	C		C	B		C	C		A	A	A
Approach Delay (s)		26.3			17.1			21.2			8.0	
Approach LOS		C			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	908	49	72	762	61	70	791	81	0	439	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99			1.00	0.93		1.00	
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.99			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1563	3138		1563	3127			3163	1330		1616	
Flt Permitted	0.22	1.00		0.16	1.00			0.80	1.00		1.00	
Satd. Flow (perm)	364	3138		265	3127			2531	1330		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	987	53	78	828	66	76	860	88	0	477	0
RTOR Reduction (vph)	0	6	0	0	9	0	0	0	18	0	0	0
Lane Group Flow (vph)	55	1034	0	78	885	0	0	936	70	0	477	0
Confl. Peds. (#/hr)	75		68	68		75	83		60	60		83
Confl. Bikes (#/hr)			16			7			7			7
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0			30.0	30.0		30.0	
Actuated g/C Ratio	0.43	0.43		0.43	0.43			0.43	0.43		0.43	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	156	1344		113	1340			1084	570		692	
v/s Ratio Prot		c0.33			0.28						0.30	
v/s Ratio Perm	0.15			0.29				c0.37	0.05			
v/c Ratio	0.35	0.77		0.69	0.66			0.86	0.12		0.69	
Uniform Delay, d1	13.5	17.1		16.2	15.9			18.1	12.1		16.2	
Progression Factor	1.53	1.54		1.41	1.48			0.48	0.48		1.56	
Incremental Delay, d2	4.9	3.4		27.6	2.4			7.3	0.3		4.3	
Delay (s)	25.4	29.7		50.4	26.0			16.0	6.2		29.6	
Level of Service	C	C		D	C			B	A		C	
Approach Delay (s)		29.5			28.0			15.2			29.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	738	85	29	465	47	73	869	90	103	637	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3136		1593	3141		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.32	1.00		0.15	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	1593	3136		534	3141		248	3185	1425	293	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	802	92	32	505	51	79	945	98	112	692	217
RTOR Reduction (vph)	0	12	0	0	11	0	0	0	55	0	0	133
Lane Group Flow (vph)	141	882	0	32	545	0	79	945	43	112	692	84
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Effective Green, g (s)	5.5	32.7		23.7	23.7		27.0	27.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.08	0.47		0.34	0.34		0.39	0.39	0.39	0.39	0.39	0.39
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	125	1464		180	1063		95	1228	549	113	646	549
v/s Ratio Prot	c0.09	c0.28			0.17			0.30			c0.41	
v/s Ratio Perm				0.06			0.32		0.03	0.38		0.06
v/c Ratio	1.13	0.60		0.18	0.51		0.83	0.77	0.08	0.99	1.07	0.15
Uniform Delay, d1	32.2	13.8		16.3	18.5		19.4	18.8	13.6	21.4	21.5	14.0
Progression Factor	0.54	1.05		1.00	1.00		0.64	0.64	0.61	1.36	1.36	4.32
Incremental Delay, d2	104.9	1.3		2.1	1.8		48.3	4.0	0.2	77.2	54.0	0.5
Delay (s)	122.2	15.7		18.4	20.3		60.8	15.9	8.6	106.2	83.1	61.1
Level of Service	F	B		B	C		E	B	A	F	F	E
Approach Delay (s)		30.2			20.2			18.5			81.0	
Approach LOS		C			C			B			F	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	27	27	58	95	77	42	2223	11	11	186	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185	1425	191	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	29	29	63	103	84	46	2416	12	12	202	23
RTOR Reduction (vph)	0	0	21	0	0	69	0	0	6	0	0	14
Lane Group Flow (vph)	35	29	8	63	103	15	46	2416	6	12	202	9
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	8.5	18.6	25.6	6.3	16.4	16.4	7.0	47.1	47.1	35.1	35.1	35.1
Effective Green, g (s)	8.5	18.6	25.6	6.3	16.4	16.4	7.0	47.1	47.1	35.1	35.1	35.1
Actuated g/C Ratio	0.09	0.21	0.28	0.07	0.18	0.18	0.08	0.52	0.52	0.39	0.39	0.39
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	346	405	111	580	259	123	1666	745	74	653	555
v/s Ratio Prot	c0.01	0.02	0.00	c0.04	c0.03		0.03	c0.76			0.12	
v/s Ratio Perm			0.00			0.01			0.00	0.06		0.01
v/c Ratio	0.12	0.08	0.02	0.57	0.18	0.06	0.37	1.45	0.01	0.16	0.31	0.02
Uniform Delay, d1	37.3	28.8	23.2	40.5	31.1	30.4	39.4	21.4	10.3	17.9	19.0	16.9
Progression Factor	1.00	1.00	1.00	1.30	1.12	1.00	1.00	1.00	1.00	1.13	1.12	1.00
Incremental Delay, d2	0.2	0.1	0.0	6.0	0.1	0.1	1.9	206.0	0.0	4.4	1.2	0.1
Delay (s)	37.5	28.9	23.2	58.8	34.9	30.5	41.3	227.5	10.3	24.7	22.4	16.9
Level of Service	D	C	C	E	C	C	D	F	B	C	C	B
Approach Delay (s)		30.4			39.4			222.9			22.0	
Approach LOS		C			D			F			C	

Intersection Summary			
HCM 2000 Control Delay	186.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	11	56	314	0	0	0	0	0	506	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1450		1664						4577	1425
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1450		1664						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	12	61	341	0	0	0	0	0	550	103
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	0	62
Lane Group Flow (vph)	0	0	6	0	402	0	0	0	0	0	550	41
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			44.0		44.0						36.1	36.1
Effective Green, g (s)			44.0		44.0						36.1	36.1
Actuated g/C Ratio			0.49		0.49						0.40	0.40
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			708		813						1835	571
v/s Ratio Prot											c0.12	
v/s Ratio Perm			0.00		0.24							0.03
v/c Ratio			0.01		0.49						0.30	0.07
Uniform Delay, d1			11.8		15.5						18.3	16.6
Progression Factor			1.00		1.00						1.00	1.00
Incremental Delay, d2			0.0		2.1						0.4	0.2
Delay (s)			11.8		17.6						18.8	16.9
Level of Service			B		B						B	B
Approach Delay (s)		11.8			17.6			0.0			18.5	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	303	116	22	249	0	0	179	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			1.00	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					0.99	1.00		1.00			1.00	
Satd. Flow (prot)					1664	1399		3172			3090	
Flt Permitted					0.99	1.00		0.92			1.00	
Satd. Flow (perm)					1664	1399		2946			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	58	329	126	24	271	0	0	195	41
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	0	387	86	0	295	0	0	220	0
Confl. Bikes (#/hr)						7						4
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					18.2	18.2		42.6			42.6	
Effective Green, g (s)					18.2	18.2		42.6			42.6	
Actuated g/C Ratio					0.26	0.26		0.61			0.61	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					432	363		1792			1880	
v/s Ratio Prot											0.07	
v/s Ratio Perm					0.23	0.06		c0.10				
v/c Ratio					0.90	0.24		0.16			0.12	
Uniform Delay, d1					25.0	20.4		6.0			5.8	
Progression Factor					1.06	1.07		1.00			1.00	
Incremental Delay, d2					23.3	1.5		0.2			0.1	
Delay (s)					49.8	23.3		6.2			5.9	
Level of Service					D	C		A			A	
Approach Delay (s)		0.0			43.3			6.2			5.9	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	92	263	0	0	0	0	0	828	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.81
Flpb, ped/bikes				0.89	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1421	1676						4577	1158
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1421	1676						4577	1158
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	100	286	0	0	0	0	0	900	70
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	0	0	0	100	286	0	0	0	0	0	900	35
Confl. Peds. (#/hr)				87								71
Confl. Bikes (#/hr)												8
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				25.2	25.2						35.4	35.4
Effective Green, g (s)				25.2	25.2						35.4	35.4
Actuated g/C Ratio				0.36	0.36						0.51	0.51
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				511	603						2314	585
v/s Ratio Prot					c0.17						c0.20	
v/s Ratio Perm				0.07								0.03
v/c Ratio				0.20	0.47						0.39	0.06
Uniform Delay, d1				15.4	17.3						10.6	8.8
Progression Factor				0.40	0.46						1.00	1.00
Incremental Delay, d2				0.7	2.2						0.5	0.2
Delay (s)				7.0	10.1						11.1	9.0
Level of Service				A	B						B	A
Approach Delay (s)		0.0			9.3			0.0			11.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	266	73	89	1644	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		1.00				
Satd. Flow (prot)					1676	1425		4565				
Flt Permitted					1.00	1.00		1.00				
Satd. Flow (perm)					1676	1425		4565				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	289	79	97	1787	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	289	63	0	1870	0	0	0	0
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					26.2	26.2		34.4				
Effective Green, g (s)					26.2	26.2		34.4				
Actuated g/C Ratio					0.37	0.37		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					627	533		2243				
v/s Ratio Prot					c0.17							
v/s Ratio Perm						0.04		0.41				
v/c Ratio					0.46	0.12		0.83				
Uniform Delay, d1					16.6	14.3		15.3				
Progression Factor					1.68	1.93		1.00				
Incremental Delay, d2					2.2	0.4		3.8				
Delay (s)					30.0	28.1		19.2				
Level of Service					C	C		B				
Approach Delay (s)		0.0			29.6			19.2			0.0	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	29	251	42	31	466	0	0	707	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.96	1.00	1.00			1.00	0.89
Flpb, ped/bikes					0.99	1.00	0.97	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1656	1374	1547	3185			3185	1263
Flt Permitted					0.99	1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)					1656	1374	521	3185			3185	1263
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	32	273	46	34	507	0	0	768	50
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	305	19	34	507	0	0	768	31
Confl. Peds. (#/hr)				66		24	52					52
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					21.0	21.0	43.0	43.0			43.0	43.0
Effective Green, g (s)					21.0	21.0	43.0	43.0			43.0	43.0
Actuated g/C Ratio					0.30	0.30	0.61	0.61			0.61	0.61
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					496	412	320	1956			1956	775
v/s Ratio Prot								0.16			c0.24	
v/s Ratio Perm					0.18	0.01	0.07					0.02
v/c Ratio					0.61	0.05	0.11	0.26			0.39	0.04
Uniform Delay, d1					21.0	17.4	5.6	6.2			6.9	5.3
Progression Factor					0.88	1.16	1.00	1.00			0.73	0.21
Incremental Delay, d2					5.1	0.2	0.7	0.3			0.6	0.1
Delay (s)					23.7	20.3	6.2	6.5			5.6	1.2
Level of Service					C	C	A	A			A	A
Approach Delay (s)		0.0			23.2			6.5			5.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	51	237	38	80	932	0	0	449	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.69	1.00	1.00			1.00	0.69
Flpb, ped/bikes					0.93	1.00	0.90	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1549	984	1427	3185			1616	955
Flt Permitted					0.99	1.00	0.36	1.00			1.00	1.00
Satd. Flow (perm)					1549	984	545	3185			1616	955
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	55	258	41	87	1013	0	0	488	210
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	313	15	87	1013	0	0	488	182
Confl. Peds. (#/hr)				210		285	124					124
Confl. Bikes (#/hr)						2						3
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					26.0	26.0	34.5	34.5			34.5	34.5
Effective Green, g (s)					26.0	26.0	34.5	34.5			34.5	34.5
Actuated g/C Ratio					0.37	0.37	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					575	365	268	1569			796	470
v/s Ratio Prot								c0.32			0.30	
v/s Ratio Perm					0.20	0.02	0.16					0.19
v/c Ratio					0.54	0.04	0.32	0.65			0.61	0.39
Uniform Delay, d1					17.3	14.0	10.7	13.2			12.9	11.1
Progression Factor					1.43	1.96	1.00	1.00			1.46	1.72
Incremental Delay, d2					3.5	0.2	3.2	2.1			2.8	1.9
Delay (s)					28.3	27.7	13.9	15.3			21.6	21.0
Level of Service					C	C	B	B			C	C
Approach Delay (s)		0.0			28.2			15.2			21.5	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	48	198	53	68	1002	0	0	644	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3155	1425	1593	3185			3108	
Flt Permitted					0.99	1.00	0.29	1.00			1.00	
Satd. Flow (perm)					3155	1425	484	3185			3108	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	52	215	58	74	1089	0	0	700	136
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	267	18	74	1089	0	0	813	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					22.0	22.0	42.0	42.0			42.0	
Effective Green, g (s)					22.0	22.0	42.0	42.0			42.0	
Actuated g/C Ratio					0.31	0.31	0.60	0.60			0.60	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					991	447	290	1911			1864	
v/s Ratio Prot								c0.34			0.26	
v/s Ratio Perm					0.08	0.01	0.15					
v/c Ratio					0.27	0.04	0.26	0.57			0.44	
Uniform Delay, d1					18.0	16.7	6.6	8.5			7.6	
Progression Factor					1.00	1.00	1.00	1.00			1.75	
Incremental Delay, d2					0.7	0.2	2.1	1.2			0.2	
Delay (s)					18.6	16.8	8.7	9.7			13.5	
Level of Service					B	B	A	A			B	
Approach Delay (s)		0.0			18.3			9.7			13.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	847	225	218	800	126	236	622	244	143	357	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.94	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1522	3185	1097	1593	4369		1552	3185	1229	1497	3045	
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.40	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	436	3185	1097	218	4369		648	3185	1229	622	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	921	245	237	870	137	257	676	265	155	388	62
RTOR Reduction (vph)	0	0	151	0	24	0	0	0	15	0	14	0
Lane Group Flow (vph)	239	921	94	237	983	0	257	676	250	155	436	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	1079	371	205	1966		327	1362	621	210	1031	
v/s Ratio Prot		0.29		c0.09	0.23		c0.04	0.21	0.03		0.14	
v/s Ratio Perm	c0.55		0.09	0.43			c0.29		0.17	0.25		
v/c Ratio	1.63	0.85	0.25	1.16	0.50		0.79	0.50	0.40	0.74	0.42	
Uniform Delay, d1	29.8	27.7	21.5	19.9	17.6		21.8	18.7	13.8	26.2	23.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	310.5	8.6	1.6	111.3	0.9		11.7	1.3	0.4	20.6	1.3	
Delay (s)	340.2	36.3	23.1	131.1	18.5		33.6	20.0	14.2	46.8	24.2	
Level of Service	F	D	C	F	B		C	C	B	D	C	
Approach Delay (s)		85.7			39.9			21.6			30.0	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	791	152	260	967	537	36	638	176	65	918	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.82	1.00	1.00	0.86	1.00	1.00	1.00	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1590	3185	1165	3090	3185	1230	1593	3185	1425	1550	3185	1132
Flt Permitted	0.13	1.00	1.00	0.95	1.00	1.00	0.16	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	213	3185	1165	3090	3185	1230	274	3185	1425	279	3185	1132
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	860	165	283	1051	584	39	693	191	71	998	162
RTOR Reduction (vph)	0	0	113	0	0	40	0	0	132	0	0	55
Lane Group Flow (vph)	295	860	52	283	1051	544	39	693	59	71	998	107
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	custom	Perm	NA	pm+ov
Protected Phases	5	2		1	6 12			8	10		4	5
Permitted Phases	2		2			6 12	8			4		4
Actuated Green, G (s)	43.5	31.5	31.5	13.5	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Effective Green, g (s)	43.5	31.5	31.5	13.5	43.0	43.0	24.5	24.5	10.0	24.5	24.5	36.5
Actuated g/C Ratio	0.44	0.32	0.32	0.14	0.43	0.43	0.24	0.24	0.10	0.24	0.24	0.36
Clearance Time (s)	4.0	5.5	5.5	4.0			5.5	5.5	5.5	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	1003	366	417	1369	528	67	780	142	68	780	413
v/s Ratio Prot	c0.14	0.27		0.09	0.33			0.22	0.04		c0.31	0.03
v/s Ratio Perm	c0.36		0.04			c0.44	0.14			0.25		0.06
v/c Ratio	1.15	0.86	0.14	0.68	0.77	1.03	0.58	0.89	0.41	1.04	1.28	0.26
Uniform Delay, d1	26.0	32.1	24.6	41.2	24.3	28.5	33.2	36.4	42.2	37.8	37.8	22.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	102.0	9.4	0.8	4.4	2.6	46.9	32.0	14.3	2.0	121.9	135.6	0.3
Delay (s)	128.0	41.6	25.4	45.5	26.9	75.4	65.2	50.7	44.2	159.6	173.3	22.6
Level of Service	F	D	C	D	C	E	E	D	D	F	F	C
Approach Delay (s)		58.8			44.4			50.0			152.7	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	913	79	88	1026	717	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2378
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2378
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	992	86	96	1115	779	1110
RTOR Reduction (vph)	0	54	0	0	0	9
Lane Group Flow (vph)	992	32	96	1115	779	1101
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	33.6	33.6	16.0	53.1	27.1	43.1
Effective Green, g (s)	33.6	33.6	16.0	53.1	27.1	43.1
Actuated g/C Ratio	0.37	0.37	0.18	0.59	0.30	0.48
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1189	391	283	1879	930	1138
v/s Ratio Prot	c0.31		0.06	0.35	0.25	c0.17
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.83	0.08	0.34	0.59	0.84	0.97
Uniform Delay, d1	25.7	18.2	32.4	11.6	29.4	22.8
Progression Factor	1.00	1.00	0.66	1.90	1.00	1.00
Incremental Delay, d2	7.0	0.4	0.5	1.0	6.7	19.1
Delay (s)	32.6	18.6	21.8	23.1	36.1	41.9
Level of Service	C	B	C	C	D	D
Approach Delay (s)	31.5			23.0	39.5	
Approach LOS	C			C	D	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1160	42	57	709	70	131	762	49	97	962	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	3185	1143	1559	3185	1196	1593	3140		1586	3185	976
Flt Permitted	0.15	1.00	1.00	0.17	1.00	1.00	0.95	1.00		0.25	1.00	1.00
Satd. Flow (perm)	250	3185	1143	277	3185	1196	1593	3140		420	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1261	46	62	771	76	142	828	53	105	1046	179
RTOR Reduction (vph)	0	0	28	0	0	56	0	5	0	0	0	115
Lane Group Flow (vph)	299	1261	18	62	771	20	142	876	0	105	1046	64
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Actuated Green, G (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.8	35.9		33.7	28.9	28.9
Effective Green, g (s)	35.7	35.7	35.7	23.7	23.7	23.7	11.8	35.9		33.7	28.9	28.9
Actuated g/C Ratio	0.40	0.40	0.40	0.26	0.26	0.26	0.13	0.40		0.37	0.32	0.32
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	3.0	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	232	1263	453	72	838	314	208	1252		219	1022	313
v/s Ratio Prot	c0.13	0.40			0.24		c0.09	0.28		0.03	c0.33	
v/s Ratio Perm	c0.38		0.02	0.22		0.02				0.15		0.07
v/c Ratio	1.29	1.00	0.04	0.86	0.92	0.06	0.68	0.70		0.48	1.02	0.21
Uniform Delay, d1	22.1	27.1	16.6	31.6	32.2	24.8	37.3	22.6		19.1	30.6	22.2
Progression Factor	1.06	1.03	1.00	0.89	0.92	11.67	0.61	1.56		1.00	1.00	1.00
Incremental Delay, d2	143.5	16.3	0.1	58.4	13.2	0.3	5.8	1.1		1.7	34.3	0.3
Delay (s)	166.9	44.3	16.7	86.5	42.9	290.2	28.5	36.4		20.8	64.8	22.5
Level of Service	F	D	B	F	D	F	C	D		C	E	C
Approach Delay (s)		66.3			66.6			35.3			55.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	1204	85	49	791	87	66	621	138	89	470	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00	1.00	0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3185	834	1496	3185	1050	1544	4287		1512	2927	
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.21	1.00		0.23	1.00	
Satd. Flow (perm)	311	3185	834	309	3185	1050	347	4287		374	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1309	92	53	860	95	72	675	150	97	511	217
RTOR Reduction (vph)	0	0	24	0	0	56	0	18	0	0	52	0
Lane Group Flow (vph)	292	1309	68	53	860	39	72	807	0	97	676	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	376	1886	493	126	1298	428	111	1381		120	943	
v/s Ratio Prot	c0.12	0.41			0.27			0.19			0.23	
v/s Ratio Perm	c0.34		0.08	0.17		0.04	0.21			c0.26		
v/c Ratio	0.78	0.69	0.14	0.42	0.66	0.09	0.65	0.58		0.81	0.72	
Uniform Delay, d1	12.7	12.7	8.1	19.1	21.6	16.4	26.1	25.5		28.0	26.9	
Progression Factor	1.07	1.58	1.68	0.63	0.64	0.67	1.06	1.10		1.00	1.00	
Incremental Delay, d2	6.0	1.3	0.4	8.3	2.2	0.3	25.0	1.8		42.4	4.7	
Delay (s)	19.6	21.4	14.0	20.4	16.0	11.3	52.8	29.8		70.4	31.5	
Level of Service	B	C	B	C	B	B	D	C		E	C	
Approach Delay (s)		20.7			15.8			31.7			36.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1219	57	40	736	6	0	0	0	96	627	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.97	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1580	3185	1027	1542	3175						4468	1266
Flt Permitted	0.22	1.00	1.00	0.15	1.00						0.99	1.00
Satd. Flow (perm)	366	3185	1027	243	3175						4468	1266
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1325	62	43	800	7	0	0	0	104	682	213
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	122	1325	47	43	806	0	0	0	0	0	786	195
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Effective Green, g (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Actuated g/C Ratio	0.53	0.53	0.53	0.40	0.40						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	309	1691	545	98	1280						1563	562
v/s Ratio Prot	0.04	c0.42			0.25							0.03
v/s Ratio Perm	0.17		0.05	0.18							0.18	0.12
v/c Ratio	0.39	0.78	0.09	0.44	0.63						0.50	0.35
Uniform Delay, d1	12.2	16.9	10.4	19.5	21.5						23.1	16.4
Progression Factor	1.34	1.12	1.73	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	2.7	0.2	13.6	2.4						1.2	0.4
Delay (s)	16.9	21.6	18.1	33.1	23.8						24.2	16.8
Level of Service	B	C	B	C	C						C	B
Approach Delay (s)		21.1			24.3			0.0			22.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	16	36	40	72	160	22	457	19	15	1157	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.92		1.00	0.88		1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.93	1.00	1.00
Frt	1.00	0.90		1.00	0.90		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1593	2632		1593	2505		1584	3146		1482	3185	1333
Flt Permitted	0.95	1.00		0.95	1.00		0.15	1.00		0.45	1.00	1.00
Satd. Flow (perm)	1593	2632		1593	2505		247	3146		695	3185	1333
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	17	39	43	78	174	24	497	21	16	1258	127
RTOR Reduction (vph)	0	30	0	0	68	0	0	2	0	0	0	26
Lane Group Flow (vph)	138	26	0	43	184	0	24	516	0	16	1258	101
Confl. Peds. (#/hr)			86			144	40		100	100		40
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	3	8		7	4			6			2	3
Permitted Phases							6			2		2
Actuated Green, G (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Effective Green, g (s)	5.0	20.7		3.0	18.7		51.6	51.6		51.6	51.6	56.6
Actuated g/C Ratio	0.06	0.23		0.03	0.21		0.57	0.57		0.57	0.57	0.63
Clearance Time (s)	4.0	5.5		4.0	5.5		5.2	5.2		5.2	5.2	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	88	605		53	520		141	1803		398	1826	838
v/s Ratio Prot	c0.09	0.01		0.03	c0.07			0.16			c0.39	0.01
v/s Ratio Perm							0.10			0.02		0.07
v/c Ratio	1.57	0.04		0.81	0.35		0.17	0.29		0.04	0.69	0.12
Uniform Delay, d1	42.5	26.9		43.2	30.5		9.1	9.8		8.4	13.5	6.7
Progression Factor	1.00	1.00		1.00	1.00		1.18	1.13		1.00	1.00	1.00
Incremental Delay, d2	303.3	0.0		59.7	0.4		2.6	0.4		0.2	2.2	0.1
Delay (s)	345.8	27.0		102.9	30.9		13.3	11.5		8.6	15.7	6.8
Level of Service	F	C		F	C		B	B		A	B	A
Approach Delay (s)		253.8			41.4			11.5			14.8	
Approach LOS		F			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.7
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	190	0	372	17	100	873	49	36	1116	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Util. Factor		1.00	1.00		0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.90		1.00		1.00	0.99		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00		1.00		0.99	1.00		0.97	1.00	1.00
Frt		1.00	0.85		0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1676	1277		3154		1581	3125		1542	3185	1300
Flt Permitted		1.00	1.00		1.00		0.11	1.00		0.15	1.00	1.00
Satd. Flow (perm)		1676	1277		3154		187	3125		241	3185	1300
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	207	0	404	18	109	949	53	39	1213	43
RTOR Reduction (vph)	0	0	15	0	4	0	0	4	0	0	0	26
Lane Group Flow (vph)	0	489	192	0	418	0	109	998	0	39	1213	17
Confl. Peds. (#/hr)			73	73		57	73		110	110		73
Confl. Bikes (#/hr)												3
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		4
Actuated Green, G (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Effective Green, g (s)		44.0	44.0		44.0		35.6	35.6		35.6	35.6	35.6
Actuated g/C Ratio		0.49	0.49		0.49		0.40	0.40		0.40	0.40	0.40
Clearance Time (s)		5.0	5.0		5.0		5.4	5.4		5.4	5.4	5.4
Lane Grp Cap (vph)		819	624		1541		73	1236		95	1259	514
v/s Ratio Prot		c0.29			0.13			0.32			0.38	
v/s Ratio Perm			0.15				c0.58			0.16		0.01
v/c Ratio		0.60	0.31		0.27		1.49	0.81		0.41	0.96	0.03
Uniform Delay, d1		16.6	13.8		13.6		27.2	24.2		19.6	26.6	16.7
Progression Factor		1.00	1.00		0.90		0.89	0.87		0.62	0.71	0.32
Incremental Delay, d2		3.2	1.3		0.3		276.8	5.3		5.7	10.2	0.1
Delay (s)		19.8	15.1		12.4		301.0	26.4		17.9	29.1	5.3
Level of Service		B	B		B		F	C		B	C	A
Approach Delay (s)		18.4			12.4			53.3			27.9	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.4
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	642	88	0	547	46	122	528	91	0	540	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95			1.00	
Frpb, ped/bikes		1.00	0.71		1.00	0.94	1.00	0.97			1.00	
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			1.00	
Frt		1.00	0.85		1.00	0.85	1.00	0.98			1.00	
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		1676	1013		1676	1346	1593	3025			1616	
Flt Permitted		1.00	1.00		1.00	1.00	0.13	1.00			1.00	
Satd. Flow (perm)		1676	1013		1676	1346	212	3025			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	698	96	0	595	50	133	574	99	0	587	0
RTOR Reduction (vph)	0	0	54	0	0	28	0	16	0	0	0	0
Lane Group Flow (vph)	0	698	42	0	595	22	133	657	0	0	587	0
Confl. Peds. (#/hr)			122			33			112	112		64
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					
Actuated Green, G (s)		38.8	38.8		38.8	38.8	40.8	40.8			28.6	
Effective Green, g (s)		38.8	38.8		38.8	38.8	40.8	40.8			28.6	
Actuated g/C Ratio		0.43	0.43		0.43	0.43	0.45	0.45			0.32	
Clearance Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			5.4	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		722	436		722	580	200	1371			513	
v/s Ratio Prot		c0.42			0.35		c0.05	0.22			c0.36	
v/s Ratio Perm			0.04			0.02	0.25					
v/c Ratio		0.97	0.10		0.82	0.04	0.67	0.48			1.14	
Uniform Delay, d1		25.0	15.2		22.6	14.8	34.5	17.2			30.7	
Progression Factor		0.66	0.04		0.29	0.39	0.82	0.89			0.96	
Incremental Delay, d2		24.9	0.4		5.9	0.1	7.2	0.2			82.0	
Delay (s)		41.4	1.1		12.5	5.9	35.4	15.5			111.4	
Level of Service		D	A		B	A	D	B			F	
Approach Delay (s)		36.6			12.0			18.8			111.4	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	41.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	525	192	62	597	0	0	0	0	19	658	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.79	1.00	1.00					1.00	1.00	0.43
Flpb, ped/bikes		1.00	1.00	1.00	1.00					0.86	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	1120	1593	1676					1365	3185	613
Flt Permitted		1.00	1.00	0.24	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	1120	410	1676					1365	3185	613
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	571	209	67	649	0	0	0	0	21	715	43
RTOR Reduction (vph)	0	0	11	0	0	0	0	0	0	0	0	24
Lane Group Flow (vph)	0	571	198	67	649	0	0	0	0	21	715	19
Confl. Peds. (#/hr)			130	130						54		304
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Effective Green, g (s)		40.2	40.2	40.2	40.2					40.5	40.5	40.5
Actuated g/C Ratio		0.45	0.45	0.45	0.45					0.45	0.45	0.45
Clearance Time (s)		4.8	4.8	4.8	4.8					4.5	4.5	4.5
Lane Grp Cap (vph)		748	500	183	748					614	1433	275
v/s Ratio Prot		0.34			c0.39						c0.22	
v/s Ratio Perm			0.18	0.16						0.02		0.03
v/c Ratio		0.76	0.40	0.37	0.87					0.03	0.50	0.07
Uniform Delay, d1		20.9	16.7	16.5	22.5					13.8	17.6	14.1
Progression Factor		1.39	1.62	1.00	1.00					0.21	0.19	0.00
Incremental Delay, d2		3.1	1.0	5.6	13.0					0.1	1.1	0.4
Delay (s)		32.0	28.0	22.0	35.5					3.0	4.5	0.5
Level of Service		C	C	C	D					A	A	A
Approach Delay (s)		31.0			34.2			0.0			4.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	175	130	27	315	1118	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	0.53
Flpb, ped/bikes	0.89	1.00	0.94	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1421	1887	1497	3185	3185	748
Flt Permitted	0.95	1.00	0.19	1.00	1.00	1.00
Satd. Flow (perm)	1421	1887	296	3185	3185	748
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	141	29	342	1215	92
RTOR Reduction (vph)	0	20	0	0	0	19
Lane Group Flow (vph)	190	121	29	342	1215	73
Confl. Peds. (#/hr)	100	129	196			196
Turn Type	Perm	Perm	Perm	NA	NA	Perm
Protected Phases				6	2	
Permitted Phases	4	4	6			2
Actuated Green, G (s)	20.0	20.0	60.3	60.3	60.3	60.3
Effective Green, g (s)	20.0	20.0	60.3	60.3	60.3	60.3
Actuated g/C Ratio	0.22	0.22	0.67	0.67	0.67	0.67
Clearance Time (s)	4.7	4.7	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	419	198	2133	2133	501
v/s Ratio Prot				0.11	c0.38	
v/s Ratio Perm	c0.13	0.06	0.10			0.10
v/c Ratio	0.60	0.29	0.15	0.16	0.57	0.14
Uniform Delay, d1	31.4	29.1	5.4	5.5	7.9	5.4
Progression Factor	1.00	1.00	1.00	1.00	2.20	3.04
Incremental Delay, d2	3.2	0.4	1.6	0.2	0.8	0.5
Delay (s)	34.7	29.5	7.0	5.7	18.3	17.0
Level of Service	C	C	A	A	B	B
Approach Delay (s)	32.5			5.8	18.2	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	108	1553	193	64	503	0	0	1323	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.95		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.99		1.00	1.00			1.00	0.82
Flpb, ped/bikes				0.88	1.00		1.00	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1406	3089		1593	3185			3185	1162
Flt Permitted				0.95	1.00		0.12	1.00			1.00	1.00
Satd. Flow (perm)				1406	3089		203	3185			3185	1162
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	117	1688	210	70	547	0	0	1438	254
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	0	0	117	1887	0	70	547	0	0	1438	246
Confl. Peds. (#/hr)				87		85	11					111
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				51.0	51.0		33.0	33.0			33.0	33.0
Effective Green, g (s)				51.0	51.0		33.0	33.0			33.0	33.0
Actuated g/C Ratio				0.57	0.57		0.37	0.37			0.37	0.37
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				796	1750		74	1167			1167	426
v/s Ratio Prot					c0.61			0.17			c0.45	
v/s Ratio Perm				0.08			0.34					0.21
v/c Ratio				0.15	1.08		0.95	0.47			1.23	0.58
Uniform Delay, d1				9.2	19.5		27.6	21.8			28.5	22.9
Progression Factor				1.33	0.98		1.38	1.44			1.36	1.49
Incremental Delay, d2				0.2	42.1		76.6	1.0			109.7	3.8
Delay (s)				12.5	61.2		114.6	32.4			148.5	38.0
Level of Service				B	E		F	C			F	D
Approach Delay (s)		0.0			58.4			41.7			131.9	
Approach LOS		A			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	84.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	44	1358	89	151	474	0	0	258	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Lane Util. Factor				1.00	0.95	1.00		0.95			1.00	1.00
Frpb, ped/bikes				1.00	1.00	0.81		1.00			1.00	0.69
Flpb, ped/bikes				0.59	1.00	1.00		0.96			1.00	1.00
Frt				1.00	1.00	0.85		1.00			1.00	0.85
Flt Protected				0.95	1.00	1.00		0.99			1.00	1.00
Satd. Flow (prot)				940	3185	1151		3016			1616	941
Flt Permitted				0.95	1.00	1.00		0.73			1.00	1.00
Satd. Flow (perm)				940	3185	1151		2235			1616	941
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	48	1476	97	164	515	0	0	280	171
RTOR Reduction (vph)	0	0	0	0	0	38	0	0	0	0	0	58
Lane Group Flow (vph)	0	0	0	48	1476	59	0	679	0	0	280	113
Confl. Peds. (#/hr)				173		129	190					190
Confl. Bikes (#/hr)						2						2
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)				43.2	43.2	43.2		37.5			37.5	37.5
Effective Green, g (s)				43.2	43.2	43.2		37.5			37.5	37.5
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.42	0.42
Clearance Time (s)				4.8	4.8	4.8		4.5			4.5	4.5
Vehicle Extension (s)				3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)				451	1528	552		931			673	392
v/s Ratio Prot					c0.46						0.17	
v/s Ratio Perm				0.05		0.05		c0.30				0.12
v/c Ratio				0.11	0.97	0.11		0.73			0.42	0.29
Uniform Delay, d1				12.8	22.7	12.8		22.0			18.5	17.4
Progression Factor				0.91	1.13	1.36		0.28			0.96	1.00
Incremental Delay, d2				0.3	12.3	0.3		2.2			0.2	0.2
Delay (s)				12.0	38.1	17.7		8.5			17.9	17.6
Level of Service				B	D	B		A			B	B
Approach Delay (s)		0.0			36.1			8.5			17.8	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	303	982	0	0	0	0	0	966	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.7	4.7
Lane Util. Factor				1.00	0.95						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.80
Flpb, ped/bikes				0.83	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1327	3185						4577	1144
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1327	3185						4577	1144
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	329	1067	0	0	0	0	0	1050	341
RTOR Reduction (vph)	0	0	0	52	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	277	1067	0	0	0	0	0	1050	331
Confl. Peds. (#/hr)				105								119
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				32.2	32.2						48.3	48.3
Effective Green, g (s)				32.2	32.2						48.3	48.3
Actuated g/C Ratio				0.36	0.36						0.54	0.54
Clearance Time (s)				4.8	4.8						4.7	4.7
Lane Grp Cap (vph)				474	1139						2456	613
v/s Ratio Prot					c0.33						0.23	
v/s Ratio Perm				0.21								c0.29
v/c Ratio				0.58	0.94						0.43	0.54
Uniform Delay, d1				23.5	27.9						12.5	13.6
Progression Factor				1.00	1.00						1.47	1.52
Incremental Delay, d2				5.2	15.2						0.5	3.2
Delay (s)				28.7	43.2						19.0	23.9
Level of Service				C	D						B	C
Approach Delay (s)		0.0			39.7			0.0			20.2	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	88	1295	0	0	129	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.5			3.0	
Lane Util. Factor	0.97	0.81			0.97	
Frt	1.00	1.00			1.00	
Flt Protected	0.95	1.00			0.95	
Satd. Flow (prot)	3090	6790			3090	
Flt Permitted	0.95	1.00			0.95	
Satd. Flow (perm)	3090	6790			3090	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1408	0	0	140	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	96	1408	0	0	140	0
Turn Type	Prot	NA			Perm	
Protected Phases	2	6				
Permitted Phases					3	
Actuated Green, G (s)	53.3	74.1			9.4	
Effective Green, g (s)	53.3	74.1			9.4	
Actuated g/C Ratio	0.59	0.82			0.10	
Clearance Time (s)	3.0	3.5			3.0	
Vehicle Extension (s)	3.0	3.0			3.0	
Lane Grp Cap (vph)	1829	5590			322	
v/s Ratio Prot	0.03	c0.21				
v/s Ratio Perm					c0.05	
v/c Ratio	0.05	0.25			0.43	
Uniform Delay, d1	7.7	1.8			37.8	
Progression Factor	1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.1			0.9	
Delay (s)	7.8	1.9			38.8	
Level of Service	A	A			D	
Approach Delay (s)		2.3	0.0		38.8	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	1104	152	0	0	0	0	1526	344	118	233	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Lane Util. Factor	1.00	0.86	1.00					0.91		0.97	1.00	
Frpb, ped/bikes	1.00	1.00	0.91					0.99		1.00	1.00	
Flpb, ped/bikes	0.70	1.00	1.00					1.00		1.00	1.00	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1120	5767	1302					4386		3090	1676	
Flt Permitted	0.95	1.00	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1120	5767	1302					4386		3090	1676	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	1200	165	0	0	0	0	1659	374	128	253	0
RTOR Reduction (vph)	0	0	108	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	132	1200	57	0	0	0	0	2017	0	128	253	0
Confl. Peds. (#/hr)	220		56						45			
Confl. Bikes (#/hr)			1									
Turn Type	Perm	NA	Perm					NA		Prot	NA	
Protected Phases		2						4		3	8	
Permitted Phases	2		2									
Actuated Green, G (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Effective Green, g (s)	31.1	31.1	31.1					38.1		6.9	49.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.42		0.08	0.54	
Clearance Time (s)	4.9	4.9	4.9					5.0		4.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Lane Grp Cap (vph)	387	1992	449					1856		236	912	
v/s Ratio Prot		c0.21						c0.46		c0.04	0.15	
v/s Ratio Perm	0.12		0.04									
v/c Ratio	0.34	0.60	0.13					1.09		0.54	0.28	
Uniform Delay, d1	21.8	24.3	20.2					25.9		40.0	11.0	
Progression Factor	1.00	1.01	1.31					0.48		1.00	1.00	
Incremental Delay, d2	2.3	1.3	0.6					46.7		2.5	0.8	
Delay (s)	24.2	26.0	27.0					59.1		42.6	11.8	
Level of Service	C	C	C					E		D	B	
Approach Delay (s)		25.9			0.0			59.1			22.1	
Approach LOS		C			A			E			C	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.9
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1491	128	0	0	0	0	792	101	118	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		1.00						1.00		0.95	1.00	
Frt		0.99						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5642						3029		1520	3185	
Flt Permitted		1.00						1.00		0.20	1.00	
Satd. Flow (perm)		5642						3029		319	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1621	139	0	0	0	0	861	110	128	1190	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1779	0	0	0	0	0	969	0	128	1190	0
Confl. Peds. (#/hr)			90						199	199		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		38.0						44.0		44.0	44.0	
Effective Green, g (s)		38.0						44.0		44.0	44.0	
Actuated g/C Ratio		0.42						0.49		0.49	0.49	
Clearance Time (s)		4.0						4.0		4.0	4.0	
Lane Grp Cap (vph)		2382						1480		155	1557	
v/s Ratio Prot								0.32			0.37	
v/s Ratio Perm		0.32								c0.40		
v/c Ratio		0.75						0.66		0.83	0.76	
Uniform Delay, d1		21.9						17.3		19.7	18.8	
Progression Factor		0.75						0.64		0.43	0.24	
Incremental Delay, d2		1.6						2.0		4.7	0.3	
Delay (s)		18.0						13.1		13.2	4.9	
Level of Service		B						B		B	A	
Approach Delay (s)		18.0			0.0			13.1			5.7	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	1453	81	0	0	0	0	471	178	0	361	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.97						0.90			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.96			1.00	
Flt Protected		1.00						1.00			1.00	
Satd. Flow (prot)		5385						2738			1616	
Flt Permitted		1.00						1.00			1.00	
Satd. Flow (perm)		5385						2738			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	168	1579	88	0	0	0	0	512	193	0	392	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1827	0	0	0	0	0	704	0	0	392	0
Confl. Peds. (#/hr)	288		266						373	373		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		43.0						36.7			36.7	
Effective Green, g (s)		43.0						36.7			36.7	
Actuated g/C Ratio		0.48						0.41			0.41	
Clearance Time (s)		5.0						5.3			5.3	
Lane Grp Cap (vph)		2572						1116			658	
v/s Ratio Prot								c0.26			0.24	
v/s Ratio Perm		0.34										
v/c Ratio		0.71						0.63			0.60	
Uniform Delay, d1		18.6						21.2			20.8	
Progression Factor		0.54						0.91			1.12	
Incremental Delay, d2		1.1						2.5			3.8	
Delay (s)		11.2						21.8			27.3	
Level of Service		B						C			C	
Approach Delay (s)		11.2			0.0			21.8			27.3	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1494	215	0	0	0	0	0	0	324	1144	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.8									4.5	
Lane Util. Factor		0.86									0.91	
Frpb, ped/bikes		0.96									1.00	
Flpb, ped/bikes		1.00									0.96	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5450									4329	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5450									4329	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1624	234	0	0	0	0	0	0	352	1243	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1846	0	0	0	0	0	0	0	0	1583	0
Confl. Peds. (#/hr)			159							110		
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		41.2									39.5	
Effective Green, g (s)		41.2									39.5	
Actuated g/C Ratio		0.46									0.44	
Clearance Time (s)		4.8									4.5	
Lane Grp Cap (vph)		2494									1899	
v/s Ratio Prot		c0.34										
v/s Ratio Perm											0.37	
v/c Ratio		0.74									0.83	
Uniform Delay, d1		20.0									22.3	
Progression Factor		1.42									0.48	
Incremental Delay, d2		1.5									4.2	
Delay (s)		29.8									15.0	
Level of Service		C									B	
Approach Delay (s)		29.8			0.0			0.0			15.0	
Approach LOS		C			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	431	1466	280	0	0	0	0	967	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0						5.0	5.0
Lane Util. Factor				0.76	0.76						0.91	1.00
Frpb, ped/bikes				1.00	0.90						1.00	0.66
Flpb, ped/bikes				0.62	0.98						1.00	1.00
Frt				1.00	0.98						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				750	5498						4577	934
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				750	5498						4577	934
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	468	1593	304	0	0	0	0	1051	282
RTOR Reduction (vph)	0	0	0	25	44	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	363	1933	0	0	0	0	0	1051	269
Confl. Peds. (#/hr)				416		443						285
Confl. Bikes (#/hr)						2						13
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				40.0	40.0						40.0	40.0
Effective Green, g (s)				40.0	40.0						40.0	40.0
Actuated g/C Ratio				0.44	0.44						0.44	0.44
Clearance Time (s)				5.0	5.0						5.0	5.0
Lane Grp Cap (vph)				333	2443						2034	415
v/s Ratio Prot											0.23	
v/s Ratio Perm				c0.48	0.35							c0.29
v/c Ratio				1.09	0.79						0.52	0.65
Uniform Delay, d1				25.0	21.4						18.0	19.5
Progression Factor				1.26	1.24						1.00	1.00
Incremental Delay, d2				72.2	2.3						0.9	7.6
Delay (s)				103.7	29.0						19.0	27.1
Level of Service				F	C						B	C
Approach Delay (s)		0.0			41.2			0.0			20.7	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1077	91	631	1454	0	0	0	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				4.0
Lane Util. Factor					0.86		0.97	0.91				0.88
Frpb, ped/bikes					0.97		1.00	1.00				1.00
Flpb, ped/bikes					1.00		1.00	1.00				1.00
Frt					0.99		1.00	1.00				0.85
Flt Protected					1.00		0.95	1.00				1.00
Satd. Flow (prot)					5517		3090	4577				2508
Flt Permitted					1.00		0.95	1.00				1.00
Satd. Flow (perm)					5517		3090	4577				2508
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1171	99	686	1580	0	0	0	443
RTOR Reduction (vph)	0	0	0	0	12	0	459	0	0	0	0	416
Lane Group Flow (vph)	0	0	0	0	1258	0	227	1580	0	0	0	27
Confl. Peds. (#/hr)						492						
Confl. Bikes (#/hr)						3						
Turn Type					NA		Prot	NA				Perm
Protected Phases					2		7	4				
Permitted Phases												1
Actuated Green, G (s)					32.9		24.8	39.6				5.5
Effective Green, g (s)					32.9		24.8	39.6				5.5
Actuated g/C Ratio					0.37		0.28	0.44				0.06
Clearance Time (s)					4.0		4.0	4.0				4.0
Vehicle Extension (s)					3.0		3.0	3.0				3.0
Lane Grp Cap (vph)					2016		851	2013				153
v/s Ratio Prot					c0.23		0.07	c0.35				
v/s Ratio Perm												c0.01
v/c Ratio					0.62		0.27	0.78				0.18
Uniform Delay, d1					23.5		25.5	21.6				40.1
Progression Factor					1.15		3.21	1.54				1.00
Incremental Delay, d2					1.2		0.5	2.0				0.5
Delay (s)					28.1		82.2	35.3				40.6
Level of Service					C		F	D				D
Approach Delay (s)		0.0			28.1			49.5			40.6	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	95	883	155	81	750	0	0	969	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Util. Factor				1.00	0.86		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.95		1.00	1.00			1.00	0.66
Flpb, ped/bikes				0.54	1.00		0.95	1.00			1.00	1.00
Frt				1.00	0.98		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				862	5350		1518	3185			3185	936
Flt Permitted				0.95	1.00		0.20	1.00			1.00	1.00
Satd. Flow (perm)				862	5350		323	3185			3185	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	960	168	88	815	0	0	1053	185
RTOR Reduction (vph)	0	0	0	0	35	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	103	1093	0	88	815	0	0	1053	174
Confl. Peds. (#/hr)				770		338	287					287
Confl. Bikes (#/hr)						8						5
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				30.0	30.0		50.2	50.2			50.2	50.2
Effective Green, g (s)				30.0	30.0		50.2	50.2			50.2	50.2
Actuated g/C Ratio				0.33	0.33		0.56	0.56			0.56	0.56
Clearance Time (s)				5.0	5.0		4.8	4.8			4.8	4.8
Lane Grp Cap (vph)				287	1783		180	1776			1776	522
v/s Ratio Prot					c0.20			0.26			c0.33	
v/s Ratio Perm				0.12			0.27					0.19
v/c Ratio				0.36	0.61		0.49	0.46			0.59	0.33
Uniform Delay, d1				22.7	25.1		12.1	11.8			13.1	10.8
Progression Factor				0.31	0.30		1.35	1.48			1.92	2.04
Incremental Delay, d2				3.0	1.4		8.1	0.7			0.9	1.1
Delay (s)				10.1	8.8		24.4	18.3			26.2	23.2
Level of Service				B	A		C	B			C	C
Approach Delay (s)		0.0			8.9			18.9			25.8	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.8
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	45	977	70	49	550	0	0	375	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			4.5			4.5	4.5
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.98			1.00			1.00	0.58
Flpb, ped/bikes					0.97			0.99			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					5396			3127			1616	801
Flt Permitted					1.00			0.89			1.00	1.00
Satd. Flow (perm)					5396			2785			1616	801
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	49	1062	76	53	598	0	0	408	73
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	0	1176	0	0	651	0	0	408	61
Confl. Peds. (#/hr)				691		442	542					542
Confl. Bikes (#/hr)						16						6
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					35.0			45.5			45.5	45.5
Effective Green, g (s)					35.0			45.5			45.5	45.5
Actuated g/C Ratio					0.39			0.51			0.51	0.51
Clearance Time (s)					5.0			4.5			4.5	4.5
Lane Grp Cap (vph)					2098			1407			816	404
v/s Ratio Prot											c0.25	
v/s Ratio Perm					0.22			0.23				0.08
v/c Ratio					0.56			0.46			0.50	0.15
Uniform Delay, d1					21.5			14.4			14.7	11.9
Progression Factor					0.50			1.48			1.80	2.06
Incremental Delay, d2					1.0			0.9			1.7	0.6
Delay (s)					11.7			22.2			28.3	25.2
Level of Service					B			C			C	C
Approach Delay (s)		0.0			11.7			22.2			27.8	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	155	733	0	0	0	0	0	1068	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frt					1.00						1.00	0.85
Flt Protected					0.99						1.00	1.00
Satd. Flow (prot)					5717						4577	1425
Flt Permitted					0.99						1.00	1.00
Satd. Flow (perm)					5717						4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	168	797	0	0	0	0	0	1161	229
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	0	36
Lane Group Flow (vph)	0	0	0	0	935	0	0	0	0	0	1161	193
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					35.3						45.5	45.5
Effective Green, g (s)					35.3						45.5	45.5
Actuated g/C Ratio					0.39						0.51	0.51
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2313	720
v/s Ratio Prot											c0.25	
v/s Ratio Perm					0.16							0.14
v/c Ratio					0.42						0.50	0.27
Uniform Delay, d1					19.9						14.7	12.7
Progression Factor					1.00						0.57	0.55
Incremental Delay, d2					0.6						0.4	0.5
Delay (s)					20.4						8.8	7.5
Level of Service					C						A	A
Approach Delay (s)		0.0			20.4			0.0			8.6	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1686	188	0	0	0	0	0	0	208	1368	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.7								4.6	
Lane Util. Factor		0.86	1.00								0.86	
Frpb, ped/bikes		1.00	0.64								1.00	
Flpb, ped/bikes		1.00	1.00								0.96	
Frt		1.00	0.85								1.00	
Flt Protected		1.00	1.00								0.99	
Satd. Flow (prot)		5767	918								5496	
Flt Permitted		1.00	1.00								0.99	
Satd. Flow (perm)		5767	918								5496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1833	204	0	0	0	0	0	0	226	1487	0
RTOR Reduction (vph)	0	0	10	0	0	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	1833	194	0	0	0	0	0	0	0	1701	0
Confl. Peds. (#/hr)			349							191		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		40.3	40.3								40.4	
Effective Green, g (s)		40.3	40.3								40.4	
Actuated g/C Ratio		0.45	0.45								0.45	
Clearance Time (s)		4.7	4.7								4.6	
Lane Grp Cap (vph)		2582	411								2467	
v/s Ratio Prot		c0.32										
v/s Ratio Perm			0.21								0.31	
v/c Ratio		0.71	0.47								0.69	
Uniform Delay, d1		20.1	17.4								19.8	
Progression Factor		1.00	1.00								1.16	
Incremental Delay, d2		1.7	3.8								1.3	
Delay (s)		21.8	21.2								24.2	
Level of Service		C	C								C	
Approach Delay (s)		21.7			0.0			0.0			24.2	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	639	1233	0	0	0	0	0	1640	217	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						4.7				
Lane Util. Factor	0.81	0.81						0.81				
Frpb, ped/bikes	1.00	1.00						0.96				
Flpb, ped/bikes	0.65	0.94						1.00				
Frt	1.00	1.00						0.98				
Flt Protected	0.95	0.99						1.00				
Satd. Flow (prot)	844	5043						6417				
Flt Permitted	0.95	0.99						1.00				
Satd. Flow (perm)	844	5043						6417				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	695	1340	0	0	0	0	0	1783	236	0	0	0
RTOR Reduction (vph)	12	12	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	384	1627	0	0	0	0	0	2009	0	0	0	0
Confl. Peds. (#/hr)	333								236			
Turn Type	Perm	NA						NA				
Protected Phases		2						8				
Permitted Phases	2											
Actuated Green, G (s)	40.2	40.2						40.3				
Effective Green, g (s)	40.2	40.2						40.3				
Actuated g/C Ratio	0.45	0.45						0.45				
Clearance Time (s)	4.8	4.8						4.7				
Lane Grp Cap (vph)	376	2252						2873				
v/s Ratio Prot								c0.31				
v/s Ratio Perm	c0.46	0.32										
v/c Ratio	1.02	0.72						0.70				
Uniform Delay, d1	24.9	20.3						20.0				
Progression Factor	0.45	0.38						0.80				
Incremental Delay, d2	44.4	1.4						0.9				
Delay (s)	55.5	9.1						17.0				
Level of Service	E	A						B				
Approach Delay (s)		18.2			0.0			17.0			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1145	155	0	0	0	0	820	115	102	934	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.91	
Frt		0.98						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5664						3185	1425	1593	4577	
Flt Permitted		1.00						1.00	1.00	0.24	1.00	
Satd. Flow (perm)		5664						3185	1425	410	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1245	168	0	0	0	0	891	125	111	1015	0
RTOR Reduction (vph)	0	27	0	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	1386	0	0	0	0	0	891	119	111	1015	0
Turn Type		NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		35.0						49.0	49.0	49.0	49.0	
Effective Green, g (s)		35.0						49.0	49.0	49.0	49.0	
Actuated g/C Ratio		0.39						0.54	0.54	0.54	0.54	
Clearance Time (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2202						1734	775	223	2491	
v/s Ratio Prot		c0.24						c0.28			0.22	
v/s Ratio Perm									0.08	0.27		
v/c Ratio		0.63						0.51	0.15	0.50	0.41	
Uniform Delay, d1		22.3						13.0	10.2	12.8	12.0	
Progression Factor		0.26						0.41	0.45	0.41	0.40	
Incremental Delay, d2		0.9						0.9	0.3	6.4	0.4	
Delay (s)		6.8						6.2	4.9	11.7	5.2	
Level of Service		A						A	A	B	A	
Approach Delay (s)		6.8			0.0			6.1			5.9	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	158	1066	132	0	0	0	0	611	108	0	419	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.3			5.3	
Lane Util. Factor		0.86						0.95			1.00	
Frpb, ped/bikes		0.95						0.94			1.00	
Flpb, ped/bikes		0.96						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		5149						2937			1616	
Flt Permitted		0.99						1.00			1.00	
Satd. Flow (perm)		5149						2937			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	172	1159	143	0	0	0	0	664	117	0	455	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1454	0	0	0	0	0	778	0	0	455	0
Confl. Peds. (#/hr)	288		266						373			
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)		40.0						39.7			39.7	
Effective Green, g (s)		40.0						39.7			39.7	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.3			5.3	
Vehicle Extension (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2288						1295			712	
v/s Ratio Prot								0.26			c0.28	
v/s Ratio Perm		0.28										
v/c Ratio		0.64						0.60			0.64	
Uniform Delay, d1		19.4						19.1			19.6	
Progression Factor		0.27						1.48			1.03	
Incremental Delay, d2		1.1						1.5			3.8	
Delay (s)		6.3						29.7			24.0	
Level of Service		A						C			C	
Approach Delay (s)		6.3			0.0			29.7			24.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1106	138	0	0	0	0	0	0	234	1071	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7									4.5	
Lane Util. Factor		0.86									0.91	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		5671									4536	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		5671									4536	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1202	150	0	0	0	0	0	0	254	1164	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	1334	0	0	0	0	0	0	0	0	1402	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		40.3									40.5	
Effective Green, g (s)		40.3									40.5	
Actuated g/C Ratio		0.45									0.45	
Clearance Time (s)		4.7									4.5	
Lane Grp Cap (vph)		2539									2041	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.31	
v/c Ratio		0.53									0.69	
Uniform Delay, d1		17.9									19.7	
Progression Factor		0.19									0.96	
Incremental Delay, d2		0.6									1.7	
Delay (s)		4.0									20.6	
Level of Service		A									C	
Approach Delay (s)		4.0			0.0			0.0			20.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	107	279	0	0	476	151	294	1500	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Lane Util. Factor	0.97	1.00			0.95	1.00	1.00	0.91	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	3090	1616			3185	1425	1593	4577	1374			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	3090	1616			3185	1425	1593	4577	1374			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	303	0	0	517	164	320	1630	83	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	136	0	0	61	0	0	0
Lane Group Flow (vph)	116	303	0	0	517	28	320	1630	22	0	0	0
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	3			3	3		4				
Permitted Phases		6			2		4		4			
Actuated Green, G (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Effective Green, g (s)	9.8	70.8			57.0	8.4	32.5	32.5	32.5			
Actuated g/C Ratio	0.08	0.59			0.48	0.07	0.27	0.27	0.27			
Clearance Time (s)	4.0	5.6			5.6	5.6	5.5	5.5	5.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	252	1028			1661	99	431	1239	372			
v/s Ratio Prot	c0.04	0.02			c0.02	0.02		c0.36				
v/s Ratio Perm		0.17			0.14		0.20		0.02			
v/c Ratio	0.46	0.29			0.31	0.29	0.74	1.32	0.06			
Uniform Delay, d1	52.6	12.2			19.4	53.0	39.9	43.8	32.4			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.2			0.1	1.6	11.0	147.8	0.3			
Delay (s)	53.9	12.4			19.5	54.5	50.9	191.6	32.7			
Level of Service	D	B			B	D	D	F	C			
Approach Delay (s)		23.9			27.9			163.0			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	115.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.7
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	277	201	81	449	0	0	0	0	47	1441	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9	4.9		4.9						4.8	
Lane Util. Factor		1.00	1.00		0.95						0.86	
Frpb, ped/bikes		1.00	0.65		1.00						0.98	
Flpb, ped/bikes		1.00	1.00		0.97						0.98	
Frt		1.00	0.85		1.00						0.99	
Flt Protected		1.00	1.00		0.99						1.00	
Satd. Flow (prot)		1676	932		3066						5514	
Flt Permitted		1.00	1.00		0.83						1.00	
Satd. Flow (perm)		1676	932		2578						5514	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	301	218	88	488	0	0	0	0	51	1566	87
RTOR Reduction (vph)	0	0	12	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	301	206	0	576	0	0	0	0	0	1695	0
Confl. Peds. (#/hr)			382	382						399		528
Confl. Bikes (#/hr)			13									28
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		6			2						4	
Permitted Phases			6	2						4		
Actuated Green, G (s)		42.1	42.1		42.1						38.2	
Effective Green, g (s)		42.1	42.1		42.1						38.2	
Actuated g/C Ratio		0.47	0.47		0.47						0.42	
Clearance Time (s)		4.9	4.9		4.9						4.8	
Lane Grp Cap (vph)		783	435		1205						2340	
v/s Ratio Prot		0.18										
v/s Ratio Perm			0.22		c0.22						0.31	
v/c Ratio		0.38	0.47		0.48						0.72	
Uniform Delay, d1		15.5	16.4		16.4						21.5	
Progression Factor		1.00	1.00		0.26						1.00	
Incremental Delay, d2		1.4	3.7		1.3						2.0	
Delay (s)		17.0	20.1		5.6						23.5	
Level of Service		B	C		A						C	
Approach Delay (s)		18.3			5.6			0.0			23.5	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.7
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	314	65	0	481	85	75	390	73	42	356	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Util. Factor		1.00	1.00		0.95	1.00		0.95			0.95	
Frpb, ped/bikes		1.00	0.53		1.00	0.46		0.91			0.99	
Flpb, ped/bikes		1.00	1.00		1.00	1.00		0.98			0.98	
Frt		1.00	0.85		1.00	0.85		0.98			0.99	
Flt Protected		1.00	1.00		1.00	1.00		0.99			0.99	
Satd. Flow (prot)		1616	762		3185	650		2765			3039	
Flt Permitted		1.00	1.00		1.00	1.00		0.82			0.86	
Satd. Flow (perm)		1616	762		3185	650		2295			2612	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	341	71	0	523	92	82	424	79	46	387	16
RTOR Reduction (vph)	0	0	7	0	0	8	0	5	0	0	1	0
Lane Group Flow (vph)	0	341	64	0	523	84	0	580	0	0	448	0
Confl. Peds. (#/hr)			726			1068	491		461	461		491
Confl. Bikes (#/hr)			47			63			12			18
Bus Blockages (#/hr)	0	9	0	0	0	0	9	0	0	9	0	0
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6			2			4			4	
Permitted Phases			6			2	4			4		
Actuated Green, G (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Effective Green, g (s)		45.0	45.0		45.0	45.0		39.0			39.0	
Actuated g/C Ratio		0.50	0.50		0.50	0.50		0.43			0.43	
Clearance Time (s)		3.0	3.0		3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)		808	381		1592	325		994			1131	
v/s Ratio Prot		c0.21			0.16							
v/s Ratio Perm			0.08			0.13		c0.25			0.17	
v/c Ratio		0.42	0.17		0.33	0.26		0.58			0.40	
Uniform Delay, d1		14.3	12.3		13.5	12.9		19.3			17.4	
Progression Factor		0.49	0.45		1.14	1.17		0.94			1.00	
Incremental Delay, d2		1.5	0.9		0.4	1.5		2.1			1.0	
Delay (s)		8.5	6.5		15.8	16.6		20.2			18.5	
Level of Service		A	A		B	B		C			B	
Approach Delay (s)		8.2			15.9			20.2			18.5	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	341	78	44	490	0	0	0	0	217	1491	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Util. Factor		1.00	1.00	1.00	1.00					1.00	0.95	1.00
Frpb, ped/bikes		1.00	0.58	1.00	1.00					1.00	1.00	0.67
Flpb, ped/bikes		1.00	1.00	0.81	1.00					0.59	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		1676	831	1297	1676					933	3185	959
Flt Permitted		1.00	1.00	0.43	1.00					0.95	1.00	1.00
Satd. Flow (perm)		1676	831	591	1676					933	3185	959
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	371	85	48	533	0	0	0	0	236	1621	55
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	371	72	48	533	0	0	0	0	236	1621	42
Confl. Peds. (#/hr)			521	521						175		273
Confl. Bikes (#/hr)			47									15
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Effective Green, g (s)		40.0	40.0	40.0	40.0					40.1	40.1	40.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44					0.45	0.45	0.45
Clearance Time (s)		5.0	5.0	5.0	5.0					4.9	4.9	4.9
Lane Grp Cap (vph)		744	369	262	744					415	1419	427
v/s Ratio Prot		0.22			c0.32						c0.51	
v/s Ratio Perm			0.09	0.08						0.25		0.04
v/c Ratio		0.50	0.20	0.18	0.72					0.57	1.14	0.10
Uniform Delay, d1		17.8	15.2	15.1	20.4					18.5	24.9	14.5
Progression Factor		1.40	1.51	0.49	0.42					1.99	1.86	2.56
Incremental Delay, d2		2.2	1.1	1.1	4.3					4.5	71.5	0.4
Delay (s)		27.2	24.1	8.5	12.9					41.3	117.9	37.4
Level of Service		C	C	A	B					D	F	D
Approach Delay (s)		26.6			12.5			0.0			106.2	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	586	0	0	510	170	122	1412	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Util. Factor	1.00	1.00			1.00	1.00		0.86				
Frpb, ped/bikes	1.00	1.00			1.00	0.56		0.96				
Flpb, ped/bikes	1.00	1.00			1.00	1.00		0.96				
Frt	1.00	1.00			1.00	0.85		0.99				
Flt Protected	0.95	1.00			1.00	1.00		1.00				
Satd. Flow (prot)	1593	1676			1676	803		5255				
Flt Permitted	0.33	1.00			1.00	1.00		1.00				
Satd. Flow (perm)	546	1676			1676	803		5255				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	637	0	0	554	185	133	1535	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	10	0	12	0	0	0	0
Lane Group Flow (vph)	52	637	0	0	554	175	0	1774	0	0	0	0
Confl. Peds. (#/hr)						608	265		302			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		6			2			8				
Permitted Phases	6					2	8					
Actuated Green, G (s)	48.3	48.3			48.3	48.3		32.2				
Effective Green, g (s)	48.3	48.3			48.3	48.3		32.2				
Actuated g/C Ratio	0.54	0.54			0.54	0.54		0.36				
Clearance Time (s)	4.7	4.7			4.7	4.7		4.8				
Lane Grp Cap (vph)	293	899			899	430		1880				
v/s Ratio Prot		c0.38			0.33							
v/s Ratio Perm	0.10					0.22		0.34				
v/c Ratio	0.18	0.71			0.62	0.41		0.94				
Uniform Delay, d1	10.7	15.6			14.4	12.4		28.0				
Progression Factor	0.68	0.65			1.81	1.95		1.02				
Incremental Delay, d2	1.2	4.3			1.9	1.7		1.4				
Delay (s)	8.4	14.4			28.1	25.8		30.0				
Level of Service	A	B			C	C		C				
Approach Delay (s)		14.0			27.5			30.0			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	465	67	23	481	119	0	794	56	0	1059	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes	1.00	1.00	0.56	1.00	1.00	0.56		0.95			0.90	
Flpb, ped/bikes	0.89	1.00	1.00	0.88	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1417	1676	801	1404	1676	799		3010			2800	
Flt Permitted	0.29	1.00	1.00	0.31	1.00	1.00		1.00			1.00	
Satd. Flow (perm)	436	1676	801	455	1676	799		3010			2800	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	505	73	25	523	129	0	863	61	0	1151	222
RTOR Reduction (vph)	0	0	2	0	0	2	0	4	0	0	4	0
Lane Group Flow (vph)	46	505	71	25	523	127	0	920	0	0	1369	0
Confl. Peds. (#/hr)	618		613	613		618			539			387
Turn Type	Perm	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Effective Green, g (s)	43.0	43.0	43.0	43.0	43.0	43.0		41.0			41.0	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.48	0.48		0.46			0.46	
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	208	800	382	217	800	381		1371			1275	
v/s Ratio Prot		0.30			c0.31			0.31			c0.49	
v/s Ratio Perm	0.11		0.09	0.05		0.16						
v/c Ratio	0.22	0.63	0.19	0.12	0.65	0.33		0.67			1.07	
Uniform Delay, d1	13.7	17.6	13.5	13.0	17.8	14.6		19.2			24.5	
Progression Factor	0.93	1.09	0.88	1.83	1.89	1.91		0.57			1.28	
Incremental Delay, d2	1.6	2.5	0.7	0.9	3.5	2.0		2.2			46.9	
Delay (s)	14.3	21.7	12.5	24.7	37.2	30.0		13.1			78.4	
Level of Service	B	C	B	C	D	C		B			E	
Approach Delay (s)		20.0			35.4			13.1			78.4	
Approach LOS		C			D			B			E	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	448	41	13	466	64	11	775	63	0	649	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		0.95			1.00	
Frpb, ped/bikes	1.00	1.00	0.31	1.00	1.00	0.62		0.95			1.00	
Flpb, ped/bikes	0.89	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.99			1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)	1413	1676	439	1593	1676	881		2994			1616	
Flt Permitted	0.29	1.00	1.00	0.31	1.00	1.00		0.90			1.00	
Satd. Flow (perm)	436	1676	439	523	1676	881		2683			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	487	45	14	507	70	12	842	68	0	705	0
RTOR Reduction (vph)	0	0	18	0	0	18	0	3	0	0	0	0
Lane Group Flow (vph)	30	487	27	14	507	52	0	919	0	0	705	0
Confl. Peds. (#/hr)	483		598			483	534		510			534
Confl. Bikes (#/hr)			8						6			1
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6		6	2		2	8					
Actuated Green, G (s)	39.1	39.1	39.1	39.1	39.1	39.1		40.4			40.4	
Effective Green, g (s)	39.1	39.1	39.1	39.1	39.1	39.1		40.4			40.4	
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43		0.45			0.45	
Clearance Time (s)	4.9	4.9	4.9	4.9	4.9	4.9		5.6			5.6	
Lane Grp Cap (vph)	189	728	190	227	728	382		1204			725	
v/s Ratio Prot		0.29			c0.30						c0.44	
v/s Ratio Perm	0.07		0.06	0.03		0.06		0.34				
v/c Ratio	0.16	0.67	0.14	0.06	0.70	0.14		0.76			0.97	
Uniform Delay, d1	15.5	20.3	15.3	14.8	20.6	15.3		20.8			24.3	
Progression Factor	1.02	1.20	1.42	0.85	1.05	1.08		0.86			0.51	
Incremental Delay, d2	1.4	3.8	1.2	0.4	4.5	0.6		1.9			24.8	
Delay (s)	17.1	28.2	23.0	13.0	26.1	17.1		19.7			37.1	
Level of Service	B	C	C	B	C	B		B			D	
Approach Delay (s)		27.2			24.7			19.7			37.1	
Approach LOS		C			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	450	79	64	414	0	0	0	0	71	959	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	1.00
Frpb, ped/bikes		1.00	0.60	1.00	1.00						1.00	0.43
Flpb, ped/bikes		1.00	1.00	0.88	1.00						0.96	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		1676	855	1409	1676						4399	618
Flt Permitted		1.00	1.00	0.31	1.00						1.00	1.00
Satd. Flow (perm)		1676	855	464	1676						4399	618
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	489	86	70	450	0	0	0	0	77	1042	153
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	489	66	70	450	0	0	0	0	0	1119	68
Confl. Peds. (#/hr)			458	458						234		312
Confl. Bikes (#/hr)			6									3
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		2			2						4	
Permitted Phases			2	2						4		4
Actuated Green, G (s)		38.3	38.3	38.3	38.3						40.2	40.2
Effective Green, g (s)		38.3	38.3	38.3	38.3						40.2	40.2
Actuated g/C Ratio		0.43	0.43	0.43	0.43						0.45	0.45
Clearance Time (s)		5.7	5.7	5.7	5.7						5.8	5.8
Lane Grp Cap (vph)		713	363	197	713						1964	276
v/s Ratio Prot		c0.29			0.27							
v/s Ratio Perm			0.08	0.15							0.25	0.11
v/c Ratio		0.69	0.18	0.36	0.63						0.57	0.25
Uniform Delay, d1		21.0	16.1	17.5	20.3						18.5	15.5
Progression Factor		1.60	1.93	1.00	1.00						1.38	4.56
Incremental Delay, d2		4.0	0.8	5.0	4.2						0.9	1.6
Delay (s)		37.6	31.9	22.4	24.5						26.3	72.2
Level of Service		D	C	C	C						C	E
Approach Delay (s)		36.7			24.2			0.0			31.9	
Approach LOS		D			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	2182	376	267	2316	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.3	5.3	5.0	5.0				
Lane Util. Factor					0.86	1.00	1.00	0.91				
Frpb, ped/bikes					1.00	0.78	1.00	1.00				
Flpb, ped/bikes					1.00	1.00	1.00	1.00				
Frt					1.00	0.85	1.00	1.00				
Flt Protected					1.00	1.00	0.95	1.00				
Satd. Flow (prot)					5767	1118	1593	4577				
Flt Permitted					1.00	1.00	0.95	1.00				
Satd. Flow (perm)					5767	1118	1593	4577				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2372	409	290	2517	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	122	93	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2372	287	197	2517	0	0	0	0
Confl. Peds. (#/hr)						192						
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			4				
Permitted Phases						2	4					
Actuated Green, G (s)					39.7	39.7	28.0	28.0				
Effective Green, g (s)					39.7	39.7	28.0	28.0				
Actuated g/C Ratio					0.44	0.44	0.31	0.31				
Clearance Time (s)					5.3	5.3	5.0	5.0				
Lane Grp Cap (vph)					2543	493	495	1423				
v/s Ratio Prot					c0.41			c0.55				
v/s Ratio Perm						0.26	0.12					
v/c Ratio					0.93	0.58	0.40	1.77				
Uniform Delay, d1					23.9	18.9	24.4	31.0				
Progression Factor					1.00	1.00	0.75	0.86				
Incremental Delay, d2					7.8	5.0	1.6	347.9				
Delay (s)					31.7	23.9	20.0	374.7				
Level of Service					C	C	B	F				
Approach Delay (s)		0.0			30.5			338.0			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	185.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.3
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	1303	116	73	797	0	0	960	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Util. Factor				1.00	0.91		1.00	0.95			0.95	1.00
Frpb, ped/bikes				1.00	0.98		1.00	1.00			1.00	0.68
Flpb, ped/bikes				0.73	1.00		0.96	1.00			1.00	1.00
Frt				1.00	0.99		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1160	4414		1522	3185			3185	975
Flt Permitted				0.95	1.00		0.19	1.00			1.00	1.00
Satd. Flow (perm)				1160	4414		305	3185			3185	975
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	1416	126	79	866	0	0	1043	198
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	101	1530	0	79	866	0	0	1043	197
Confl. Peds. (#/hr)				191		198	246					246
Confl. Bikes (#/hr)						2						1
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)				35.0	35.0		49.0	49.0			49.0	49.0
Effective Green, g (s)				35.0	35.0		49.0	49.0			49.0	49.0
Actuated g/C Ratio				0.39	0.39		0.54	0.54			0.54	0.54
Clearance Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				451	1716		166	1734			1734	530
v/s Ratio Prot					c0.35			0.27			c0.33	
v/s Ratio Perm				0.09			0.26					0.20
v/c Ratio				0.22	0.89		0.48	0.50			0.60	0.37
Uniform Delay, d1				18.4	25.7		12.6	12.8			13.9	11.7
Progression Factor				1.85	1.77		1.78	1.79			0.96	1.05
Incremental Delay, d2				0.8	5.6		8.0	0.9			0.1	0.2
Delay (s)				34.8	51.3		30.5	23.9			13.5	12.4
Level of Service				C	D		C	C			B	B
Approach Delay (s)		0.0			50.2			24.4			13.3	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	79	1252	73	102	789	0	0	476	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0			5.3			5.3	5.3
Lane Util. Factor					0.86			0.95			1.00	1.00
Frpb, ped/bikes					0.99			1.00			1.00	0.68
Flpb, ped/bikes					0.99			1.00			1.00	1.00
Frt					0.99			1.00			1.00	0.85
Flt Protected					1.00			0.99			1.00	1.00
Satd. Flow (prot)					5598			3167			1616	936
Flt Permitted					1.00			0.61			1.00	1.00
Satd. Flow (perm)					5598			1952			1616	936
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	1361	79	111	858	0	0	517	235
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	0	0	0	60
Lane Group Flow (vph)	0	0	0	0	1517	0	0	969	0	0	517	175
Confl. Peds. (#/hr)				63		125	203					203
Confl. Bikes (#/hr)						1						
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA		pm+pt	NA			NA	Perm
Protected Phases					2		3	8			4	
Permitted Phases				2			8					4
Actuated Green, G (s)					37.0			42.7			28.7	28.7
Effective Green, g (s)					37.0			42.7			28.7	28.7
Actuated g/C Ratio					0.41			0.47			0.32	0.32
Clearance Time (s)					5.0			5.3			5.3	5.3
Lane Grp Cap (vph)					2301			1043			515	298
v/s Ratio Prot								c0.09			0.32	
v/s Ratio Perm					0.27			c0.35				0.19
v/c Ratio					0.66			0.93			1.00	0.59
Uniform Delay, d1					21.4			22.2			30.6	25.7
Progression Factor					1.76			1.49			1.61	2.05
Incremental Delay, d2					1.2			10.9			25.9	3.3
Delay (s)					38.8			43.9			75.3	56.1
Level of Service					D			D			E	E
Approach Delay (s)		0.0			38.8			43.9			69.3	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.6
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	130	1181	0	0	0	0	0	770	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.7						4.5	4.5
Lane Util. Factor					0.86						0.91	1.00
Frpb, ped/bikes					1.00						1.00	0.90
Flpb, ped/bikes					0.97						1.00	1.00
Frt					1.00						1.00	0.85
Flt Protected					1.00						1.00	1.00
Satd. Flow (prot)					5561						4577	1283
Flt Permitted					1.00						1.00	1.00
Satd. Flow (perm)					5561						4577	1283
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	141	1284	0	0	0	0	0	837	234
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	0	0	0	1404	0	0	0	0	0	837	223
Confl. Peds. (#/hr)				271								63
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)					36.3						44.5	44.5
Effective Green, g (s)					36.3						44.5	44.5
Actuated g/C Ratio					0.40						0.49	0.49
Clearance Time (s)					4.7						4.5	4.5
Lane Grp Cap (vph)					2242						2263	634
v/s Ratio Prot											c0.18	
v/s Ratio Perm					0.25							0.17
v/c Ratio					0.63						0.37	0.35
Uniform Delay, d1					21.4						14.1	13.9
Progression Factor					1.00						1.83	1.92
Incremental Delay, d2					1.3						0.4	1.3
Delay (s)					22.8						26.1	28.0
Level of Service					C						C	C
Approach Delay (s)		0.0			22.8			0.0			26.5	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	346	1737	0	0	0	0	0	1522	232	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.4	5.4						5.2	5.2			
Lane Util. Factor	0.81	0.81						0.95	1.00			
Frpb, ped/bikes	1.00	1.00						1.00	0.67			
Flpb, ped/bikes	0.85	1.00						1.00	1.00			
Frt	1.00	1.00						1.00	0.85			
Flt Protected	0.95	1.00						1.00	1.00			
Satd. Flow (prot)	1094	5410						3185	958			
Flt Permitted	0.95	1.00						1.00	1.00			
Satd. Flow (perm)	1094	5410						3185	958			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	376	1888	0	0	0	0	0	1654	252	0	0	0
RTOR Reduction (vph)	17	17	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	321	1909	0	0	0	0	0	1654	237	0	0	0
Confl. Peds. (#/hr)	107								232			
Confl. Bikes (#/hr)									19			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						4				
Permitted Phases	2								4			
Actuated Green, G (s)	34.6	34.6						44.8	44.8			
Effective Green, g (s)	34.6	34.6						44.8	44.8			
Actuated g/C Ratio	0.38	0.38						0.50	0.50			
Clearance Time (s)	5.4	5.4						5.2	5.2			
Lane Grp Cap (vph)	420	2079						1585	476			
v/s Ratio Prot								c0.52				
v/s Ratio Perm	0.29	0.35							0.25			
v/c Ratio	0.77	0.92						1.04	0.50			
Uniform Delay, d1	24.2	26.4						22.6	15.1			
Progression Factor	1.00	1.00						1.32	1.56			
Incremental Delay, d2	12.5	8.0						21.8	0.3			
Delay (s)	36.6	34.4						51.6	24.0			
Level of Service	D	C						D	C			
Approach Delay (s)		34.7			0.0			48.0			0.0	
Approach LOS		C			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1480	280	0	0	0	0	0	0	181	1444	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0								5.6	5.6	
Lane Util. Factor		0.86								1.00	0.86	
Frt		0.98								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		5630								1593	5767	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		5630								1593	5767	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1609	304	0	0	0	0	0	0	197	1570	0
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	12	0	0
Lane Group Flow (vph)	0	1904	0	0	0	0	0	0	0	185	1570	0
Turn Type		NA								Perm	NA	
Protected Phases		2									4	
Permitted Phases										4		
Actuated Green, G (s)		35.0								44.4	44.4	
Effective Green, g (s)		35.0								44.4	44.4	
Actuated g/C Ratio		0.39								0.49	0.49	
Clearance Time (s)		5.0								5.6	5.6	
Lane Grp Cap (vph)		2189								785	2845	
v/s Ratio Prot		c0.34									c0.27	
v/s Ratio Perm										0.12		
v/c Ratio		0.87								0.24	0.55	
Uniform Delay, d1		25.4								13.1	15.9	
Progression Factor		1.65								0.48	0.73	
Incremental Delay, d2		2.4								0.5	0.6	
Delay (s)		44.3								6.8	12.1	
Level of Service		D								A	B	
Approach Delay (s)		44.3			0.0			0.0			11.5	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.6
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	1442	46	0	0	0	0	636	99	104	424	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0			3.0	
Lane Util. Factor		0.86						0.95			0.95	
Frpb, ped/bikes		0.99						0.95			1.00	
Flpb, ped/bikes		0.96						1.00			0.99	
Frt		1.00						0.98			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		5450						2976			3109	
Flt Permitted		0.99						1.00			0.66	
Satd. Flow (perm)		5450						2976			2076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	1567	50	0	0	0	0	691	108	113	461	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1821	0	0	0	0	0	799	0	0	574	0
Confl. Peds. (#/hr)	293		181						293	246		
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						4			4	
Permitted Phases	2									4		
Actuated Green, G (s)		37.0						47.0			47.0	
Effective Green, g (s)		37.0						47.0			47.0	
Actuated g/C Ratio		0.41						0.52			0.52	
Clearance Time (s)		3.0						3.0			3.0	
Lane Grp Cap (vph)		2240						1554			1084	
v/s Ratio Prot								0.27				
v/s Ratio Perm		0.33									c0.28	
v/c Ratio		0.81						0.51			0.53	
Uniform Delay, d1		23.4						14.0			14.2	
Progression Factor		1.03						1.00			0.67	
Incremental Delay, d2		2.0						1.2			1.8	
Delay (s)		26.0						15.3			11.3	
Level of Service		C						B			B	
Approach Delay (s)		26.0			0.0			15.3			11.3	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1755	261	0	0	0	0	0	0	251	2000	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4	5.4							4.8	4.8	
Lane Util. Factor		0.91	1.00							1.00	0.91	
Frpb, ped/bikes		1.00	0.83							1.00	1.00	
Flpb, ped/bikes		1.00	1.00							0.93	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		4577	1188							1476	4577	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		4577	1188							1476	4577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1908	284	0	0	0	0	0	0	273	2174	0
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	15	0	0
Lane Group Flow (vph)	0	1908	271	0	0	0	0	0	0	258	2174	0
Confl. Peds. (#/hr)			99							49		
Turn Type		NA	Perm							Perm	NA	
Protected Phases		2									4	
Permitted Phases			2							4		
Actuated Green, G (s)		35.6	35.6							44.2	44.2	
Effective Green, g (s)		35.6	35.6							44.2	44.2	
Actuated g/C Ratio		0.40	0.40							0.49	0.49	
Clearance Time (s)		5.4	5.4							4.8	4.8	
Lane Grp Cap (vph)		1810	469							724	2247	
v/s Ratio Prot		c0.42									c0.48	
v/s Ratio Perm			0.23							0.18		
v/c Ratio		1.05	0.58							0.36	0.97	
Uniform Delay, d1		27.2	21.3							14.1	22.2	
Progression Factor		0.73	0.63							0.96	0.76	
Incremental Delay, d2		34.8	4.0							0.8	9.1	
Delay (s)		54.6	17.4							14.4	26.0	
Level of Service		D	B							B	C	
Approach Delay (s)		49.8			0.0			0.0			24.7	
Approach LOS		D			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	546	2685	0	0	0	0	0	2217	335	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.9						4.7	4.7			
Lane Util. Factor		0.91						0.91	1.00			
Frpb, ped/bikes		1.00						1.00	0.91			
Flpb, ped/bikes		0.97						1.00	1.00			
Frt		1.00						1.00	0.85			
Flt Protected		0.99						1.00	1.00			
Satd. Flow (prot)		4414						4577	1291			
Flt Permitted		0.99						1.00	1.00			
Satd. Flow (perm)		4414						4577	1291			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	593	2918	0	0	0	0	0	2410	364	0	0	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	14	0	0	0
Lane Group Flow (vph)	0	3501	0	0	0	0	0	2410	350	0	0	0
Confl. Peds. (#/hr)	102								59			
Turn Type	Perm	NA						NA	Perm			
Protected Phases		2						8				
Permitted Phases	2								8			
Actuated Green, G (s)		45.1						35.3	35.3			
Effective Green, g (s)		45.1						35.3	35.3			
Actuated g/C Ratio		0.50						0.39	0.39			
Clearance Time (s)		4.9						4.7	4.7			
Lane Grp Cap (vph)		2211						1795	506			
v/s Ratio Prot								c0.53				
v/s Ratio Perm		0.79							0.27			
v/c Ratio		1.58						1.34	0.69			
Uniform Delay, d1		22.4						27.4	22.8			
Progression Factor		1.36						0.73	0.66			
Incremental Delay, d2		264.2						157.6	6.7			
Delay (s)		294.7						177.4	21.8			
Level of Service		F						F	C			
Approach Delay (s)		294.7			0.0			157.0			0.0	
Approach LOS		F			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	233.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	1524	57	0	0	0	0	706	74	123	1019	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.0						3.0		3.0	3.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frpb, ped/bikes		0.99						0.97		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.94	1.00	
Frt		0.99						0.99		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4427						3051		1501	3185	
Flt Permitted		1.00						1.00		0.24	1.00	
Satd. Flow (perm)		4427						3051		374	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	1657	62	0	0	0	0	767	80	134	1108	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	1800	0	0	0	0	0	846	0	134	1108	0
Confl. Peds. (#/hr)	200		256						186	186		127
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		41.0						43.0		43.0	43.0	
Effective Green, g (s)		41.0						43.0		43.0	43.0	
Actuated g/C Ratio		0.46						0.48		0.48	0.48	
Clearance Time (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		2016						1457		178	1521	
v/s Ratio Prot								0.28			0.35	
v/s Ratio Perm		0.41								c0.36		
v/c Ratio		0.89						0.58		0.75	0.73	
Uniform Delay, d1		22.5						17.0		19.2	18.8	
Progression Factor		1.31						0.57		0.43	0.42	
Incremental Delay, d2		0.7						1.3		22.2	2.7	
Delay (s)		30.2						10.9		30.4	10.5	
Level of Service		C						B		C	B	
Approach Delay (s)		30.2			0.0			10.9			12.7	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	1507	115	0	0	0	0	893	116	0	590	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8						5.5			5.5	
Lane Util. Factor	1.00	0.91						0.95			1.00	
Frpb, ped/bikes	1.00	0.96						0.96			1.00	
Flpb, ped/bikes	0.68	1.00						1.00			1.00	
Frt	1.00	0.99						0.98			1.00	
Flt Protected	0.95	1.00						1.00			1.00	
Satd. Flow (prot)	1076	4355						3005			1616	
Flt Permitted	0.95	1.00						1.00			1.00	
Satd. Flow (perm)	1076	4355						3005			1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	1638	125	0	0	0	0	971	126	0	641	0
RTOR Reduction (vph)	0	10	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	213	1753	0	0	0	0	0	1096	0	0	641	0
Confl. Peds. (#/hr)	296		272						287	287		
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0
Turn Type	Perm	NA						NA			NA	
Protected Phases		2						8			4	
Permitted Phases	2											
Actuated Green, G (s)	39.2	39.2						40.5			40.5	
Effective Green, g (s)	39.2	39.2						40.5			40.5	
Actuated g/C Ratio	0.44	0.44						0.45			0.45	
Clearance Time (s)	4.8	4.8						5.5			5.5	
Lane Grp Cap (vph)	468	1896						1352			727	
v/s Ratio Prot		c0.40						0.36			c0.40	
v/s Ratio Perm	0.20											
v/c Ratio	0.46	0.92						0.81			0.88	
Uniform Delay, d1	17.9	24.0						21.4			22.6	
Progression Factor	0.52	0.67						0.82			0.44	
Incremental Delay, d2	1.7	5.4						2.4			6.8	
Delay (s)	11.0	21.4						19.9			16.8	
Level of Service	B	C						B			B	
Approach Delay (s)		20.3			0.0			19.9			16.8	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	332	1017	130	0	0	0	0	1293	100	80	923	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Util. Factor	1.00	0.91						0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.96						1.00	0.78	1.00	1.00	
Flpb, ped/bikes	0.77	1.00						1.00	1.00	1.00	1.00	
Frt	1.00	0.98						1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1221	4341						3185	1110	1593	3185	
Flt Permitted	0.95	1.00						1.00	1.00	0.10	1.00	
Satd. Flow (perm)	1221	4341						3185	1110	174	3185	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	361	1105	141	0	0	0	0	1405	109	87	1003	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	12	0	0	0
Lane Group Flow (vph)	361	1228	0	0	0	0	0	1405	97	87	1003	0
Confl. Peds. (#/hr)	190		258						142	142		
Confl. Bikes (#/hr)			1						1			
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Effective Green, g (s)	29.8	29.8						50.1	50.1	50.1	50.1	
Actuated g/C Ratio	0.33	0.33						0.56	0.56	0.56	0.56	
Clearance Time (s)	5.2	5.2						4.9	4.9	4.9	4.9	
Lane Grp Cap (vph)	404	1437						1772	617	96	1772	
v/s Ratio Prot		0.28						0.44			0.31	
v/s Ratio Perm	c0.30								0.09	c0.50		
v/c Ratio	0.89	0.85						0.79	0.16	0.91	0.57	
Uniform Delay, d1	28.6	28.1						15.8	9.7	17.8	12.9	
Progression Factor	1.58	1.61						1.61	2.01	1.00	1.00	
Incremental Delay, d2	11.6	2.7						2.1	0.3	68.9	1.3	
Delay (s)	56.9	47.8						27.6	19.8	86.7	14.2	
Level of Service	E	D						C	B	F	B	
Approach Delay (s)		49.9			0.0			27.1			20.0	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.1
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	190	1060	227	108	1648	237	272	1483	202	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00			
Frpb, ped/bikes	1.00	1.00	0.75	1.00	1.00	0.67	1.00	1.00	0.87			
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.73	1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1593	4577	1072	1475	4577	950	1164	3185	1246			
Flt Permitted	0.14	1.00	1.00	0.23	1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	243	4577	1072	363	4577	950	1164	3185	1246			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	1152	247	117	1791	258	296	1612	220	0	0	0
RTOR Reduction (vph)	0	0	95	0	0	98	0	0	45	0	0	0
Lane Group Flow (vph)	207	1152	152	117	1791	160	296	1612	175	0	0	0
Confl. Peds. (#/hr)			212	212		237	263		102			
Confl. Bikes (#/hr)			16			19			15			
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm			
Protected Phases	1	6	3		2		3	8				
Permitted Phases	6		6	2		2	8		8			
Actuated Green, G (s)	35.6	35.6	55.4	23.6	23.6	23.6	42.4	42.4	42.4			
Effective Green, g (s)	35.6	35.6	55.4	23.6	23.6	23.6	42.4	42.4	42.4			
Actuated g/C Ratio	0.40	0.40	0.62	0.26	0.26	0.26	0.47	0.47	0.47			
Clearance Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	1810	659	95	1200	249	548	1500	587			
v/s Ratio Prot	c0.09	0.25	0.05		c0.39		0.12	c0.51				
v/s Ratio Perm	0.29		0.09	0.32		0.17	0.14		0.14			
v/c Ratio	0.96	0.64	0.23	1.23	1.49	0.64	0.54	1.07	0.30			
Uniform Delay, d1	22.7	22.0	7.8	33.2	33.2	29.5	16.9	23.8	14.6			
Progression Factor	1.00	1.00	1.00	1.08	1.05	1.20	0.55	0.74	0.30			
Incremental Delay, d2	48.9	1.7	0.2	143.1	224.0	6.6	0.1	35.1	0.1			
Delay (s)	71.6	23.7	7.9	179.0	259.0	42.0	9.5	52.6	4.5			
Level of Service	E	C	A	F	F	D	A	D	A			
Approach Delay (s)		27.4			228.8			41.6			0.0	
Approach LOS		C			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	106.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1045	66	56	1367	0	0	0	0	70	1322	417
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Util. Factor		0.95	1.00	1.00	0.95						0.86	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)		3185	1425	1593	3185						5753	1425
Flt Permitted		1.00	1.00	0.14	1.00						1.00	1.00
Satd. Flow (perm)		3185	1425	240	3185						5753	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1136	72	61	1486	0	0	0	0	76	1437	453
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	0	14
Lane Group Flow (vph)	0	1136	57	61	1486	0	0	0	0	0	1513	439
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases			6	2						4		4
Actuated Green, G (s)		43.0	43.0	43.0	43.0						36.7	36.7
Effective Green, g (s)		43.0	43.0	43.0	43.0						36.7	36.7
Actuated g/C Ratio		0.48	0.48	0.48	0.48						0.41	0.41
Clearance Time (s)		5.0	5.0	5.0	5.0						5.3	5.3
Lane Grp Cap (vph)		1521	680	114	1521						2345	581
v/s Ratio Prot		0.36			c0.47							
v/s Ratio Perm			0.04	0.25							0.26	c0.31
v/c Ratio		0.75	0.08	0.54	0.98						0.65	0.76
Uniform Delay, d1		19.1	12.8	16.5	23.0						21.4	22.8
Progression Factor		0.39	0.14	1.00	1.00						1.66	1.66
Incremental Delay, d2		2.8	0.2	16.8	18.2						1.1	7.4
Delay (s)		10.4	2.1	33.3	41.2						36.8	45.2
Level of Service		B	A	C	D						D	D
Approach Delay (s)		9.9			40.9			0.0			38.7	
Approach LOS		A			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	1050	45	32	1112	73	100	525	54	31	309	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95			0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98			0.99			0.95	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Frt	1.00	0.99		1.00	0.99			0.99			0.96	
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	
Satd. Flow (prot)	1593	3125		1593	3086			3046			2888	
Flt Permitted	0.11	1.00		0.13	1.00			0.74			0.87	
Satd. Flow (perm)	179	3125		225	3086			2261			2507	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	1141	49	35	1209	79	109	571	59	34	336	127
RTOR Reduction (vph)	0	3	0	0	5	0	0	7	0	0	5	0
Lane Group Flow (vph)	146	1187	0	35	1283	0	0	732	0	0	492	0
Confl. Peds. (#/hr)	294		177	177		294	116		93	93		116
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Effective Green, g (s)	50.2	50.2		50.2	50.2			40.2			40.2	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.40			0.40	
Clearance Time (s)	4.8	4.8		4.8	4.8			4.8			4.8	
Lane Grp Cap (vph)	89	1568		112	1549			908			1007	
v/s Ratio Prot		0.38			0.42							
v/s Ratio Perm	c0.82			0.16				c0.32			0.20	
v/c Ratio	1.64	0.76		0.31	0.83			0.81			0.49	
Uniform Delay, d1	24.9	20.0		14.7	21.2			26.5			22.3	
Progression Factor	1.00	1.00		0.48	0.59			1.00			1.00	
Incremental Delay, d2	333.0	3.5		3.8	2.8			7.6			1.7	
Delay (s)	357.9	23.5		10.9	15.3			34.1			23.9	
Level of Service	F	C		B	B			C			C	
Approach Delay (s)		60.0			15.2			34.1			23.9	
Approach LOS		E			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.6
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	977	112	111	1314	0	0	0	0	121	1609	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95					1.00	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)		3136		1593	3185					1593	4577	1425
Flt Permitted		1.00		0.14	1.00					0.95	1.00	1.00
Satd. Flow (perm)		3136		228	3185					1593	4577	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1062	122	121	1428	0	0	0	0	132	1749	305
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	1183	0	121	1428	0	0	0	0	132	1749	292
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		6			2						4	
Permitted Phases				2						4		4
Actuated Green, G (s)		50.0		50.0	50.0					40.0	40.0	40.0
Effective Green, g (s)		50.0		50.0	50.0					40.0	40.0	40.0
Actuated g/C Ratio		0.50		0.50	0.50					0.40	0.40	0.40
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	5.0
Lane Grp Cap (vph)		1568		114	1592					637	1830	570
v/s Ratio Prot		0.38			0.45						c0.38	
v/s Ratio Perm				c0.53						0.08		0.20
v/c Ratio		0.75		1.06	0.90					0.21	0.96	0.51
Uniform Delay, d1		20.1		25.0	22.7					19.6	29.1	22.6
Progression Factor		1.04		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		2.2		101.8	8.3					0.7	12.9	3.3
Delay (s)		23.1		126.8	31.0					20.4	42.0	25.9
Level of Service		C		F	C					C	D	C
Approach Delay (s)		23.1			38.5			0.0			38.5	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	965	0	0	1243	87	152	1026	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Util. Factor	1.00	0.95			0.95			0.91	1.00			
Frpb, ped/bikes	1.00	1.00			0.99			1.00	0.93			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.99			1.00	0.85			
Flt Protected	0.95	1.00			1.00			0.99	1.00			
Satd. Flow (prot)	1593	3185			3132			4529	1327			
Flt Permitted	0.09	1.00			1.00			0.99	1.00			
Satd. Flow (perm)	145	3185			3132			4529	1327			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1049	0	0	1351	95	165	1115	51	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	0	32	0	0	0
Lane Group Flow (vph)	187	1049	0	0	1440	0	0	1280	19	0	0	0
Confl. Peds. (#/hr)	65					65	22		41			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		6			2			4				
Permitted Phases	6						4		4			
Actuated Green, G (s)	46.1	46.1			46.1			34.0	34.0			
Effective Green, g (s)	46.1	46.1			46.1			34.0	34.0			
Actuated g/C Ratio	0.51	0.51			0.51			0.38	0.38			
Clearance Time (s)	4.9	4.9			4.9			5.0	5.0			
Lane Grp Cap (vph)	74	1631			1604			1710	501			
v/s Ratio Prot		0.33			0.46							
v/s Ratio Perm	c1.29							0.28	0.01			
v/c Ratio	2.53	0.64			0.90			0.75	0.04			
Uniform Delay, d1	21.9	16.0			19.8			24.3	17.7			
Progression Factor	1.00	1.00			0.70			0.53	0.39			
Incremental Delay, d2	725.3	2.0			8.1			2.5	0.1			
Delay (s)	747.2	17.9			22.0			15.4	7.0			
Level of Service	F	B			C			B	A			
Approach Delay (s)		128.3			22.0			15.1			0.0	
Approach LOS		F			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	791	58	47	668	78	47	650	58	53	935	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	0.86
Flpb, ped/bikes	0.98	1.00		0.96	1.00		1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1557	3112		1533	3103		1593	3110		1549	3185	1230
Flt Permitted	0.29	1.00		0.25	1.00		0.13	1.00		0.20	1.00	1.00
Satd. Flow (perm)	478	3112		401	3103		216	3110		319	3185	1230
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	860	63	51	726	85	51	707	63	58	1016	174
RTOR Reduction (vph)	0	4	0	0	10	0	0	7	0	0	0	81
Lane Group Flow (vph)	77	919	0	51	801	0	51	763	0	58	1016	93
Confl. Peds. (#/hr)	65		135	135		65	85		87	87		85
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8			4		4
Actuated Green, G (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Effective Green, g (s)	52.5	52.5		52.5	52.5		31.0	31.0		31.0	31.0	31.0
Actuated g/C Ratio	0.58	0.58		0.58	0.58		0.34	0.34		0.34	0.34	0.34
Clearance Time (s)	3.5	3.5		3.5	3.5		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	278	1815		233	1810		74	1071		109	1097	423
v/s Ratio Prot		c0.30			0.26			0.25			c0.32	
v/s Ratio Perm	0.16			0.13			0.24			0.18		0.08
v/c Ratio	0.28	0.51		0.22	0.44		0.69	0.71		0.53	0.93	0.22
Uniform Delay, d1	9.3	11.1		9.0	10.5		25.4	25.6		23.7	28.4	20.9
Progression Factor	2.29	2.21		1.29	1.01		0.47	0.42		1.35	1.35	2.41
Incremental Delay, d2	1.9	0.8		1.6	0.6		38.5	3.7		12.6	11.0	0.9
Delay (s)	23.3	25.2		13.2	11.2		50.4	14.5		44.5	49.3	51.3
Level of Service	C	C		B	B		D	B		D	D	D
Approach Delay (s)		25.1			11.4			16.8			49.4	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.5
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	783	85	98	727	107	40	813	78	0	681	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			0.95	1.00		1.00	
Frpb, ped/bikes	1.00	0.97		1.00	0.97			1.00	0.89		1.00	
Flpb, ped/bikes	0.97	1.00		0.95	1.00			1.00	1.00		1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85		1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		1.00	
Satd. Flow (prot)	1538	3052		1518	3043			3178	1263		1616	
Flt Permitted	0.21	1.00		0.20	1.00			0.69	1.00		1.00	
Satd. Flow (perm)	343	3052		315	3043			2193	1263		1616	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	851	92	107	790	116	43	884	85	0	740	0
RTOR Reduction (vph)	0	9	0	0	13	0	0	0	22	0	0	0
Lane Group Flow (vph)	95	934	0	107	893	0	0	927	63	0	740	0
Confl. Peds. (#/hr)	127		121	121		127	113		87			113
Confl. Bikes (#/hr)			12			9			14			10
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			
Actuated Green, G (s)	40.0	40.0		40.0	40.0			40.0	40.0		40.0	
Effective Green, g (s)	40.0	40.0		40.0	40.0			40.0	40.0		40.0	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.44	0.44		0.44	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	152	1356		140	1352			974	561		718	
v/s Ratio Prot		0.31			0.29						c0.46	
v/s Ratio Perm	0.28			c0.34				0.42	0.05			
v/c Ratio	0.62	0.69		0.76	0.66			0.95	0.11		1.03	
Uniform Delay, d1	19.2	20.0		21.0	19.7			24.1	14.6		25.0	
Progression Factor	0.77	0.77		1.42	1.48			0.63	0.56		1.21	
Incremental Delay, d2	15.9	2.5		17.5	1.3			16.1	0.3		30.4	
Delay (s)	30.7	17.9		47.5	30.4			31.4	8.4		60.7	
Level of Service	C	B		D	C			C	A		E	
Approach Delay (s)		19.1			32.2			29.5			60.7	
Approach LOS		B			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	614	136	95	816	132	75	958	115	65	822	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1593	3099		1593	3119		1593	3185	1425	1593	1676	1425
Flt Permitted	0.95	1.00		0.34	1.00		0.11	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	1593	3099		577	3119		176	3185	1425	246	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	208	667	148	103	887	143	82	1041	125	71	893	325
RTOR Reduction (vph)	0	21	0	0	14	0	0	0	49	0	0	153
Lane Group Flow (vph)	208	794	0	103	1016	0	82	1041	76	71	893	172
Turn Type	Prot	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6			2			8			4	
Permitted Phases				2			8		8	4		4
Actuated Green, G (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Effective Green, g (s)	8.5	41.7		29.7	29.7		38.0	38.0	38.0	38.0	38.0	38.0
Actuated g/C Ratio	0.09	0.46		0.33	0.33		0.42	0.42	0.42	0.42	0.42	0.42
Clearance Time (s)	3.5	5.3		5.3	5.3		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	150	1435		190	1029		74	1344	601	103	707	601
v/s Ratio Prot	c0.13	0.26			c0.33			0.33			c0.53	
v/s Ratio Perm				0.18			0.46		0.05	0.29		0.12
v/c Ratio	1.39	0.55		0.54	0.99		1.11	0.77	0.13	0.69	1.26	0.29
Uniform Delay, d1	40.8	17.4		24.6	30.0		26.0	22.3	15.9	21.2	26.0	17.1
Progression Factor	0.76	1.18		1.00	1.00		1.02	1.01	1.44	0.66	0.71	0.33
Incremental Delay, d2	203.9	1.3		10.7	25.2		131.2	4.0	0.4	27.7	128.1	1.0
Delay (s)	234.9	21.9		35.3	55.1		157.8	26.4	23.2	41.6	146.4	6.6
Level of Service	F	C		D	E		F	C	C	D	F	A
Approach Delay (s)		65.2			53.3			34.8			105.4	
Approach LOS		E			D			C			F	

Intersection Summary			
HCM 2000 Control Delay	65.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	38	55	213	481	354	7	1792	0	10	311	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	3185		1593	1676	1425
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.12	1.00	1.00
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	3185		201	1676	1425
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	41	60	232	523	385	8	1948	0	11	338	39
RTOR Reduction (vph)	0	0	45	0	0	129	0	0	0	0	0	25
Lane Group Flow (vph)	87	41	15	232	523	256	8	1948	0	11	338	14
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		6
Actuated Green, G (s)	7.0	17.5	22.5	11.1	21.6	21.6	5.0	43.4		33.4	33.4	33.4
Effective Green, g (s)	7.0	17.5	22.5	11.1	21.6	21.6	5.0	43.4		33.4	33.4	33.4
Actuated g/C Ratio	0.08	0.19	0.25	0.12	0.24	0.24	0.06	0.48		0.37	0.37	0.37
Clearance Time (s)	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	240	325	356	196	764	342	88	1535		74	621	528
v/s Ratio Prot	c0.03	0.02	0.00	c0.15	0.16		0.01	c0.61			0.20	
v/s Ratio Perm			0.01			c0.18				0.05		0.01
v/c Ratio	0.36	0.13	0.04	1.18	0.68	0.75	0.09	1.27		0.15	0.54	0.03
Uniform Delay, d1	39.4	29.9	25.6	39.5	31.1	31.7	40.3	23.3		18.8	22.3	18.0
Progression Factor	1.00	1.00	1.00	1.33	1.21	1.37	1.00	1.00		0.68	0.70	1.00
Incremental Delay, d2	0.9	0.2	0.0	116.2	2.0	7.0	0.4	126.4		3.6	2.9	0.1
Delay (s)	40.3	30.1	25.6	168.5	39.6	50.4	40.8	149.7		16.3	18.4	18.1
Level of Service	D	C	C	F	D	D	D	F		B	B	B
Approach Delay (s)		33.4			69.5			149.2			18.3	
Approach LOS		C			E			F			B	

Intersection Summary			
HCM 2000 Control Delay	104.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	51	84	573	0	0	0	0	0	1287	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0		5.0						4.9	4.9
Lane Util. Factor			1.00		1.00						0.91	1.00
Frpb, ped/bikes			0.88		1.00						1.00	0.94
Flpb, ped/bikes			1.00		1.00						1.00	1.00
Frt			0.86		1.00						1.00	0.85
Flt Protected			1.00		0.99						1.00	1.00
Satd. Flow (prot)			1274		1666						4577	1338
Flt Permitted			1.00		0.99						1.00	1.00
Satd. Flow (perm)			1274		1666						4577	1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	55	91	623	0	0	0	0	0	1399	252
RTOR Reduction (vph)	0	0	13	0	0	0	0	0	0	0	0	96
Lane Group Flow (vph)	0	0	42	0	714	0	0	0	0	0	1399	156
Confl. Peds. (#/hr)			66									39
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases			6	2								4
Actuated Green, G (s)			40.0		40.0						40.1	40.1
Effective Green, g (s)			40.0		40.0						40.1	40.1
Actuated g/C Ratio			0.44		0.44						0.45	0.45
Clearance Time (s)			5.0		5.0						4.9	4.9
Vehicle Extension (s)			3.0		3.0						3.0	3.0
Lane Grp Cap (vph)			566		740						2039	596
v/s Ratio Prot											c0.31	
v/s Ratio Perm			0.03		0.43							0.12
v/c Ratio			0.07		0.96						0.69	0.26
Uniform Delay, d1			14.4		24.3						19.9	15.7
Progression Factor			0.42		1.81						1.48	3.04
Incremental Delay, d2			0.3		18.6						1.6	0.9
Delay (s)			6.3		62.5						31.0	48.5
Level of Service			A		E						C	D
Approach Delay (s)		6.3			62.5			0.0			33.6	
Approach LOS		A			E			A			C	

Intersection Summary			
HCM 2000 Control Delay	41.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.9
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	47	560	144	29	233	0	0	319	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.4			4.4	
Lane Util. Factor					1.00	1.00		0.95			0.95	
Frpb, ped/bikes					1.00	0.98		1.00			0.99	
Flpb, ped/bikes					1.00	1.00		1.00			1.00	
Frt					1.00	0.85		1.00			0.97	
Flt Protected					1.00	1.00		0.99			1.00	
Satd. Flow (prot)					1670	1403		3163			3080	
Flt Permitted					1.00	1.00		0.88			1.00	
Satd. Flow (perm)					1670	1403		2801			3080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	51	609	157	32	253	0	0	347	72
RTOR Reduction (vph)	0	0	0	0	0	23	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	660	134	0	285	0	0	399	0
Confl. Peds. (#/hr)				1		2	11					11
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					41.2	41.2		39.6			39.6	
Effective Green, g (s)					41.2	41.2		39.6			39.6	
Actuated g/C Ratio					0.46	0.46		0.44			0.44	
Clearance Time (s)					4.8	4.8		4.4			4.4	
Lane Grp Cap (vph)					764	642		1232			1355	
v/s Ratio Prot											c0.13	
v/s Ratio Perm					0.40	0.10		0.10				
v/c Ratio					0.86	0.21		0.23			0.29	
Uniform Delay, d1					21.9	14.6		15.7			16.2	
Progression Factor					1.60	2.10		1.00			1.00	
Incremental Delay, d2					8.6	0.5		0.4			0.6	
Delay (s)					43.6	31.2		16.2			16.8	
Level of Service					D	C		B			B	
Approach Delay (s)		0.0			41.2			16.2			16.8	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.2
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	176	546	0	0	0	0	0	1687	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.8	4.8						4.6	4.6
Lane Util. Factor				1.00	1.00						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1433	1676						4577	1181
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1433	1676						4577	1181
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	191	593	0	0	0	0	0	1834	210
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	73
Lane Group Flow (vph)	0	0	0	191	593	0	0	0	0	0	1834	137
Confl. Peds. (#/hr)				63								51
Confl. Bikes (#/hr)												2
Turn Type				Perm	NA						NA	Perm
Protected Phases					2						4	
Permitted Phases				2								4
Actuated Green, G (s)				35.2	35.2						45.4	45.4
Effective Green, g (s)				35.2	35.2						45.4	45.4
Actuated g/C Ratio				0.39	0.39						0.50	0.50
Clearance Time (s)				4.8	4.8						4.6	4.6
Lane Grp Cap (vph)				560	655						2308	595
v/s Ratio Prot					c0.35						c0.40	
v/s Ratio Perm				0.13								0.12
v/c Ratio				0.34	0.91						0.79	0.23
Uniform Delay, d1				19.3	25.8						18.4	12.5
Progression Factor				0.51	0.67						1.00	1.00
Incremental Delay, d2				0.5	6.3						2.9	0.9
Delay (s)				10.4	23.6						21.4	13.4
Level of Service				B	C						C	B
Approach Delay (s)		0.0			20.4			0.0			20.6	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	651	136	147	1172	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.8	4.8		4.6				
Lane Util. Factor					1.00	1.00		0.91				
Frpb, ped/bikes					1.00	0.92		1.00				
Flpb, ped/bikes					1.00	1.00		1.00				
Frt					1.00	0.85		1.00				
Flt Protected					1.00	1.00		0.99				
Satd. Flow (prot)					1676	1313		4536				
Flt Permitted					1.00	1.00		0.99				
Satd. Flow (perm)					1676	1313		4536				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	708	148	160	1274	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	18	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	708	128	0	1416	0	0	0	0
Confl. Peds. (#/hr)						43	10					
Turn Type					NA	Perm	Perm	NA				
Protected Phases					2			8				
Permitted Phases						2	8					
Actuated Green, G (s)					36.2	36.2		44.4				
Effective Green, g (s)					36.2	36.2		44.4				
Actuated g/C Ratio					0.40	0.40		0.49				
Clearance Time (s)					4.8	4.8		4.6				
Lane Grp Cap (vph)					674	528		2237				
v/s Ratio Prot					c0.42							
v/s Ratio Perm						0.10		0.31				
v/c Ratio					1.05	0.24		0.63				
Uniform Delay, d1					26.9	17.8		16.8				
Progression Factor					0.86	0.64		1.00				
Incremental Delay, d2					31.8	0.3		1.4				
Delay (s)					54.8	11.6		18.2				
Level of Service					D	B		B				
Approach Delay (s)		0.0			47.4			18.2			0.0	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.4
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	760	83	22	635	0	0	1028	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Util. Factor					1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes					1.00	0.90	1.00	1.00			1.00	0.90
Flpb, ped/bikes					0.99	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1657	1277	1593	3185			3185	1277
Flt Permitted					0.99	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)					1657	1277	178	3185			3185	1277
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	826	90	24	690	0	0	1117	83
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	28
Lane Group Flow (vph)	0	0	0	0	933	77	24	690	0	0	1117	55
Confl. Peds. (#/hr)				40		73	36					36
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2		2	8					4
Actuated Green, G (s)					46.0	46.0	38.0	38.0			38.0	38.0
Effective Green, g (s)					46.0	46.0	38.0	38.0			38.0	38.0
Actuated g/C Ratio					0.51	0.51	0.42	0.42			0.42	0.42
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					846	652	75	1344			1344	539
v/s Ratio Prot								0.22			c0.35	
v/s Ratio Perm					0.56	0.06	0.14					0.04
v/c Ratio					1.10	0.12	0.32	0.51			0.83	0.10
Uniform Delay, d1					22.0	11.4	17.4	19.2			23.1	15.7
Progression Factor					1.33	1.71	1.00	1.00			1.52	2.54
Incremental Delay, d2					52.0	0.1	10.9	1.4			3.4	0.2
Delay (s)					81.3	19.6	28.3	20.6			38.6	40.1
Level of Service					F	B	C	C			D	D
Approach Delay (s)		0.0			75.9			20.8			38.7	
Approach LOS		A			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	647	58	73	960	0	0	725	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frpb, ped/bikes					1.00	0.70	1.00	1.00			1.00	0.71
Flpb, ped/bikes					0.98	1.00	1.00	1.00			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1633	998	1593	3185			1616	972
Flt Permitted					1.00	1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)					1633	998	188	3185			1616	972
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	46	703	63	79	1043	0	0	788	261
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	0	0	749	26	79	1043	0	0	788	248
Confl. Peds. (#/hr)				159		205	90					90
Confl. Bikes (#/hr)						7						14
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					2			8			4	
Permitted Phases				2	2	2	8					4
Actuated Green, G (s)					36.0	36.0	44.5	44.5			44.5	44.5
Effective Green, g (s)					36.0	36.0	44.5	44.5			44.5	44.5
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.49	0.49
Clearance Time (s)					5.0	5.0	4.5	4.5			4.5	4.5
Lane Grp Cap (vph)					653	399	92	1574			799	480
v/s Ratio Prot								0.33			c0.49	
v/s Ratio Perm					0.46	0.03	0.42					0.26
v/c Ratio					1.15	0.06	0.86	0.66			0.99	0.52
Uniform Delay, d1					27.0	16.6	20.0	17.1			22.4	15.5
Progression Factor					0.55	0.19	1.00	1.00			0.92	1.07
Incremental Delay, d2					80.9	0.3	60.8	2.2			18.9	1.9
Delay (s)					95.8	3.4	80.8	19.3			39.5	18.3
Level of Service					F	A	F	B			D	B
Approach Delay (s)		0.0			88.7			23.6			34.2	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	458	107	56	1015	0	0	919	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Util. Factor					0.95	1.00	1.00	0.95			0.95	
Frt					1.00	0.85	1.00	1.00			0.98	
Flt Protected					0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					3159	1425	1593	3185			3130	
Flt Permitted					0.99	1.00	0.20	1.00			1.00	
Satd. Flow (perm)					3159	1425	343	3185			3130	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	101	498	116	61	1103	0	0	999	132
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	599	54	61	1103	0	0	1120	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6		6	8					
Actuated Green, G (s)					23.0	23.0	61.0	61.0			61.0	
Effective Green, g (s)					23.0	23.0	61.0	61.0			61.0	
Actuated g/C Ratio					0.26	0.26	0.68	0.68			0.68	
Clearance Time (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					807	364	232	2158			2121	
v/s Ratio Prot								0.35			c0.36	
v/s Ratio Perm					0.19	0.04	0.18					
v/c Ratio					0.74	0.15	0.26	0.51			0.53	
Uniform Delay, d1					30.8	25.9	5.7	7.1			7.3	
Progression Factor					1.00	1.00	1.00	1.00			1.55	
Incremental Delay, d2					6.1	0.9	2.7	0.9			0.1	
Delay (s)					36.9	26.8	8.4	8.0			11.4	
Level of Service					D	C	A	A			B	
Approach Delay (s)		0.0			35.2			8.0			11.4	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Without Grand Avenue Extension

AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	685	554	253	481	58	73	134	73	200	772	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.98		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.92	1.00	1.00	0.99	1.00		1.00	1.00	1.00	0.85	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1460	3185	1232	1584	4408		1593	3185	1222	1349	3083	
Flt Permitted	0.42	1.00	1.00	0.22	1.00		0.20	1.00	1.00	0.66	1.00	
Satd. Flow (perm)	646	3185	1232	363	4408		334	3185	1222	936	3083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	745	602	275	523	63	79	146	79	217	839	98
RTOR Reduction (vph)	0	0	169	0	22	0	0	0	21	0	12	0
Lane Group Flow (vph)	111	745	433	275	564	0	79	146	58	217	925	0
Confl. Peds. (#/hr)	143		96	96		143	108		143	143		108
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Effective Green, g (s)	22.9	22.9	22.9	34.9	34.9		24.1	24.1	33.1	17.1	17.1	
Actuated g/C Ratio	0.33	0.33	0.33	0.50	0.50		0.34	0.34	0.47	0.24	0.24	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	211	1041	403	337	2197		186	1096	577	228	753	
v/s Ratio Prot		0.23		c0.10	0.13		c0.02	0.05	0.01		c0.30	
v/s Ratio Perm	0.17		c0.35	0.30			0.12		0.03	0.23		
v/c Ratio	0.53	0.72	1.07	0.82	0.26		0.42	0.13	0.10	0.95	1.23	
Uniform Delay, d1	19.1	20.7	23.6	12.1	10.1		17.8	15.8	10.2	26.0	26.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.1	4.2	66.2	14.1	0.3		1.6	0.3	0.1	48.3	114.3	
Delay (s)	28.2	24.9	89.8	26.2	10.4		19.3	16.0	10.3	74.3	140.7	
Level of Service	C	C	F	C	B		B	B	B	E	F	
Approach Delay (s)		51.9			15.4			15.4			128.3	
Approach LOS		D			B			B			F	

Intersection Summary			
HCM 2000 Control Delay	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	149	613	186	210	607	272	25	89	59	166	1289	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.77	1.00	1.00	0.81	1.00	1.00	0.82
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1550	3185	1050	3090	3185	1091	1593	3185	1154	1231	3185	1171
Flt Permitted	0.36	1.00	1.00	0.95	1.00	1.00	0.14	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	581	3185	1050	3090	3185	1091	227	3185	1154	895	3185	1171
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	666	202	228	660	296	27	97	64	180	1401	200
RTOR Reduction (vph)	0	0	80	0	0	107	0	0	16	0	0	46
Lane Group Flow (vph)	162	666	122	228	660	189	27	97	48	180	1401	154
Confl. Peds. (#/hr)	202		228			202	197		231	231		197
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Effective Green, g (s)	42.1	33.6	33.6	11.9	37.0	37.0	29.5	29.5	41.4	29.5	29.5	38.0
Actuated g/C Ratio	0.47	0.37	0.37	0.13	0.41	0.41	0.33	0.33	0.46	0.33	0.33	0.42
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	363	1189	392	408	1309	448	74	1043	530	293	1043	494
v/s Ratio Prot	0.04	c0.21		c0.07	c0.21			0.03	0.01		c0.44	0.03
v/s Ratio Perm	0.17		0.12			0.17	0.12		0.03	0.20		0.10
v/c Ratio	0.45	0.56	0.31	0.56	0.50	0.42	0.36	0.09	0.09	0.61	1.34	0.31
Uniform Delay, d1	14.3	22.3	20.0	36.6	19.7	18.9	23.1	21.0	13.7	25.5	30.2	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	1.9	2.1	1.7	1.4	2.9	13.3	0.2	0.1	9.3	160.9	0.4
Delay (s)	15.2	24.3	22.1	38.3	21.1	21.8	36.4	21.2	13.8	34.8	191.2	17.7
Level of Service	B	C	C	D	C	C	D	C	B	C	F	B
Approach Delay (s)		22.4			24.6			20.8			155.9	
Approach LOS		C			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	79.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	628	194	182	833	256	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.83	1.00	1.00	1.00	0.83
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1182	1593	3185	3090	2091
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1182	1593	3185	3090	2091
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	683	211	198	905	278	357
RTOR Reduction (vph)	0	130	0	0	0	22
Lane Group Flow (vph)	683	81	198	905	278	335
Confl. Peds. (#/hr)		92			117	302
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	27.0	27.0	12.2	42.7	17.5	29.7
Effective Green, g (s)	27.0	27.0	12.2	42.7	17.5	29.7
Actuated g/C Ratio	0.39	0.39	0.17	0.61	0.25	0.42
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1228	455	277	1942	772	887
v/s Ratio Prot	c0.21		c0.12	0.28	0.09	c0.07
v/s Ratio Perm		0.07				0.09
v/c Ratio	0.56	0.18	0.71	0.47	0.36	0.38
Uniform Delay, d1	16.8	14.2	27.3	7.4	21.6	13.8
Progression Factor	1.00	1.00	1.06	2.03	1.00	1.00
Incremental Delay, d2	1.8	0.9	3.3	0.3	0.3	0.3
Delay (s)	18.6	15.0	32.2	15.4	21.9	14.1
Level of Service	B	B	C	B	C	B
Approach Delay (s)	17.8			18.4	17.5	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	73	654	126	111	930	93	56	258	68	66	1207	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.79	1.00	1.00	0.78	1.00	0.98		1.00	1.00	0.65
Flpb, ped/bikes	1.00	1.00	1.00	0.93	1.00	1.00	0.96	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1587	3185	1132	1476	3185	1116	1526	3023		1558	3185	927
Flt Permitted	0.17	1.00	1.00	0.38	1.00	1.00	0.16	1.00		0.48	1.00	1.00
Satd. Flow (perm)	288	3185	1132	592	3185	1116	255	3023		791	3185	927
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	711	137	121	1011	101	61	280	74	72	1312	168
RTOR Reduction (vph)	0	0	51	0	0	72	0	33	0	0	0	91
Lane Group Flow (vph)	79	711	86	121	1011	29	61	321	0	72	1312	77
Confl. Peds. (#/hr)	187		188	188		187	569		85	85		569
Confl. Bikes (#/hr)			1			5			4			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Effective Green, g (s)	27.2	27.2	27.2	20.2	20.2	20.2	25.2	25.2		32.2	32.2	32.2
Actuated g/C Ratio	0.39	0.39	0.39	0.29	0.29	0.29	0.36	0.36		0.46	0.46	0.46
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	186	1237	439	170	919	322	91	1088		407	1465	426
v/s Ratio Prot	0.02	c0.22			c0.32			0.11		0.01	c0.41	
v/s Ratio Perm	0.14		0.08	0.20		0.03	0.24			0.07		0.08
v/c Ratio	0.42	0.57	0.20	0.71	1.10	0.09	0.67	0.30		0.18	0.90	0.18
Uniform Delay, d1	16.4	16.8	14.2	22.3	24.9	18.2	18.9	16.0		10.8	17.4	11.1
Progression Factor	1.03	0.78	0.81	0.98	1.02	2.82	1.97	2.31		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.7	0.9	16.9	57.4	0.4	17.0	0.1		0.2	7.5	0.2
Delay (s)	18.4	14.8	12.4	38.8	82.9	51.6	54.2	37.3		11.0	24.8	11.3
Level of Service	B	B	B	D	F	D	D	D		B	C	B
Approach Delay (s)		14.8			76.0			39.8			22.7	
Approach LOS		B			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	602	85	61	819	168	34	371	59	62	591	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.74	1.00	1.00	0.83	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.98	1.00		0.90	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1585	3185	1049	1433	3185	1181	1568	4360		1437	2945	
Flt Permitted	0.20	1.00	1.00	0.40	1.00	1.00	0.18	1.00		0.45	1.00	
Satd. Flow (perm)	337	3185	1049	608	3185	1181	300	4360		684	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	654	92	66	890	183	37	403	64	67	642	295
RTOR Reduction (vph)	0	0	14	0	0	76	0	31	0	0	77	0
Lane Group Flow (vph)	133	654	78	66	890	107	37	436	0	67	860	0
Confl. Peds. (#/hr)	139		128	128		139	88		200	200		88
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Effective Green, g (s)	40.3	40.3	40.3	31.7	31.7	31.7	22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.58	0.58	0.58	0.45	0.45	0.45	0.31	0.31		0.31	0.31	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	293	1833	603	275	1442	534	94	1370		214	925	
v/s Ratio Prot	c0.04	0.21			c0.28			0.10			c0.29	
v/s Ratio Perm	0.22		0.07	0.11		0.09	0.12			0.10		
v/c Ratio	0.45	0.36	0.13	0.24	0.62	0.20	0.39	0.32		0.31	0.93	
Uniform Delay, d1	8.4	7.9	6.8	11.8	14.5	11.5	18.8	18.3		18.3	23.3	
Progression Factor	1.01	1.18	1.07	1.09	1.15	1.80	1.94	2.17		1.00	1.00	
Incremental Delay, d2	1.0	0.5	0.4	1.5	1.4	0.6	11.5	0.6		3.8	16.8	
Delay (s)	9.5	9.8	7.7	14.3	18.1	21.3	47.9	40.3		22.0	40.1	
Level of Service	A	A	A	B	B	C	D	D		C	D	
Approach Delay (s)		9.5			18.4			40.9			38.9	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	543	84	42	684	7	0	0	0	88	1186	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00						1.00	0.88
Flpb, ped/bikes	0.99	1.00	1.00	0.95	1.00						1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						1.00	1.00
Satd. Flow (prot)	1582	3185	1249	1513	3175						4545	1255
Flt Permitted	0.21	1.00	1.00	0.43	1.00						1.00	1.00
Satd. Flow (perm)	348	3185	1249	684	3175						4545	1255
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	590	91	46	743	8	0	0	0	96	1289	412
RTOR Reduction (vph)	0	0	21	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	82	590	70	46	750	0	0	0	0	0	1385	394
Confl. Peds. (#/hr)	94		103	103		94				57		149
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Effective Green, g (s)	31.8	31.8	31.8	22.8	22.8						27.5	33.5
Actuated g/C Ratio	0.45	0.45	0.45	0.33	0.33						0.39	0.48
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	263	1446	567	222	1034						1785	600
v/s Ratio Prot	0.03	0.19			c0.24							c0.06
v/s Ratio Perm	0.11		0.06	0.07							0.30	0.26
v/c Ratio	0.31	0.41	0.12	0.21	0.73						0.78	0.66
Uniform Delay, d1	12.0	12.8	11.0	17.1	20.8						18.6	13.9
Progression Factor	1.49	1.43	1.74	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	0.8	0.4	2.1	4.4						3.4	2.6
Delay (s)	18.5	19.1	19.7	19.2	25.3						21.9	16.5
Level of Service	B	B	B	B	C						C	B
Approach Delay (s)		19.1			24.9			0.0			20.7	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	847	225	218	800	126	236	622	244	143	357	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.77	1.00	0.97		1.00	1.00	0.86	1.00	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00		0.97	1.00	1.00	0.94	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1522	3185	1097	1593	4369		1552	3185	1229	1497	3045	
Flt Permitted	0.27	1.00	1.00	0.13	1.00		0.40	1.00	1.00	0.39	1.00	
Satd. Flow (perm)	436	3185	1097	218	4369		648	3185	1229	622	3045	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	921	245	237	870	137	257	676	265	155	388	62
RTOR Reduction (vph)	0	0	151	0	24	0	0	0	15	0	14	0
Lane Group Flow (vph)	239	921	94	237	983	0	257	676	250	155	436	0
Confl. Peds. (#/hr)	106		132	132		106	92		91	91		92
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	Perm	NA	
Protected Phases		6		5	2		3	8	5		4	
Permitted Phases	6		6	2			8		8	4		
Actuated Green, G (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Effective Green, g (s)	30.5	30.5	30.5	40.5	40.5		38.5	38.5	45.5	30.5	30.5	
Actuated g/C Ratio	0.34	0.34	0.34	0.45	0.45		0.43	0.43	0.51	0.34	0.34	
Clearance Time (s)	5.5	5.5	5.5	3.0	5.5		3.0	5.5	3.0	5.5	5.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	1079	371	205	1966		327	1362	621	210	1031	
v/s Ratio Prot		0.29		c0.09	0.23		c0.04	0.21	0.03		0.14	
v/s Ratio Perm	c0.55		0.09	0.43			c0.29		0.17	0.25		
v/c Ratio	1.63	0.85	0.25	1.16	0.50		0.79	0.50	0.40	0.74	0.42	
Uniform Delay, d1	29.8	27.7	21.5	19.9	17.6		21.8	18.7	13.8	26.2	23.0	
Progression Factor	1.00	1.00	1.00	2.38	0.77		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	310.5	8.6	1.6	99.2	0.6		11.7	1.3	0.4	20.6	1.3	
Delay (s)	340.2	36.3	23.1	146.5	14.2		33.6	20.0	14.2	46.8	24.2	
Level of Service	F	D	C	F	B		C	C	B	D	C	
Approach Delay (s)		85.7			39.4			21.6			30.0	
Approach LOS		F			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	271	791	152	221	967	537	36	638	137	65	918	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.83	1.00	1.00	0.88	1.00	1.00	0.92	1.00	1.00	0.79
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1590	3185	1190	3090	3185	1248	1528	3185	1316	1549	3185	1121
Flt Permitted	0.13	1.00	1.00	0.95	1.00	1.00	0.13	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	216	3185	1190	3090	3185	1248	211	3185	1316	433	3185	1121
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	295	860	165	240	1051	584	39	693	149	71	998	162
RTOR Reduction (vph)	0	0	48	0	0	48	0	0	17	0	0	17
Lane Group Flow (vph)	295	860	117	240	1051	536	39	693	132	71	998	145
Confl. Peds. (#/hr)	102		139			102	240		79	79		240
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases	2		2			6	8		8	4		4
Actuated Green, G (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Effective Green, g (s)	44.5	35.5	35.5	9.0	35.5	35.5	30.5	30.5	39.5	30.5	30.5	39.5
Actuated g/C Ratio	0.49	0.39	0.39	0.10	0.39	0.39	0.34	0.34	0.44	0.34	0.34	0.44
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5	5.5	5.5	5.5	4.0	5.5	5.5	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	1256	469	309	1256	492	71	1079	577	146	1079	491
v/s Ratio Prot	c0.12	0.27		0.08	0.33			0.22	0.02		c0.31	0.03
v/s Ratio Perm	c0.48		0.10			0.43	0.18		0.08	0.16		0.10
v/c Ratio	1.21	0.68	0.25	0.78	0.84	1.09	0.55	0.64	0.23	0.49	0.92	0.30
Uniform Delay, d1	20.1	22.6	18.3	39.5	24.6	27.2	24.2	25.1	15.8	23.5	28.6	16.3
Progression Factor	1.75	0.87	1.06	0.80	1.09	1.08	1.09	1.10	1.02	1.00	1.00	1.00
Incremental Delay, d2	116.2	2.0	0.8	9.1	5.3	62.4	25.0	2.7	0.2	11.1	14.4	0.3
Delay (s)	151.3	21.7	20.3	40.9	32.0	91.9	51.4	30.2	16.3	34.7	43.1	16.6
Level of Service	F	C	C	D	C	F	D	C	B	C	D	B
Approach Delay (s)		50.5			51.8			28.8			39.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	874	79	88	987	717	1021
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.88
Frpb, ped/bikes	1.00	0.74	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3185	1049	1593	3185	3090	2378
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3185	1049	1593	3185	3090	2378
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	950	86	96	1073	779	1110
RTOR Reduction (vph)	0	54	0	0	0	10
Lane Group Flow (vph)	950	32	96	1073	779	1100
Confl. Peds. (#/hr)		116			21	61
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases		2				4
Actuated Green, G (s)	33.6	33.6	16.0	53.1	27.1	43.1
Effective Green, g (s)	33.6	33.6	16.0	53.1	27.1	43.1
Actuated g/C Ratio	0.37	0.37	0.18	0.59	0.30	0.48
Clearance Time (s)	5.0	5.0	3.5	5.0	4.8	3.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1189	391	283	1879	930	1138
v/s Ratio Prot	c0.30		0.06	0.34	0.25	c0.17
v/s Ratio Perm		0.03				0.29
v/c Ratio	0.80	0.08	0.34	0.57	0.84	0.97
Uniform Delay, d1	25.2	18.2	32.4	11.4	29.4	22.7
Progression Factor	1.53	3.59	0.78	1.87	1.00	1.00
Incremental Delay, d2	4.5	0.3	0.5	0.9	6.7	18.9
Delay (s)	43.1	65.8	25.8	22.1	36.1	41.6
Level of Service	D	E	C	C	D	D
Approach Delay (s)	45.0			22.4	39.3	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	1121	42	57	709	70	92	762	88	97	962	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.80	1.00	1.00	0.84	1.00	0.99		1.00	1.00	0.68
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.94	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1588	3185	1143	1551	3185	1196	1493	3107		1591	3185	976
Flt Permitted	0.15	1.00	1.00	0.17	1.00	1.00	0.22	1.00		0.15	1.00	1.00
Satd. Flow (perm)	255	3185	1143	281	3185	1196	347	3107		245	3185	976
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	299	1218	46	62	771	76	100	828	96	105	1046	179
RTOR Reduction (vph)	0	0	27	0	0	56	0	10	0	0	0	95
Lane Group Flow (vph)	299	1218	19	62	771	20	100	914	0	105	1046	84
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	Perm
Protected Phases	1	6			2			8		7	4	
Permitted Phases	6		6	2		2	8			4		4
Actuated Green, G (s)	37.3	37.3	37.3	23.2	23.2	23.2	32.7	32.7		42.1	42.1	42.1
Effective Green, g (s)	37.3	37.3	37.3	23.2	23.2	23.2	32.7	32.7		42.1	42.1	42.1
Actuated g/C Ratio	0.41	0.41	0.41	0.26	0.26	0.26	0.36	0.36		0.47	0.47	0.47
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2	5.2	5.4	5.4		3.0	5.4	5.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	270	1320	473	72	821	308	126	1128		210	1489	456
v/s Ratio Prot	c0.14	0.38			0.24			c0.29		0.04	c0.33	
v/s Ratio Perm	c0.32		0.02	0.22		0.02	0.29			0.20		0.09
v/c Ratio	1.11	0.92	0.04	0.86	0.94	0.06	0.79	0.81		0.50	0.70	0.18
Uniform Delay, d1	22.2	25.0	15.7	31.9	32.7	25.2	25.6	25.8		16.1	19.0	13.9
Progression Factor	1.06	1.05	0.86	0.88	0.92	2.96	1.52	1.49		1.00	1.00	1.00
Incremental Delay, d2	70.0	6.3	0.1	58.4	15.7	0.3	19.3	2.9		1.9	1.5	0.2
Delay (s)	93.5	32.7	13.6	86.5	45.6	74.8	58.1	41.5		18.0	20.5	14.1
Level of Service	F	C	B	F	D	E	E	D		B	C	B
Approach Delay (s)		43.7			50.8			43.1			19.5	
Approach LOS		D			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.6
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	1204	85	49	791	87	66	621	138	89	470	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91		1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.59	1.00	1.00	0.74	1.00	0.96		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.94	1.00	1.00	0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	3185	834	1496	3185	1050	1544	4287		1512	2927	
Flt Permitted	0.19	1.00	1.00	0.20	1.00	1.00	0.21	1.00		0.23	1.00	
Satd. Flow (perm)	311	3185	834	309	3185	1050	347	4287		374	2927	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	292	1309	92	53	860	95	72	675	150	97	511	217
RTOR Reduction (vph)	0	0	24	0	0	56	0	18	0	0	52	0
Lane Group Flow (vph)	292	1309	68	53	860	39	72	807	0	97	676	0
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Effective Green, g (s)	53.3	53.3	53.3	36.7	36.7	36.7	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.41	0.41	0.41	0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	3.7	3.7	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	376	1886	493	126	1298	428	111	1381		120	943	
v/s Ratio Prot	c0.12	0.41			0.27			0.19			0.23	
v/s Ratio Perm	c0.34		0.08	0.17		0.04	0.21			c0.26		
v/c Ratio	0.78	0.69	0.14	0.42	0.66	0.09	0.65	0.58		0.81	0.72	
Uniform Delay, d1	12.7	12.7	8.1	19.1	21.6	16.4	26.1	25.5		28.0	26.9	
Progression Factor	1.10	1.63	1.59	0.63	0.64	0.67	1.06	1.10		1.00	1.00	
Incremental Delay, d2	6.7	1.4	0.4	8.3	2.2	0.3	25.0	1.8		42.4	4.7	
Delay (s)	20.7	22.1	13.3	20.4	16.0	11.3	52.8	29.8		70.4	31.5	
Level of Service	C	C	B	C	B	B	D	C		E	C	
Approach Delay (s)		21.4			15.8			31.7			36.1	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.7
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	112	1219	57	40	736	6	0	0	0	96	627	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95						0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.72	1.00	1.00						1.00	0.89
Flpb, ped/bikes	0.99	1.00	1.00	0.97	1.00						0.98	1.00
Frt	1.00	1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)	1580	3185	1027	1542	3175						4468	1266
Flt Permitted	0.22	1.00	1.00	0.15	1.00						0.99	1.00
Satd. Flow (perm)	366	3185	1027	243	3175						4468	1266
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1325	62	43	800	7	0	0	0	104	682	213
RTOR Reduction (vph)	0	0	15	0	1	0	0	0	0	0	0	18
Lane Group Flow (vph)	122	1325	47	43	806	0	0	0	0	0	786	195
Confl. Peds. (#/hr)	102		192	192		102				112		113
Turn Type	pm+pt	NA	Perm	Perm	NA					Perm	NA	pm+ov
Protected Phases	1	6			2						4	1
Permitted Phases	6		6	2						4		4
Actuated Green, G (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Effective Green, g (s)	47.8	47.8	47.8	36.3	36.3						31.5	40.0
Actuated g/C Ratio	0.53	0.53	0.53	0.40	0.40						0.35	0.44
Clearance Time (s)	3.0	5.2	5.2	5.2	5.2						5.5	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)	309	1691	545	98	1280						1563	562
v/s Ratio Prot	0.04	c0.42			0.25							0.03
v/s Ratio Perm	0.17		0.05	0.18							0.18	0.12
v/c Ratio	0.39	0.78	0.09	0.44	0.63						0.50	0.35
Uniform Delay, d1	12.2	16.9	10.4	19.5	21.5						23.1	16.4
Progression Factor	1.33	1.11	1.72	1.00	1.00						1.00	1.00
Incremental Delay, d2	0.6	2.7	0.2	13.6	2.4						1.2	0.4
Delay (s)	16.8	21.5	18.0	33.1	23.8						24.2	16.8
Level of Service	B	C	B	C	C						C	B
Approach Delay (s)		21.0			24.3			0.0			22.6	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix L
Speed Improvement Study

Restoration of Historic Streetcar Service in Downtown Los Angeles

Small Starts Speed Improvement Analysis
Technical Memorandum

Executive Summary

A Small Starts Speed Improvement Analysis has been performed to evaluate potential physical and operational treatments that would improve the run time of the Downtown Los Angeles Streetcar Project. The table below summarizes the results for the afternoon peak hour (worst case condition).

Streetcar Run Time Analysis Results

	Existing	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Description	Without Improvement (AECOM Estimate)	EIR Assumed 3 Protected Turn Phases	Additional Improvements at 16 Locations	Scenario 1 + Transit-Only Lane (2 SB Lanes)	Scenario 1 + Transit-Only Lane (1 SB Lane)	Scenario 1 + Stop Reduction (25 to 16)
Travel Time	49.5 min	45.8 min	38.5 min	38 min	37 min	34 min
Speed	4.7 mph	5.0 mph	5.9 mph	6.0 mph	6.1 mph	6.7 mph
Approx. Ridership (7th with Grand Ave)	4,400	4,800	5,700	5,700	5,700	5,400

The existing run-time estimate performed by AECOM added two minutes of delay adjustment and did not have the benefit of protected left turn signal phases at 7th and Hill and 1st and Hill. HDR's run-time estimate spreadsheet was modified with intersection delays calculated by Syncho.

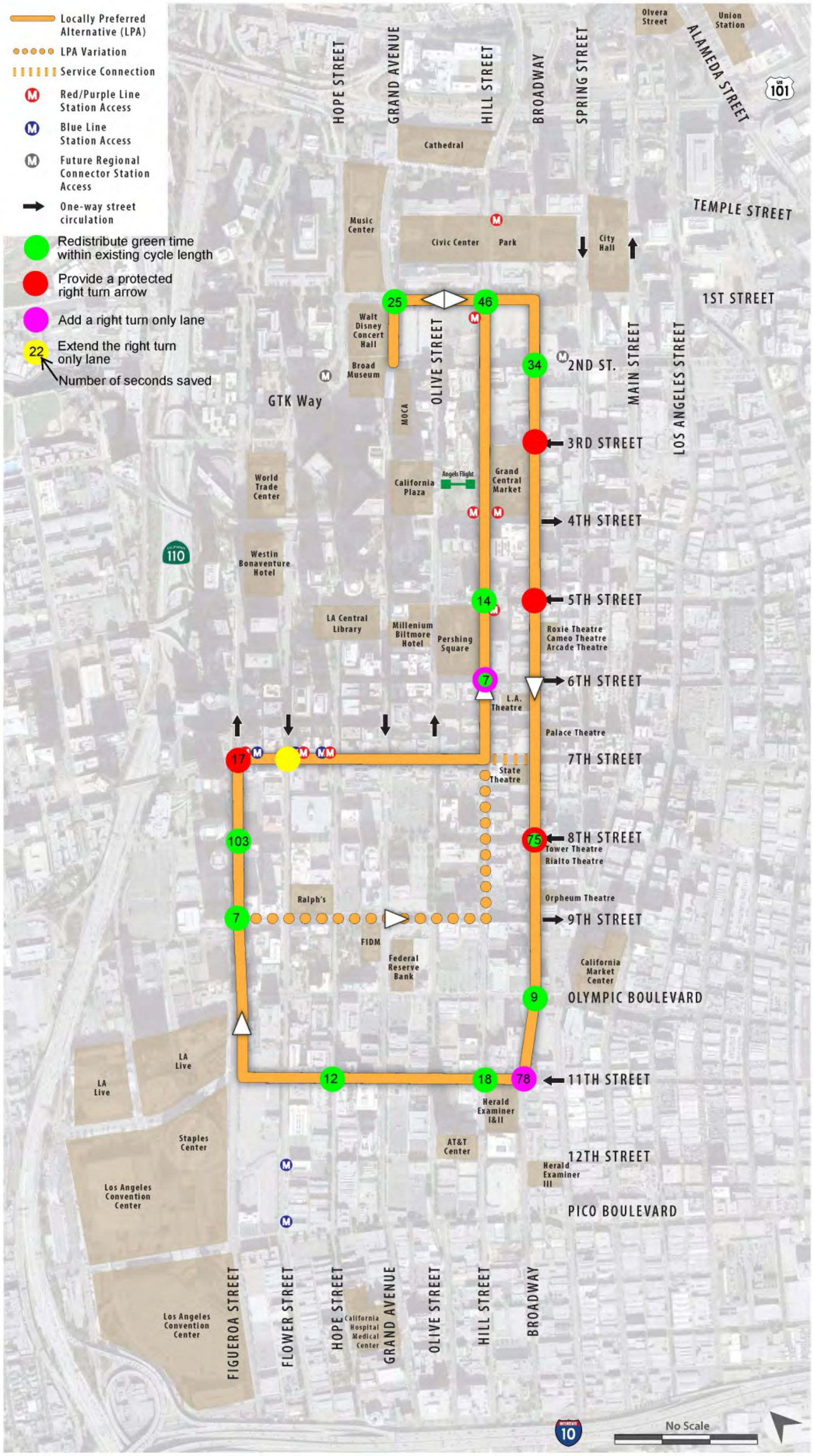
Scenario 1, redistributing 5 to 15 seconds of green time at 11 intersections, providing a protected right turn phase at 4 intersections, extending the right turn lane at one location, and providing new right turn lanes at two locations, saved seven minutes of run time, and got within 3.5 minutes of the 35 minute run time goal. The map on the next page shows where the Scenario 1 improvements are proposed and the resulting run time savings.

Scenario 2, adding a second lane southbound on Broadway with one of the two lanes being transit-only, saves 34 seconds of run time compared to Scenario 1.

Scenario 3, converting the one southbound lane on Broadway to transit-only, saves 90 seconds of run time compared to Scenario 1, but causes significant traffic impacts at six intersection locations.

Scenario 4, reducing the number of streetcar station stops from 25 to 16, saves 4.5 minutes in run time compared to Scenario 1. Combined with the proposed Scenario 1 modifications, Scenario 4 achieves the goal of a run time of less than 35 minutes. However, a ridership estimate was performed by Metro with the reduced number of streetcar station stops, and the result was a reduction of 300 boardings per day, from 5,700 riders to 5,400 riders.

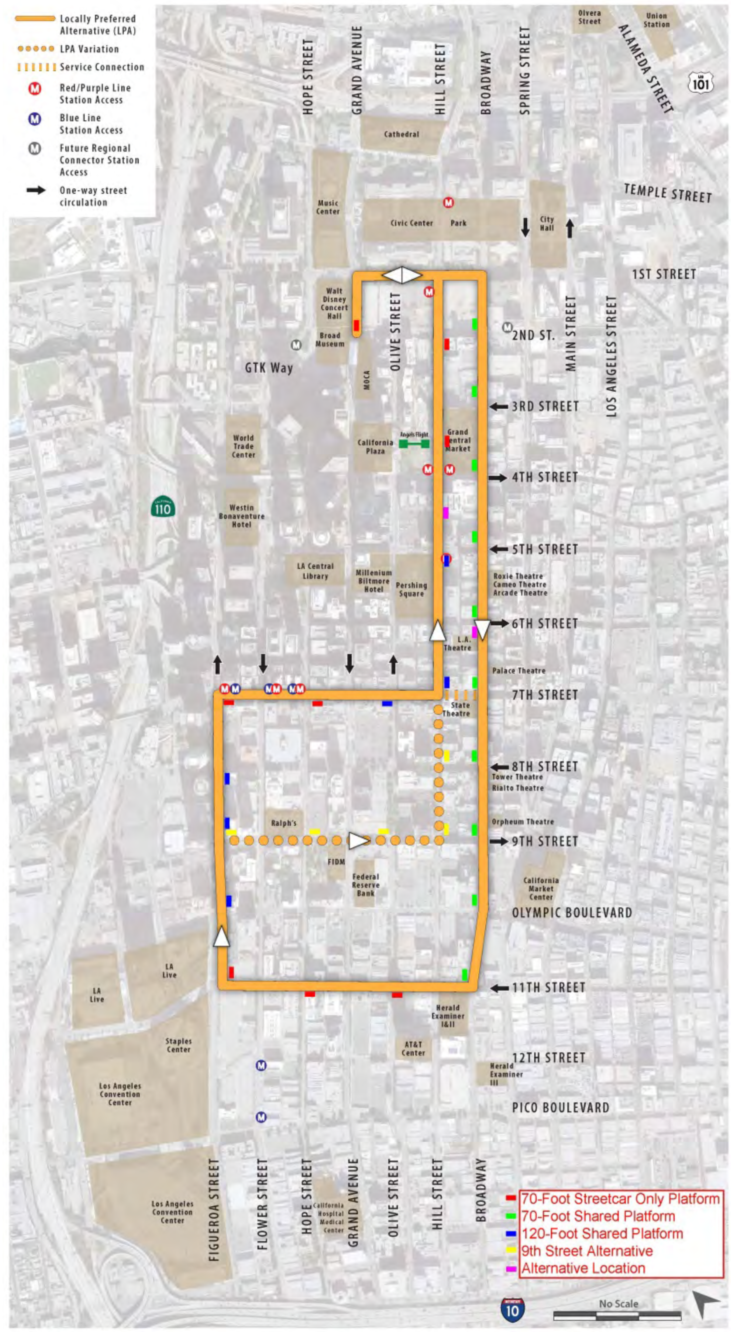
Scenario 1 Improvements



September 25, 2015

Introduction

The Downtown Los Angeles Streetcar (Project) is a 3.8-mile loop that starts in an exclusive median on Grand Avenue just north of 2nd Street. It turns right on 1st Street, turns right on Broadway, turns right on 11th Street, turns right on Figueroa Street, turns right on 7th Street, turns left on Hill Street, turns left on 1st Street, and turns left on Grand Avenue back to the starting point. There is variation to the locally preferred alternative (LPA) that uses 9th Street that will also need to be considered in the environmental document.



The Project is seeking FTA funding for the construction and project development costs through the Federal Transit Administration (FTA) Capital Investment Grant Program. The FTA will evaluate the project against six Project Justification Factors (Mobility Improvements, Environmental Benefits, Congestion Relief, Cost-Effectiveness, Economic Development, and Land Use), and overall the Project must receive at least a medium rating in order to receive funding. The critical elements of this evaluation are ridership, capital cost, and operations and maintenance (O+M) cost.

Ridership has more impact on the overall rating than any other factor because it affects three of the six justification factors. FTA requires all of its projects to estimate ridership using a software program that they have developed called STOPS (Simplified Trips on Project Software). When the project is submitted to FTA for a rating, it will need to have a ridership estimate, a detailed operating plan, and proposed physical improvements that are all consistent with one another. In addition, the FTA will be the lead agency for NEPA clearance, and the environmental document will have to be consistent with each of these other elements. The FTA will need evidence and documentation to back up the estimated run time for the transit service, because this affects the ridership and determines the number of streetcar vehicles that will need to operate to achieve the planned service headway. The FTA will be checking the capital cost estimate to be sure that the correct number of vehicles is included in the project capital cost estimate, that the O+M estimate reflects all of these vehicles in service, and that the MSF facility is sized appropriately to accommodate the vehicle fleet. The run time is a critical factor for the project.

As part of the Alternatives Analysis, in 2011, the project team prepared operating plans and O+M estimates for the seven alignments being evaluated as part of the final screening. For the two alternatives that were selected as the LPA, the streetcar run time was estimated to be 35.5 minutes, requiring 6 vehicles to meet the peak 7-minute headway plus one spare. This equates to an average speed of 6.5 miles per hour (MPH). The estimate was based on 25 stops at 2nd/Grand, 2nd/Broadway, 3rd/Broadway, 4th/Broadway, 5th/Broadway, 6th/Broadway, 7th/Broadway, 8th/Broadway, 9th/Broadway, Olympic/Broadway, 11th/Broadway, Olive/11th, Hope/11th, 11th/Figueroa, Olympic/Figueroa, 9th/Figueroa, 8th/Figueroa, Figueroa/7th, Hope/7th, Olive/7th, 7th/Hill, 5th/Hill, Angel's Flight/Grand Central Market, 2nd/Hill, and 2nd/Grand. A 20 second dwell time was assumed at each stop. Acceleration and deceleration were assumed to be 2.5 MPH per second. Maximum speeds were assumed to be the posted speed limits or the restricted speeds around the 90 degree turns. In addition, an average intersection delay was assumed to be 20 seconds.

Since 2011, many of the downtown streets on the streetcar route have undergone significant transformations. Broadway has been restriped from 2 lanes southbound (SB) and 3 lanes northbound (NB) to 1 lane SB and 2 lanes NB to provide wider sidewalks. Also, 7th Street has been restriped from 2 lanes eastbound (EB) and 2 lanes westbound (WB) to 1 lane EB and 2 lanes WB to provide bike lanes. Bike lanes were added to 1st Street, and bike lanes are proposed for 11th Street by changing the configuration from 2 lanes WB to 1 lane WB, and Figueroa Street will also see a lane reduction to receive bike lanes. These road diets along the streetcar route, coupled with significant new development and re-activation of historic buildings, along with a significant amount of all types of construction, has created traffic congestion along the Project route. AECOM, the City's Project Management Consultant, performed a floating car study that showed an average speed of 4.7 MPH during the afternoon peak period. To maintain a 7-minute headway at 4.7 MPH, it is expected that eight (8) streetcars would need to be placed in service rather than the six (6) previously assumed, increasing the O+M cost, and reducing ridership. To evaluate potential physical and operational treatments that would help improve the streetcar's run time, a Small Starts Speed Improvement analysis was performed. The scope, field observations, methodology and alternatives, assumptions, findings, and conclusions of this analysis are presented in the following sections.

Scope of the Analysis

The scope of the Small Starts Speed Improvement Analysis consisted of field observations, intersection evaluations for the base condition and three improvement scenarios, and streetcar run time estimates for the base condition and four improvement scenarios. It should be noted that one of the four scenarios simply reduced the number of streetcar station stops, while maintaining the improvements proposed to reduce the streetcar's delay and its associated run time.

Field Observations

Field observations were performed over a 2-day period in August 2015 during the PM peak period (from 3:30 to 5:30 PM) to observe traffic operating conditions and identify potential trouble spots that may affect the future streetcar operations. The objective of this site visit was to identify traffic delay locations, determine the possible causes of this delay, and use the information collected to assist in recommending modifications to the roadway system that will assist in alleviating these bottlenecks. This assessment was conducted for the 7th Street streetcar alignment alternative. The focus of the field observations were along Broadway (between 1st and 11th Streets), 11th Street (between Broadway and Figueroa Street), Figueroa Street (between 11th and 7th Streets), 7th Street (between Figueroa and Hill Streets), and Hill Street (between 7th and 1st Streets). In addition, a field inventory was conducted during the site visit to review and verify the intersection lane configuration, the type of traffic control, the signal phasing, and the pedestrian activity. The following traffic conditions were observed at these roadways.

- **Broadway** – heavy northbound and southbound traffic volumes and queue build-up was observed along the roadway segment between 2nd and 8th Streets. For the southbound direction of Broadway, queues and associated delays due to congestion were noticeable at the 3rd, 5th, and 8th Street intersections.
- **11th Street** – westbound traffic along 11th Street flowed freely through the intersections from Broadway to Figueroa Street. There were minor delays for the turning movements waiting for pedestrians to cross the street; however, it did not result in any noticeable queuing conditions.
- **Figueroa Street** – northbound traffic along the segment of Figueroa Street between 11th and 9th Street flowed adequately through the intersections. Significant delays were observed on the northbound approach at 7th Street with queuing developing along the northbound right turn lane and extending to 8th Street. In addition, it was also observed that vehicle queue spillback from 6th Street affected the operations at the intersection of 7th Street and Figueroa Street resulting in delays and queues extending back to the Figueroa Street and 8th Street intersection and beyond. It was also observed that the far side bus stops at Figueroa and 7th Streets resulted in the queuing of buses along the designated Figueroa bus lane between 7th and 8th Streets.
- **7th Street** – eastbound through traffic along the segment between Figueroa and Flower Streets queued due to the existing short right turn lane storage length. Eastbound right turn traffic at 7th Street queued waiting for pedestrians crossing the south leg of Flower Street to clear the crosswalk. During several signal cycles, it was observed that the right turn queue spilled back beyond the right turn lane storage length and blocked the eastbound through movement along 7th Street. Eastbound through traffic along the remaining segments of 7th Street flowed freely through the intersections from Flower Street to Hill Street.
- **Hill Street** – traffic delays and congestion was observed along the northbound segment of Hill Street at the 6th Street and the 5th Street intersections. Northbound right turn traffic at Hill Street queued waiting for pedestrians crossing the east leg of 6th Street to clear the crosswalk. This resulted in the northbound curb lane being blocked thus delaying the northbound through movement along the curb lane of Hill Street, which is the location of the streetcar tracks.

As a result of the field observations, a total of eight intersections were identified as locations of concern that may potentially impact the run time estimates and delay the streetcar's operating speed. The eight intersections of concern are Broadway/3rd Street, Broadway/5th Street, Broadway/8th Street, Figueroa

Street/8th Street, Figueroa Street/7th Street, Flower Street/7th Street, Hill Street/6th Street, and Hill Street/5th Street.

Analysis Methodology and Alternatives

The analysis methodology and alternatives analyzed is divided into two elements; performing the intersection evaluations using the Synchro software to determine the total delay for the streetcar movement and using this information to calculate the streetcar run times.

Intersection Evaluations

The streetcar run time calculation is based on the intersection approach delay for the streetcar movement at each of the 34 signalized intersections along the streetcar alignment. The Synchro V8.0 traffic analysis software was run, during the PM peak hour only, for each of the 34 intersections along the route to determine the total delay for the streetcar movement. The intersection evaluations were performed at 1st /Grand, 1st/Olive, 1st/Hill, 1st/Broadway, 2nd/Broadway, 3rd/Broadway, 4th/Broadway, 5th/Broadway, 6th/Broadway, 7th/Broadway, 8th/Broadway, 9th/Broadway, Olympic/Broadway, 11th/Broadway, 11th/Hill, 11th/Olive, 11th/Grand, 11th/Hope, 11th/Flower, 11th/Figueroa, Olympic/Figueroa, 9th/Figueroa, 8th/Figueroa, 7th/Figueroa, 7th/Flower, 7th/Hope, 7th/Grand, 7th/Olive, 7th/Hill, 6th/Hill, 5th/Hill, 4th/Hill, 3rd/Hill, and 2nd/Hill. The intersection evaluations were performed for the Base Condition and three improvement scenarios.

The Base Condition consisted of running Synchro at the 34 intersections with the streetcar alignment in place using the latest available traffic volumes at each intersection, the latest intersection lane configurations and associated restriping from the development and streetscape projects that have been completed, and the latest traffic signal timing information along Broadway due to the implementation of the streetscape project. All of the latest available information was collected and provided by LADOT.

Scenario 1 consisted of reviewing the results of the field observations and reviewing the streetcar movement delay results from the Base Condition to identify potential physical and operational intersection improvements that would improve the run time estimate. The improvements proposed to improve the streetcar delay are presented in the Assumptions section.

Scenario 2 builds off the improvements proposed in Scenario 1 and would also add a second southbound lane on Broadway from 2nd to 11th Streets. As a result of having two southbound lanes on Broadway, the curb lane includes buses and the streetcar tracks and is designated as a "Transit Only" lane and the second lane will accommodate all other mixed flow vehicles. However, it should be noted that mixed flow vehicles would be permitted to weave across the "Transit Only" lane and the streetcar tracks to access the southbound right turn pocket lanes along Broadway at 2nd, 3rd, 5th, 7th, 8th Streets, and Olympic Boulevard.

Scenario 3 builds off the improvements proposed in Scenario 1 and would designate the single southbound lane on Broadway from 2nd to 11th Streets as a "Transit Only" lane to accommodate buses and the streetcar tracks. All mixed flow vehicles currently traveling in the southbound direction of

Broadway would be diverted to adjacent roadways such as Hill and Spring Streets. Local access to businesses along the southbound direction of Broadway would travel along Hill and Spring Streets and circle back onto the northbound direction of Broadway to access their final destination. Except for transit vehicles, southbound right turn movements at 2nd, 3rd, 5th, 7th, 8th Streets, and Olympic Boulevard would be prohibited. It is assumed that 25 percent of the mixed flow vehicles along southbound Broadway would be local access trips and that 75 percent of the mixed flow vehicles are through trips. The distribution of the southbound through trips between Hill and Spring Streets used the same percentages that were presented in the Broadway Streetscape Plan Traffic Study dated November 2010.

Streetcar Run Time Estimates

To determine estimated streetcar run times, a run time analysis was completed along the corridor in September 2015, replicating the project alignment. The process started with a floating car travel time analysis to determine typical PM peak travel time and delay along the corridor. This analysis was performed to serve as a base to calibrate both an existing Base Condition Synchro network to model traffic signal delays and an existing streetcar run time model to determine streetcar performance if no improvements were made.

The streetcar run time models are based on station to station run times, dwell times and signalized intersection delays for the streetcar movement. The assumptions for each of these parameters are presented in the next section of this document.

Based on the initial Synchro delays, a Base Condition scenario was developed to show projected run times assuming no improvements were made.

Building on the Base Condition, Scenario 1 was developed with minimal improvements including optimization of existing signal timing splits. No Transit Signal Priority (TSP) timings were assumed in this analysis. There were no lane use changes made for Scenario 1. The run times were based on a revised Synchro output which reflected the adjusted signal timings, the addition of a protected right turn phase, where applicable, and the proposed addition of a right turn pocket lane at two intersection locations.

Scenario 2 was developed based on the signal time improvements in Scenario 1 and lane geometry changes along Broadway. Two southbound travel lanes are provided in this scenario from the one southbound lane currently available.

Scenario 3 converts the one southbound lane on Broadway to a transit only lane, including the streetcar. Scenario 3 also assumed the signal timing improvements made for Scenario 1.

Scenario 4 incorporates the incremental signal timing improvements included in Scenario 1, but consolidates the number of streetcar station stops from 25 to 16 and spaces them about every 1/4 mile from every 1/8 mile. The stations included in Scenario 4 are: 2nd/Grand, 2nd/Broadway, 4th/Broadway, 6th/Broadway, 8th/Broadway, Olympic/Broadway, 11th/Grand, 11th/Figueroa, 9th/Figueroa, 7th/Figueroa, 7th/Grand, 7th/Hill, 5th/Hill, Angel's Flight/Grand Central Market, 2nd/Hill, and 2nd/Grand.

Results of the run time analyses are presented later on in the technical memorandum.

Assumptions

The following assumptions were made for the Small Starts Speed Improvement Analysis for each of the intersection evaluations and the run time estimates.

Intersection Evaluations

- Existing (2015) intersection lane configurations were collected and verified by field observations;
- The analysis was based on existing 2014/2015 traffic counts provided by LADOT;
- Available traffic counts that are older than 2014/2015 were used and grown by an annual growth rate of 0.5% per year to reflect existing conditions (this ambient growth rate was used in the EIR traffic study and approved by LADOT);
- Existing signal timing was used. LADOT provided the latest signal timing changes along Broadway that were implemented due to the Streetscape Demonstration Project;
- Existing signal cycle lengths were maintained. The general PM peak hour cycle length is 90 seconds for the analyzed intersections. All current signal off-set parameters remained the same in the analysis;
- On one lane roadways, the bus blockage factor in the Synchro software was utilized to account for potential delays due to near side stops and the anticipated 20-second dwell time for passengers to board and alight;
- Extended yellow clearance times used in the EIR traffic study to reflect the potential for a streetcar to arrive at the intersection near the end of the green time and needing an extra clearance interval to safely clear the intersection were maintained;
- The traffic analysis was based on the streetcar characteristics that were presented and approved in the EIR traffic study. This included a 7-minute headway streetcar operation during the peak hours (9 streetcars per hour);
- Proposed improvements to reduce the streetcar delay consisted of:
  - Redistributing the green time within the existing signal cycle length to provide more green to the streetcar movement/direction. The amount of green time ranged from 5 to 15 seconds and depended on the needs at each intersection;
  - Adding a right turn only pocket lane. This was proposed at Broadway/11th Street and at Hill/6th Street;
  - Providing a protected right turn arrow to clear the right turn queue before or after the crossing of pedestrians. This was proposed at Broadway/3rd Street, Broadway/5th Street, Broadway/8th Street, and Figueroa/7th Street;
  - Extending the existing eastbound right turn lane storage length at Flower/7th Street to accommodate 6 to 7 turning vehicles in order to minimize queue spillover onto the eastbound 7th Street through movement.

The assumed physical and operational intersection improvements are intended to reduce the streetcar delay. Ongoing coordination between City of Los Angeles and Metro will be required for implementing these improvements

Streetcar Run Time Estimates

The estimated vehicle run time models are based on typical streetcar acceleration/deceleration rates of 2.5 mph per second and average dwell times of 20 seconds at each stop. The signal delay times are based on the Synchro output of total delay for the streetcar movement at each of the signalized intersections along the streetcar alignment within the study area. The total delay at signalized exclusive pedestrian crossings was assumed to be 10 seconds per signal.

The run time analysis does not include any layover times, and a total cycle time was not analyzed for the purpose of this estimate. It is assumed that the vehicle layover will occur at the 2^{nd}/Grand station.

Station locations, distances and curve data at intersections were based on the previous concept plans that are being used as the basis of the Environmental Documents. The maximum allowable streetcar speed was assumed to be the same as the posted speed limits.

Findings

The results and findings of the intersection evaluations and streetcar run time estimates for the Base Condition and various improvement scenarios are presented in the following sections.

Intersection Evaluations

The total delay for the streetcar movement was reported at each of the 34 intersections for each of the analysis scenarios. The attached summary table presents the PM peak hour delay for each scenario that was evaluated along with the improvements proposed. As shown from the results, the delays in Scenario 1 improve from the Base Condition due to the improvements proposed at thirteen intersection locations. In addition, improvements are proposed at three intersection locations based on the field observations. Scenario 2 continues to improve the delay, from Scenario 1, at eight intersection locations along Broadway. Scenario 3 continues to improve the delay, from Scenario 2, at eight intersection locations along Broadway. The delay numbers that improve from the previous scenario are shown in bold in the summary table. In addition, it should be noted that Scenario 3, which consists of the "Transit Only" lane along southbound Broadway, results in six (6) intersections being significantly impacted when the overall intersection delay is compared to that of the Base Condition. The six significantly impacted intersection locations are at 1^{st}/Hill, 3^{rd}/Hill, 7^{th}/Hill, Olympic/Hill, Olympic/Broadway, and

PM Peak Hour Delay for the Movements Along the Streetcar Alignment – Summary Table

PM Peak Hour Delay per Vehicle (Seconds per Vehicle)						
Intersection	**Movement**	**Base Condition**	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Improvements Proposed For Scenarios 1, 2, and 3**
Grand Ave / 1st St	NB Right	11	11	11	11	(Note that EIR assumes new protected streetcar phase for NB right turn from median)
Grand Ave / 1st St	WB Left	74	**49**	49	49	Redistribute the green time within the existing cycle length
Olive St / 1st St	EB Thru	32	32	32	32	
Olive St / 1st St	WB Thru	23	23	23	23	
Hill St / 1st St	EB Thru	114	**68**	68	68	Redistribute the green time within the existing cycle length
Hill St / 1st St	NB Left	56	56	56	56	(Note that EIR assumes new protected NB left phase)
Broadway / 1st St	EB Right	6	5	5	6	
Hill St / 2nd St	NB Thru	18	18	18	18	
Broadway / 2nd St	SB Thru	89	**55**	59	**40**	Redistribute the green time within the existing cycle length
Hill St / 3rd St	NB Thru	41	40	40	40	
Broadway / 3rd St	SB Thru	26	25	**12**	**8**	Provide a protected SB right turn arrow (except for Scenario 3)
Hill St / 4th St	NB Thru	9	12	12	12	
Broadway / 4th St	SB Thru	29	30	**28**	36	
Hill St / 5th St	NB Thru	29	**15**	15	15	Redistribute the green time within the existing cycle length
Broadway / 5th St	SB Thru	29	30	**28**	35	Provide a protected SB right turn arrow (except for Scenario 3)
Hill St / 6th St	NB Thru	13	**6**	6	7	Add a NB right turn only lane and redistribute the green time within the existing cycle length
Broadway / 6th St	SB Thru	25	25	**23**	**21**	
Figueroa St / 7th St	NB Right	22	**5**	5	5	Provide a protected NB right turn arrow
Flower St / 7th St	EB Thru	15	15	15	15	Extend the existing EB right turn lane storage length
Hope St / 7th St	EB Thru	10	10	10	10	
Grand Ave / 7th St	EB Thru	30	30	30	30	
Olive St / 7th St	EB Thru	11	11	11	11	
Hill St / 7th St	EB Left	31	31	31	31	(Note that EIR assumes new protected EB left turn phase)
Broadway / 7th St	SB Thru	18	18	**16**	**2**	
Figueroa St / 8th St	NB Thru	139	**36**	36	36	Redistribute the green time within the existing cycle length
Broadway / 8th St	SB Thru	104	**29**	**24**	**8**	Provide a protected SB right turn arrow and redistribute the green time within the existing cycle length
Figueroa St / 9th St	NB Thru	35	**28**	28	28	Redistribute the green time within the existing cycle length
Broadway / 9th St	SB Thru	17	25	**20**	**17**	
Figueroa St / Olympic Blvd	NB Thru	18	16	16	16	
Broadway / Olympic Blvd	SB Thru	35	**26**	**22**	**13**	Redistribute the green time within the existing cycle length
Figueroa St / 11th St	WB Right	25	25	25	25	
Flower St / 11th St	WB Thru	21	21	21	20	
Hope St / 11th St	WB Thru	50	**38**	38	38	Redistribute the green time within the existing cycle length
Grand Ave / 11th St	WB Thru	19	19	19	19	
Olive St / 11th St	WB Thru	25	22	22	22	
Hill St / 11th St	WB Thru	43	**25**	25	27	Redistribute the green time within the existing cycle length
Broadway / 11th St	SB Right	87	**9**	9	**2**	Add a SB right turn only lane

Scenario 1 = The Base Condition with the Proposed Intersection/Signal Timing Improvements

Scenario 2 = The Proposed Intersection/Signal Timing Improvements from Scenario 1 plus Two SB Lanes (1 MF & 1 Transit Only) on Broadway from 2nd to 11th Streets

Scenario 3 = The Proposed Intersection/Signal Timing Improvements from Scenario 1 (where applicable) plus One SB Transit Only Lane on Broadway from 2nd to 11th Streets

Olympic/Main. These locations show significant impacts from the Base Condition due to the fact that mixed flow vehicles were diverted to the adjacent roadways, such as Hill Street and Spring/Main Streets. The Synchro delay worksheets, at each intersection location, for the Base Condition and all three scenarios are presented in Attachment 1. It should be noted that Scenarios 2 and 3, which include a "Transit Only" lane along the southbound direction of Broadway, do not show a greater reduction in delay than what would be anticipated over Scenario 1 because the overall intersection cycle length and green times are allocated so that all traffic volumes and movements, as well as pedestrian movements, are accommodated adequately to clear the intersection and minimize queuing and prevent potential spillback to adjacent upstream intersections.

Streetcar Run Time Estimates

The results of the streetcar run time analyses for all scenarios, including the Base Condition are shown in the table below. The detailed run time worksheets are presented in Attachment 2.

Streetcar Run Time Analysis Results

Scenario	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)	Average Speed (mph)
Base Case Synchro Output	00:13:11	00:24:59	00:07:40	00:45:50	5.0
Scenario 1 Synchro Output - Base with Improvements	00:13:11	00:17:42	00:07:40	00:38:33	5.9
Scenario 2 Synchro Output - Two SB Broadway Lanes	00:13:11	00:17:08	00:07:40	00:37:59	6.0
Scenario 3 Synchro Output - Broadway Transit Only Lane	00:13:11	00:16:12	00:07:40	00:37:03	6.1
Scenario 4 Synchro Output - Base Case with Improvements and 16 Stops	00:11:36	00:17:42	00:04:40	00:33:58	6.7

As shown in the table, Scenario 4, with the 16 station stops, provides the fastest streetcar run time at just under 34 minutes. With the full 25 station stops, Scenario 3 provides the fastest run times at just over 37 minutes.

Conclusions

Redistributing 5 to 15 seconds of green time at 11 intersections, providing a protected right turn phase at 4 intersections, extending the right turn lane at one location, and providing new right turn lanes at two locations (Scenario 1), saves seven minutes of run time, getting us within 3.5 minutes of the 35 minute run time goal.

Adding a second lane southbound on Broadway with one of the two lanes being transit-only (Scenario 2) saves 34 seconds of run time compared to Scenario 1.

Converting the one southbound lane on Broadway to transit-only (Scenario 3) saves 90 seconds of run time compared to Scenario 1, but causes significant traffic impacts at six intersection locations.

Reducing the number of streetcar station stops from 25 to 16 by increasing the spacing from about 1/8 mile to 1/4 mile (Scenario 4), saves 4.5 minutes in run time compared to Scenario 1. Combined with the proposed Scenario 1 modifications, this would achieve the goal of a run time of less than 35 minutes. A STOPS ridership estimate was performed by Metro with the reduced number of streetcar station stops. The result was a reduction of 300 boardings per day, from 5,700 riders to 5,400 riders. The STOPS model results are presented in Attachment 3.

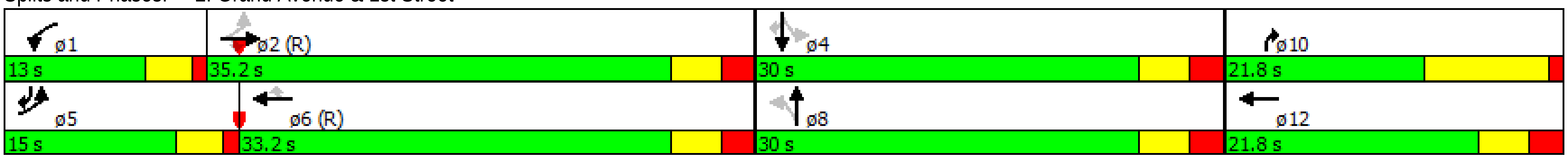
ATTACHMENT 1 – SYNCHRO DELAY WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.137			0.950			0.163			0.249			
Satd. Flow (perm)	224	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			333			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	35.2	35.2	13.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	42.2	29.7	29.7	9.0	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.42	0.30	0.30	0.09	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.77	0.30	0.86	0.65	0.86	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.4	38.7	4.1	73.6	14.8	27.2	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.4	38.7	4.1	73.6	14.8	27.2	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	E	B	C	E	D	B	D	E	A	
Approach Delay		48.4			27.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	22.6	21.9	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.5	0.0	0.0	
Total Delay	31.8	8.0	22.6	23.4	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.4	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

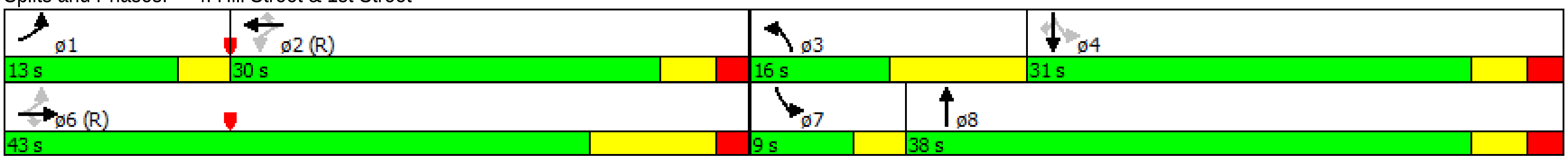
Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65			102		10				155
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	16.0	38.0		9.0	31.0	31.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	8.0	34.4		34.0	25.6	25.6
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.09	0.38		0.38	0.28	0.28
v/c Ratio	0.96	0.89	0.07	0.35	0.75	0.16	0.85	0.54		0.29	0.94	0.40
Control Delay	57.1	36.9	1.5	33.7	35.1	10.7	67.9	37.8		15.8	50.5	7.8
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	46.3	0.0		0.2	0.0	0.4
Total Delay	57.1	55.8	1.5	33.7	35.1	10.7	114.2	37.8		16.0	50.5	8.1
LOS	E	E	A	C	D	B	F	D		B	D	A
Approach Delay		54.7			33.0			49.7			41.6	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 46.0 Intersection LOS: D
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	38.5	28.5		44.3	25.8	
Queue Delay	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.1	6.2	15.0	13.9	4.1	38.5	28.5		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.1			13.0			29.3			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

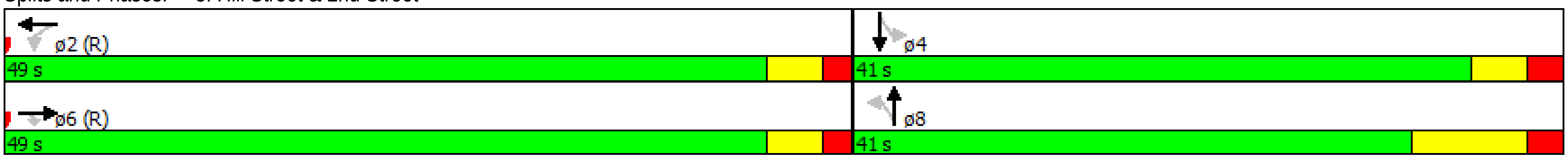
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		9.4		121.0	18.1		8.6	17.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		9.4		121.0	18.1		8.6	17.9	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			9.4			28.7			17.6	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Hill Street & 2nd Street

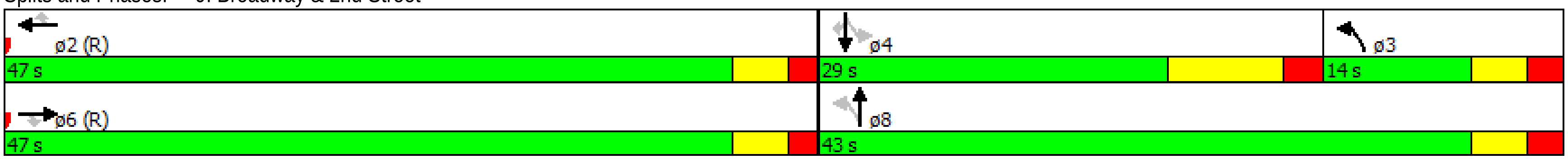


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	33	233	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1606	1374
Flt Permitted							0.493				0.810	
Satd. Flow (perm)	0	1676	1013	0	1676	1346	827	2945	0	0	1292	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		50				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	289	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8			4		4
Total Split (s)		47.0	47.0		47.0	47.0	14.0	43.0		29.0	29.0	29.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		47.3	47.3		47.3	47.3	33.4	32.3			20.1	20.1
Actuated g/C Ratio		0.53	0.53		0.53	0.53	0.37	0.36			0.22	0.22
v/c Ratio		0.69	0.14		0.57	0.05	0.32	0.35			1.00	0.14
Control Delay		16.6	0.5		6.0	0.2	20.1	18.4			88.8	7.2
Queue Delay		0.0	0.0		1.2	0.0	0.0	0.0			0.0	0.0
Total Delay		16.6	0.5		7.2	0.2	20.1	18.4			88.8	7.2
LOS		B	A		A	A	C	B			F	A
Approach Delay		14.7			6.7			18.8			77.6	
Approach LOS		B			A			B			E	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 23.8 Intersection LOS: C
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.2	27.8		102.2	41.1			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.2	27.8		102.2	41.1			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.9			48.1			54.2		
Approach LOS					C			D			D		

Intersection Summary

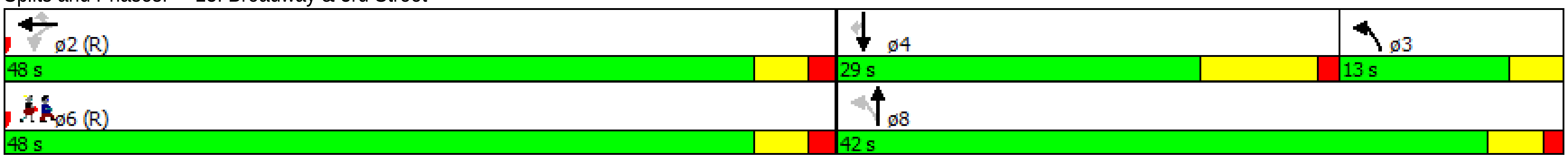
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.1	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	223	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.789					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2392	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						79	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	242	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.60			0.40	0.23	
Control Delay				12.7	29.3	5.3		8.1			26.3	11.9	
Queue Delay				0.0	28.9	0.0		0.2			0.0	0.1	
Total Delay				12.7	58.2	5.3		8.3			26.3	12.0	
LOS				B	E	A		A			C	B	
Approach Delay					53.6			8.3			22.4		
Approach LOS					D			A			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

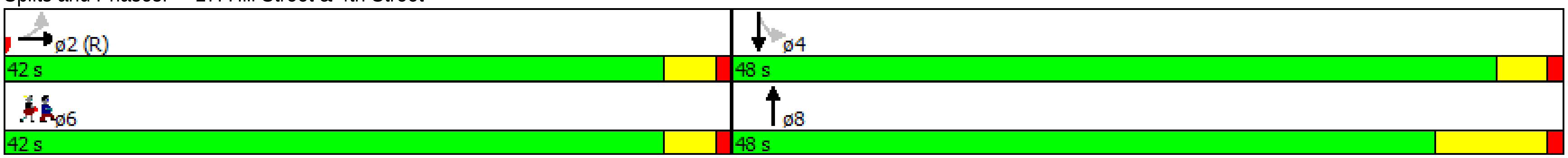


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						8.6		5.2	2.8		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						8.6		5.2	2.8		
LOS		B						A		A	A		
Approach Delay		17.3						8.6			3.1		
Approach LOS		B						A			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	314	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	341	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.57		
Control Delay		7.1						21.7			28.5		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.1						21.7			28.5		
LOS		A						C			C		
Approach Delay		7.1						21.7			28.5		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Pretimed

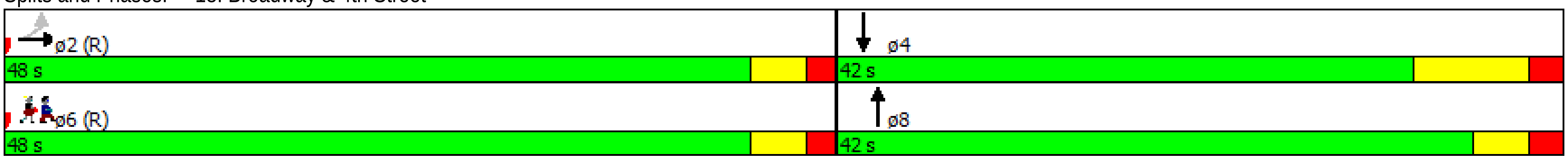
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.6 Intersection LOS: B

Intersection Capacity Utilization 53.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street

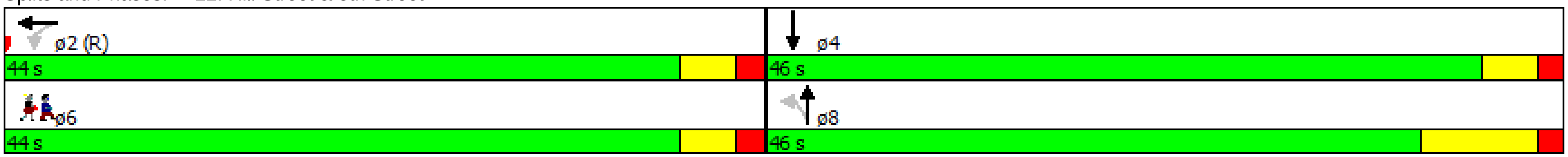


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5336	0	1593	3185	0	0	4248	0	
Flt Permitted				0.950			0.210						
Satd. Flow (perm)	0	0	0	993	5336	0	333	3185	0	0	4248	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					62						5		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				44.0	44.0		46.0	46.0			46.0		44.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				39.0	39.0		37.7	37.7			41.2		
Actuated g/C Ratio				0.43	0.43		0.42	0.42			0.46		
v/c Ratio				0.21	0.42		0.55	0.54			0.53		
Control Delay				5.4	4.5		44.8	29.2			32.0		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				5.4	4.5		44.8	29.2			32.0		
LOS				A	A		D	C			C		
Approach Delay					4.6			30.7			32.0		
Approach LOS					A			C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 22: Hill Street & 5th Street

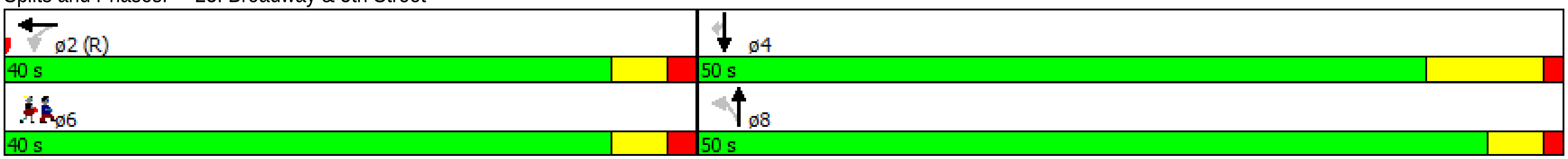


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	326	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.889					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2832	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	354	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.35			0.47	0.14	
Control Delay					11.1			19.9			29.5	18.9	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			19.9			29.5	18.9	
LOS					B			B			C	B	
Approach Delay					11.1			19.9			27.8		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Broadway & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3125	0	1593	4577	0	
Flt Permitted										0.236			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3125	0	396	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		51						22					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	879	0	93	803	0	
Turn Type		NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	45.0	45.0						45.0		45.0	45.0		45.0
Total Lost Time (s)		3.0						6.5		3.0	3.0		
Act Effct Green (s)		42.0						38.5		42.0	42.0		
Actuated g/C Ratio		0.47						0.43		0.47	0.47		
v/c Ratio		0.46						0.65		0.51	0.38		
Control Delay		5.7						12.9		15.6	6.1		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		5.7						12.9		15.6	6.1		
LOS		A						B		B	A		
Approach Delay		5.7						12.9			7.1		
Approach LOS		A						B			A		

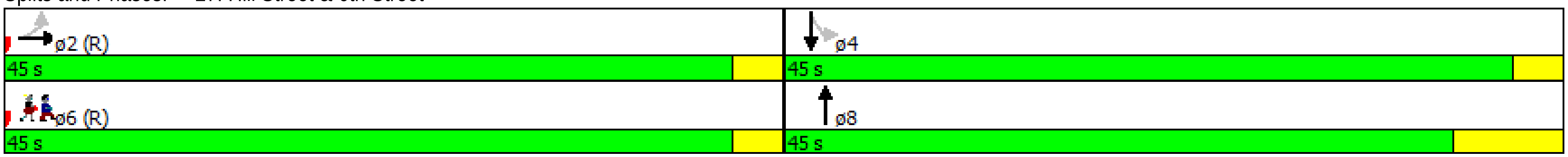
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.65

Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 64.4%	ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	365	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	397	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.61		
Control Delay		5.6						28.2			24.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		5.6						28.2			24.9		
LOS		A						C			C		
Approach Delay		5.6						28.2			24.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Actuated-Coordinated

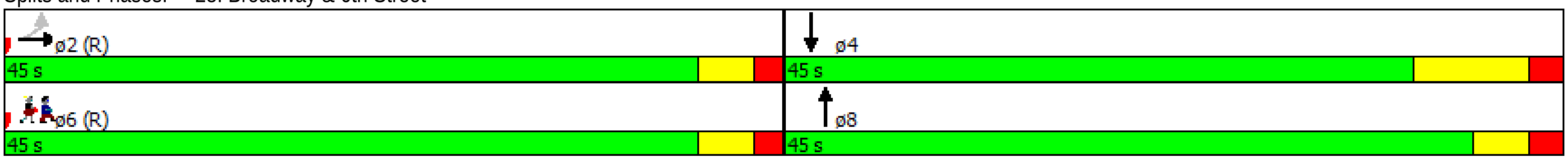
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.3 Intersection LOS: B

Intersection Capacity Utilization 53.0% ICU Level of Service A

Analysis Period (min) 15

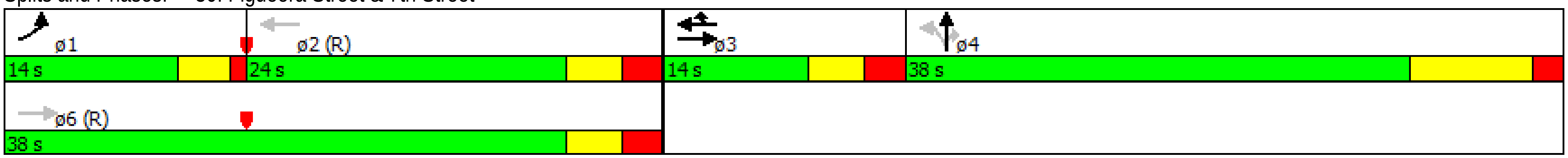
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	226	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm					
Protected Phases	1	3			3	3		4					2	6
Permitted Phases		6			2		4		4					
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.61					
Control Delay	41.7	14.1			8.7	11.1	71.5	42.1	21.6					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	71.5	42.1	21.6					
LOS	D	B			A	B	E	D	C					
Approach Delay		21.7			9.3			45.5						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

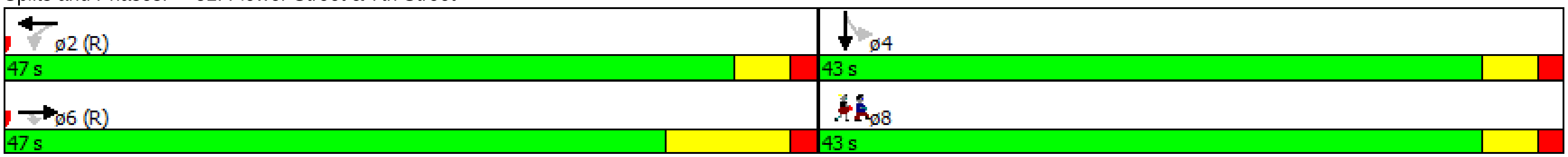


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.6	16.1		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.6	16.1		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		15.2			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Flower Street & 7th Street

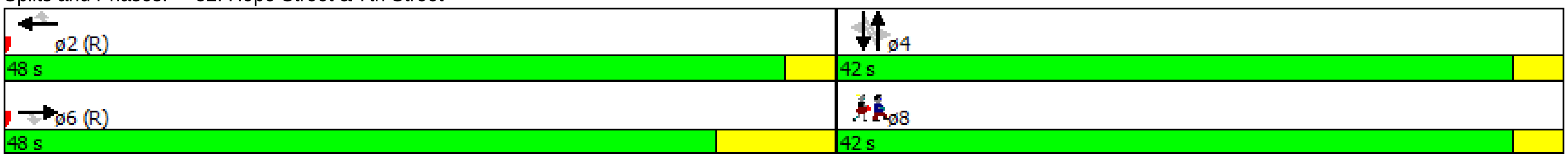


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.4	7.0		16.2	14.1		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.6	7.0		16.2	14.1		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.2			15.8			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 32: Hope Street & 7th Street

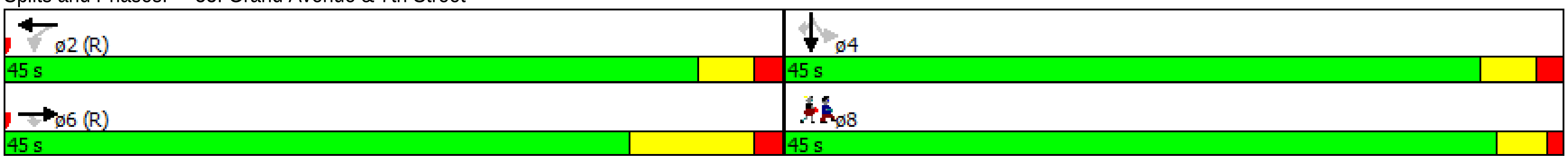


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.8	19.0	6.0	9.4					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.6	19.0	6.0	9.7					46.7	51.5	15.0	
LOS		C	B	A	A					D	D	B	
Approach Delay		27.8			9.4						49.7		
Approach LOS		C			A						D		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grand Avenue & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.3			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Control Type: Pretimed

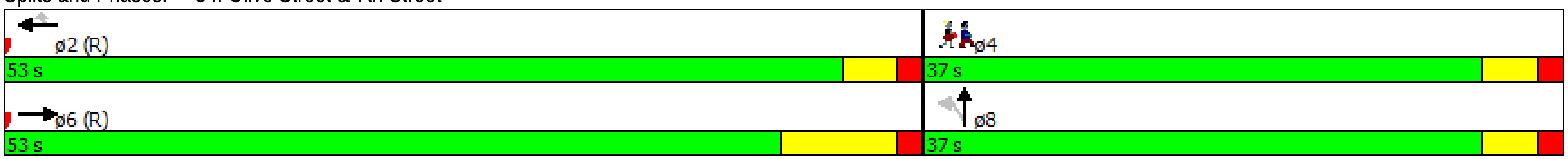
Maximum v/c Ratio: 0.84

Intersection Signal Delay: 20.4 Intersection LOS: C

Intersection Capacity Utilization 78.5% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 34: Olive Street & 7th Street

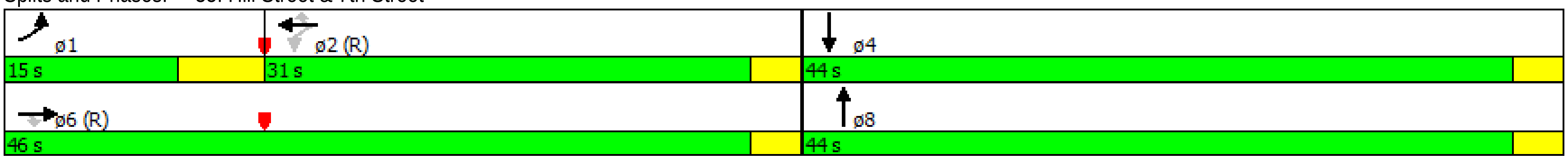


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	60.6	18.2		25.9			37.6	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	60.7	18.2		25.9			38.2	
LOS	C	C	A	C	E	B		C			D	
Approach Delay		21.9			51.6			25.9			38.2	
Approach LOS		C			D			C			D	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15

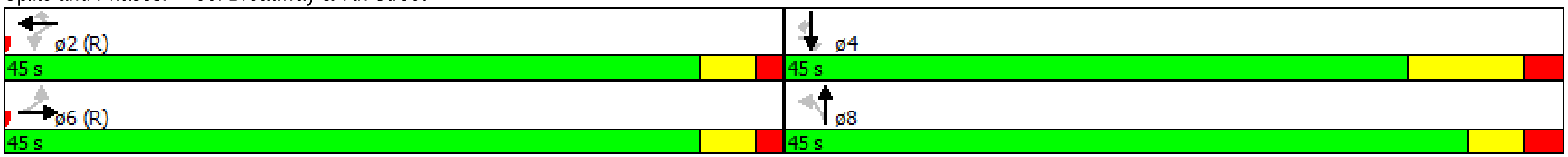
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	444	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.947				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2877	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	483	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.75	0.38
Control Delay	16.8	26.7	8.3	15.3	27.3	11.2		15.5			18.5	9.8
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.6	11.2		15.9			18.5	10.3
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.1			15.9			16.7	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

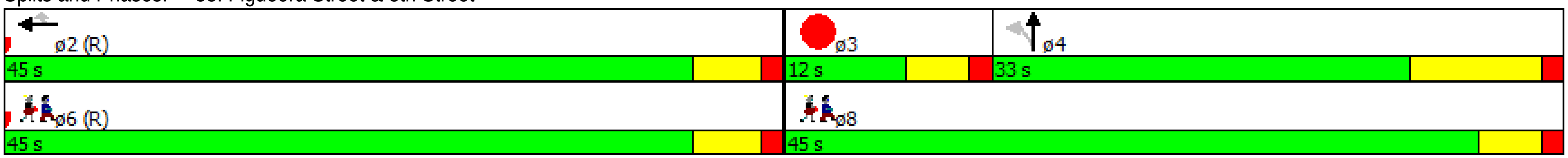


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						246									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					45.0	45.0	33.0	33.0					12.0	45.0	45.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					39.7	39.7		24.0							
Actuated g/C Ratio					0.44	0.44		0.27							
v/c Ratio					0.76	0.57		1.24							
Control Delay					23.6	9.8		138.7							
Queue Delay					0.0	0.0		0.0							
Total Delay					23.6	9.8		138.7							
LOS					C	A		F							
Approach Delay					21.5			138.7							
Approach LOS					C			F							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 79.4	Intersection LOS: E
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

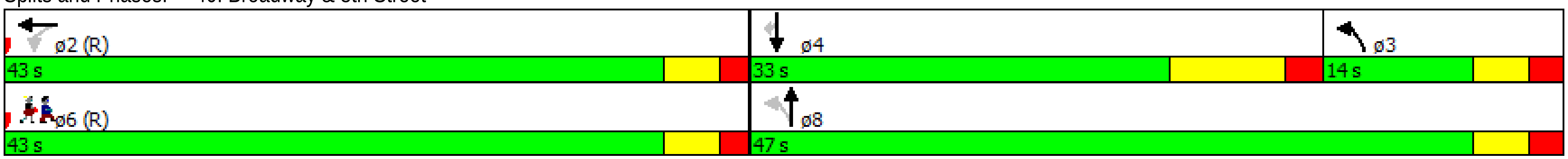
Splits and Phases: 38: Figueora Street & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	415	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.722					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2300	0	0	1616	931	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					17							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	451	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2			8					4	
Total Split (s)				43.0	43.0		14.0	47.0			33.0	33.0	43.0
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					38.0			41.7			24.2	24.2	
Actuated g/C Ratio					0.42			0.46			0.27	0.27	
v/c Ratio					0.53			0.66			1.04	0.24	
Control Delay					36.5			31.0			104.4	27.2	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					36.5			31.0			104.4	27.2	
LOS					D			C			F	C	
Approach Delay					36.5			31.0			93.5		
Approach LOS					D			C			F		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 46.7	Intersection LOS: D
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 40: Broadway & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	45.0	45.0						45.0	45.0				45.0	45.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	39.6	39.6						35.8	35.8					
Actuated g/C Ratio	0.44	0.44						0.40	0.40					
v/c Ratio	0.35	0.51						0.81	0.30					
Control Delay	12.4	17.9						34.8	26.0					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	12.4	17.9						34.8	26.0					
LOS	B	B						C	C					
Approach Delay		17.1						33.8						
Approach LOS		B						C						

Intersection Summary

Area Type: CBD

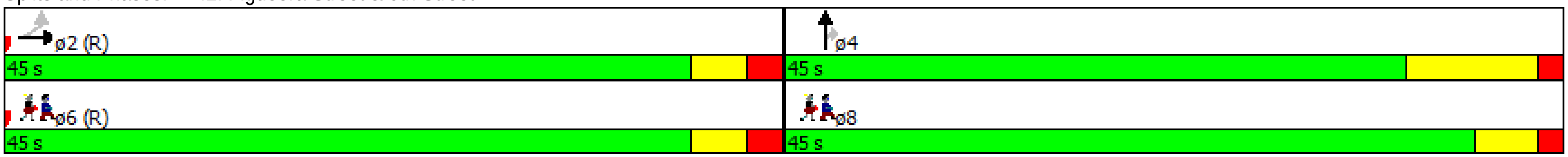
Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

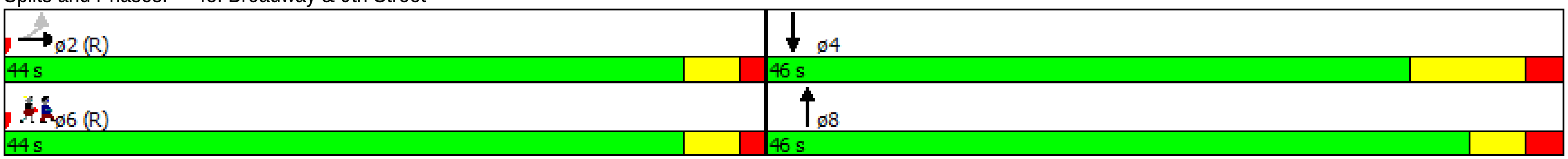


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	516	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	561	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.84		
Control Delay	11.6	15.0						14.2			16.7		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.6	15.6						14.2			16.7		
LOS	B	B						B			B		
Approach Delay		15.0						14.2			16.7		
Approach LOS		B						B			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 67.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street

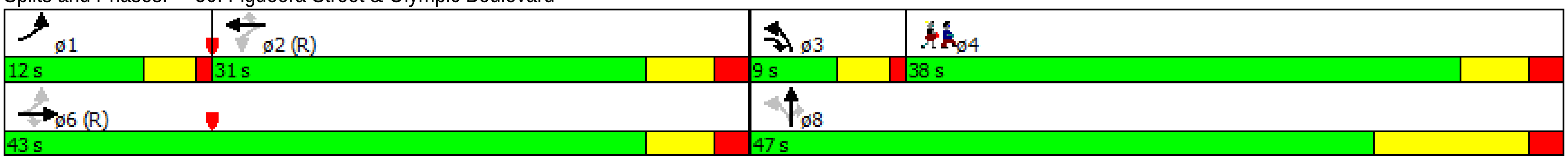


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.8	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.8	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15

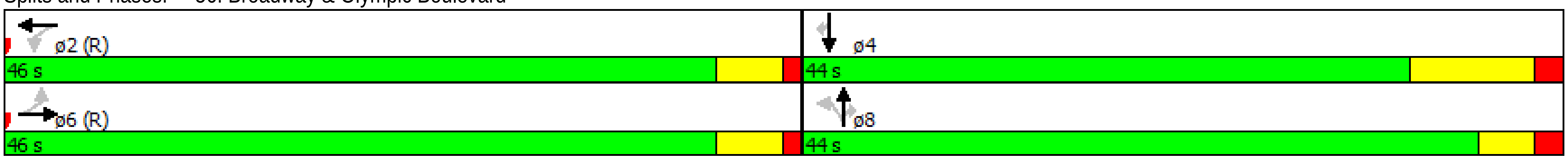
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	478	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3030	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.369			0.287				0.865				
Satd. Flow (perm)	585	3030	0	443	3067	0	0	2749	1252	0	1616	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			22				70			64
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	520	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	46.0	46.0		46.0	46.0		44.0	44.0	44.0		44.0	44.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	41.0	41.0		41.0	41.0			39.0	39.0		35.0	35.0
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.39	0.39
v/c Ratio	0.28	0.54		0.41	0.43			0.54	0.13		0.83	0.25
Control Delay	13.1	13.6		32.8	26.3			11.2	1.5		35.2	13.8
Queue Delay	0.0	0.5		0.0	3.5			0.0	0.0		0.0	0.0
Total Delay	13.1	14.0		32.8	29.8			11.2	1.5		35.2	13.8
LOS	B	B		C	C			B	A		D	B
Approach Delay		14.0			30.2			10.1			30.9	
Approach LOS		B			C			B			C	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

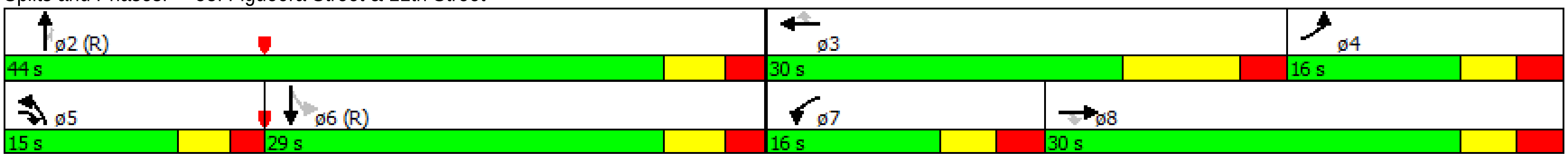


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	86.3	31.2	25.1	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	86.3	31.2	25.1	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

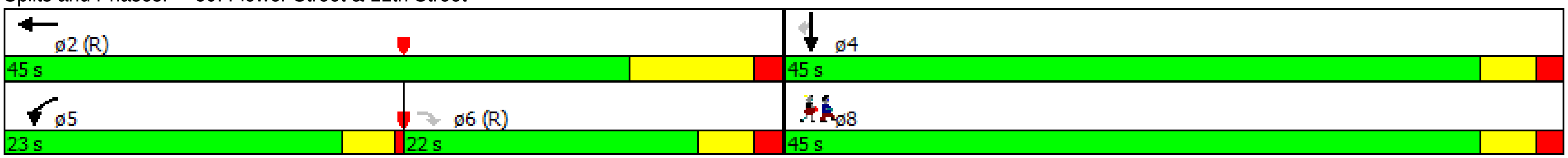


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	32.1	21.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	32.1	21.5						12.4	4.2	
LOS			A	C	C						B	A	
Approach Delay					22.9						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.896					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2851	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					38						42		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				37.0	37.0		53.0	53.0			53.0		37.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					28.7			48.6			48.6		
Actuated g/C Ratio					0.32			0.54			0.54		
v/c Ratio					0.67			0.16			0.22		
Control Delay					49.6			10.8			9.9		
Queue Delay					0.0			0.0			0.0		
Total Delay					49.6			10.8			9.9		
LOS					D			B			A		
Approach Delay					49.6			10.8			9.9		
Approach LOS					D			B			A		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green

Control Type: Pretimed

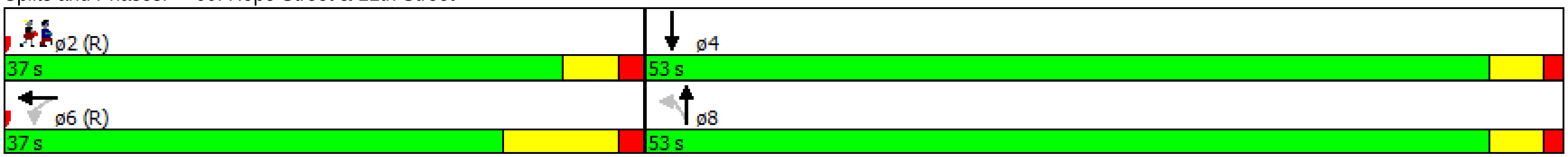
Maximum v/c Ratio: 0.67

Intersection Signal Delay: 30.8 Intersection LOS: C

Intersection Capacity Utilization 58.3% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

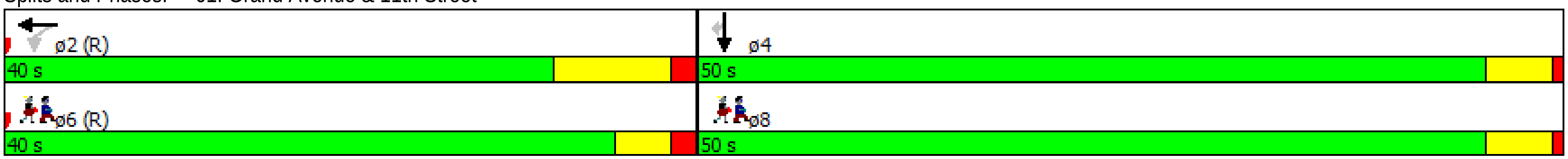


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				18.0	19.1						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				18.0	19.1						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.9						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 61: Grand Avenue & 11th Street

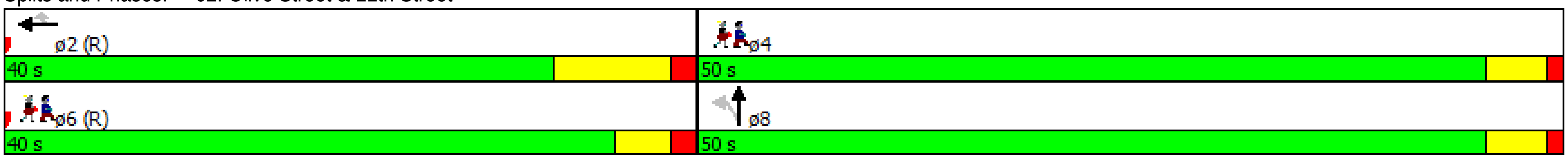


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					24.8	15.3		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					24.8	15.3		14.7						
LOS					C	B		B						
Approach Delay					23.1			14.7						
Approach LOS					C			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street

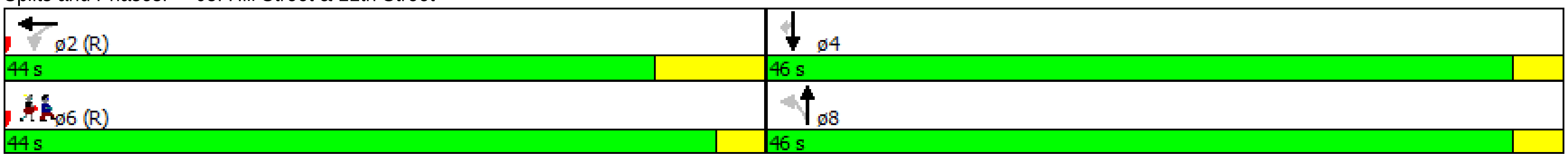


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.219						
Satd. Flow (perm)	0	0	0	1593	3134	0	367	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					17							60	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				44.0	44.0		46.0	46.0			46.0	46.0	44.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				37.5	37.5		43.0	43.0			43.0	43.0	
Actuated g/C Ratio				0.42	0.42		0.48	0.48			0.48	0.48	
v/c Ratio				0.14	0.57		0.12	0.37			0.58	0.10	
Control Delay				29.9	36.3		15.3	15.8			31.1	16.6	
Queue Delay				0.0	6.6		0.0	0.0			0.0	0.0	
Total Delay				29.9	42.9		15.3	15.8			31.1	16.6	
LOS				C	D		B	B			C	B	
Approach Delay					41.5			15.8			30.0		
Approach LOS					D			B			C		

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 30.6 Intersection LOS: C
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

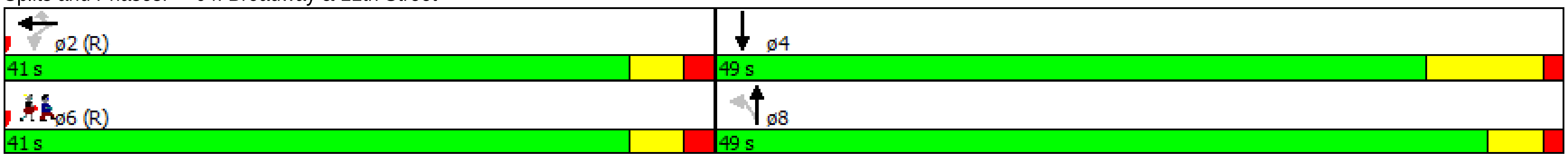
Splits and Phases: 63: Hill Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1556	0	
Flt Permitted					0.997		0.127						
Satd. Flow (perm)	0	0	0	0	3093	998	213	3185	0	0	1556	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61					10		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	778	0	
Turn Type				Perm	NA	Perm	Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8						
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0		41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0		
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0		
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46		
v/c Ratio					0.48	0.12	0.67	0.45			1.09		
Control Delay					13.9	1.8	52.4	16.0			80.8		
Queue Delay					0.4	0.0	13.3	0.0			5.7		
Total Delay					14.3	1.8	65.7	16.0			86.5		
LOS					B	A	E	B			F		
Approach Delay					13.3			20.4			86.5		
Approach LOS					B			C			F		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

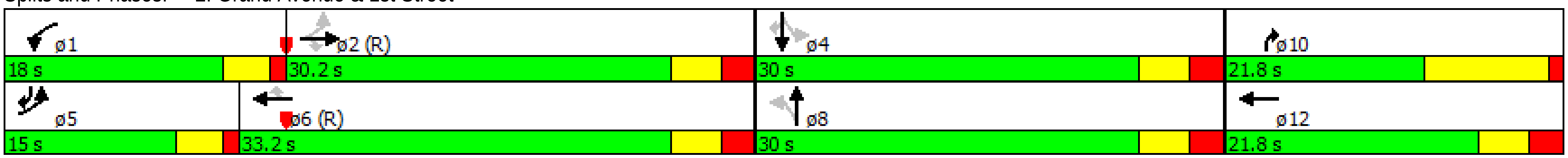


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.6	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.6	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

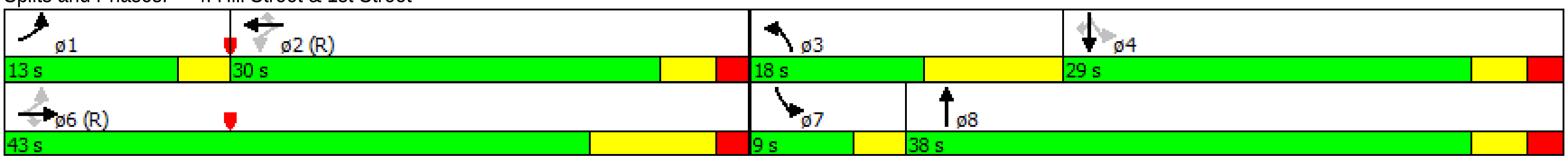
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.35	0.75	0.14	0.71	0.54		0.30	0.99	0.35
Control Delay	57.1	36.9	0.1	33.8	35.2	3.9	46.3	37.8		16.3	64.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.0		0.2	0.0	0.2
Total Delay	57.1	55.8	0.1	33.8	35.2	3.9	67.8	37.8		16.5	64.0	2.8
LOS	E	E	A	C	D	A	E	D		B	E	A
Approach Delay		54.7			32.4			42.5			51.4	
Approach LOS		D			C			D			D	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 47.1	Intersection LOS: D
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	39.9	29.2		44.3	25.8	
Queue Delay	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.4	6.2	15.0	13.9	4.1	39.9	29.2		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.3			13.0			30.1			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

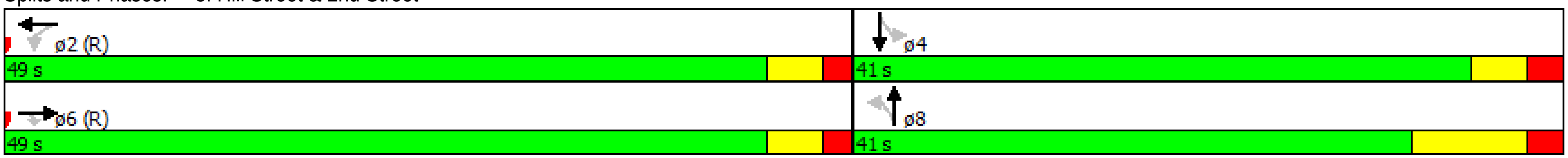
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		11.4		120.9	18.1		7.7	16.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		11.4		120.9	18.1		7.7	16.6	
LOS		B	A		B		F	B		A	B	
Approach Delay		12.7			11.4			28.7			16.3	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

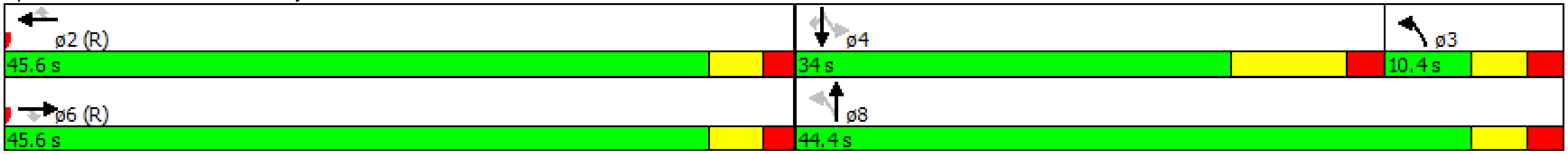
Splits and Phases: 8: Hill Street & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	33	233	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1606	1374
Flt Permitted							0.505				0.861	
Satd. Flow (perm)	0	1676	1013	0	1676	1346	847	2945	0	0	1373	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		52				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	289	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8			4		4
Total Split (s)		45.6	45.6		45.6	45.6	10.4	44.4		34.0	34.0	34.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		45.7	45.7		45.7	45.7	35.1	33.9			21.9	21.9
Actuated g/C Ratio		0.51	0.51		0.51	0.51	0.39	0.38			0.24	0.24
v/c Ratio		0.71	0.14		0.59	0.06	0.30	0.33			0.87	0.13
Control Delay		20.1	0.6		8.0	0.3	16.5	15.6			55.3	4.0
Queue Delay		0.0	0.0		1.1	0.0	0.0	0.0			0.0	0.0
Total Delay		20.1	0.6		9.1	0.3	16.5	15.6			55.3	4.0
LOS		C	A		A	A	B	B			E	A
Approach Delay		17.8			8.4			15.8			48.2	
Approach LOS		B			A			B			D	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 19.8	Intersection LOS: B
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.2	27.7		101.1	39.7			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.2	27.7		101.1	39.7			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.8			46.8			54.2		
Approach LOS					C			D			D		

Intersection Summary

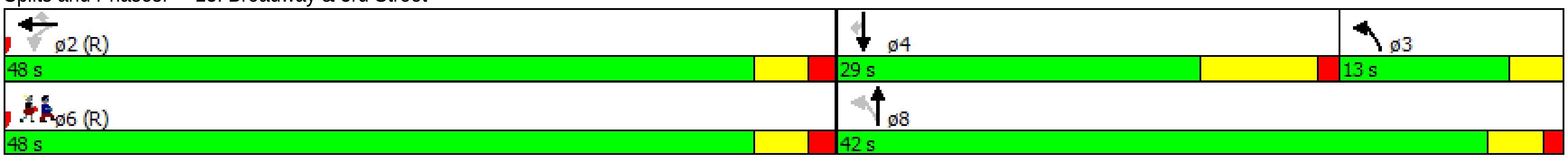
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	223	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.789					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2392	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						79	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	242	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.60			0.40	0.23	
Control Delay				12.6	29.2	5.3		8.1			24.7	11.8	
Queue Delay				0.0	28.9	0.0		0.2			0.0	0.1	
Total Delay				12.6	58.1	5.3		8.3			24.7	11.9	
LOS				B	E	A		A			C	B	
Approach Delay					53.6			8.3			21.1		
Approach LOS					D			A			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

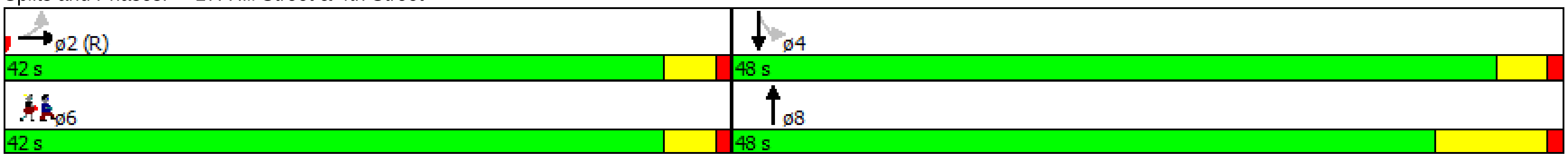


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						12.4		5.1	2.8		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.4		5.1	2.8		
LOS		B						B		A	A		
Approach Delay		17.3						12.4			3.1		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

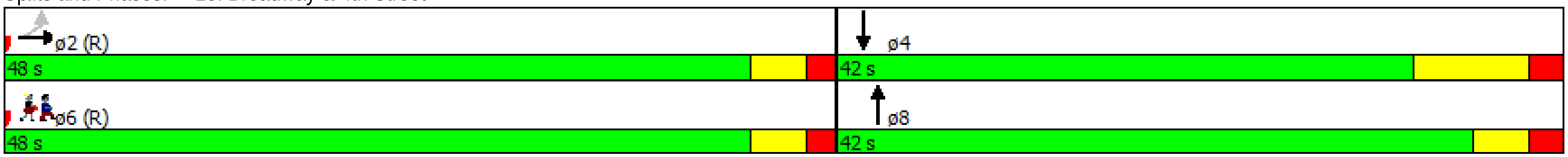


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	314	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	341	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.57		
Control Delay		7.0						21.7			29.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.0						21.7			29.9		
LOS		A						C			C		
Approach Delay		7.0						21.7			29.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 18: Broadway & 4th Street

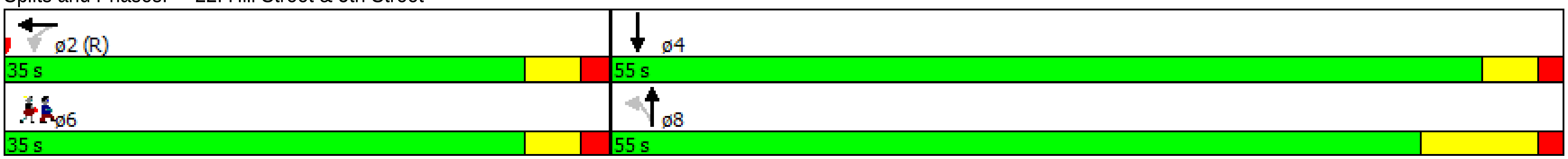


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5335	0	1593	3185	0	0	4249	0	
Flt Permitted				0.950			0.235						
Satd. Flow (perm)	0	0	0	993	5335	0	371	3185	0	0	4249	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					53						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.27	0.55		0.40	0.43			0.43		
Control Delay				9.1	8.0		23.0	15.0			23.5		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				9.1	8.0		23.0	15.0			23.5		
LOS				A	A		C	B			C		
Approach Delay					8.1			15.8			23.5		
Approach LOS					A			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 22: Hill Street & 5th Street

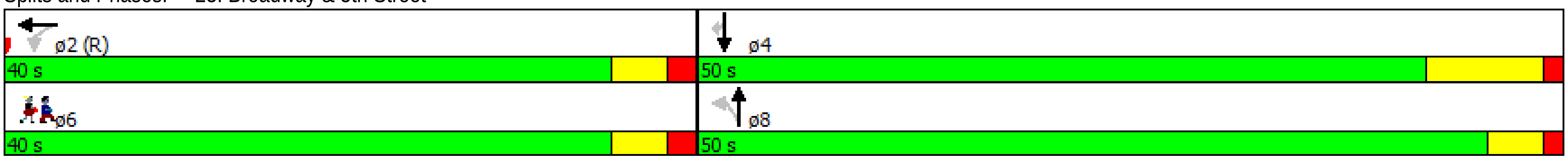


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	326	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.889					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2832	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	354	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.35			0.47	0.14	
Control Delay					11.1			16.9			30.0	18.9	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			16.9			30.0	18.9	
LOS					B			B			C	B	
Approach Delay					11.1			16.9			28.3		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: Broadway & 5th Street

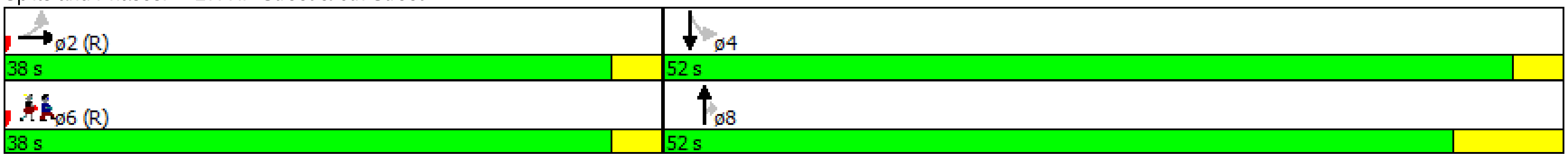


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	803	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.32		
Control Delay		6.7						6.5	3.7	7.4	4.9		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.7						6.5	3.7	7.4	4.9		
LOS		A						A	A	A	A		
Approach Delay		6.7						6.2			5.2		
Approach LOS		A						A			A		

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.1 Intersection LOS: A
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

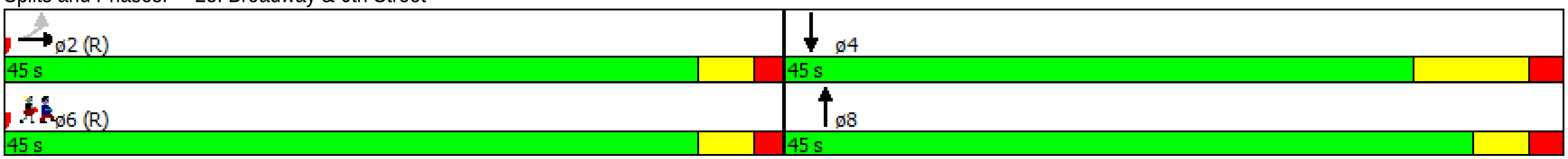


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	365	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	397	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.61		
Control Delay		6.2						23.9			24.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.2						23.9			24.9		
LOS		A						C			C		
Approach Delay		6.2						23.9			24.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 53.0% ICU Level of Service A
Analysis Period (min) 15

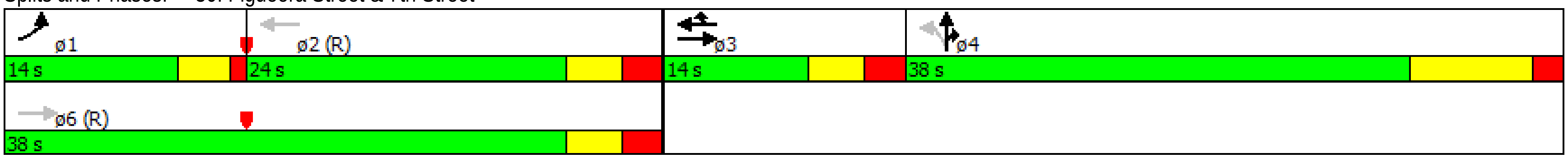
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

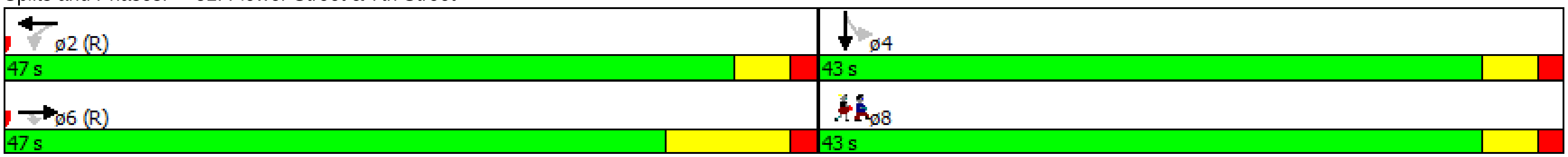


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

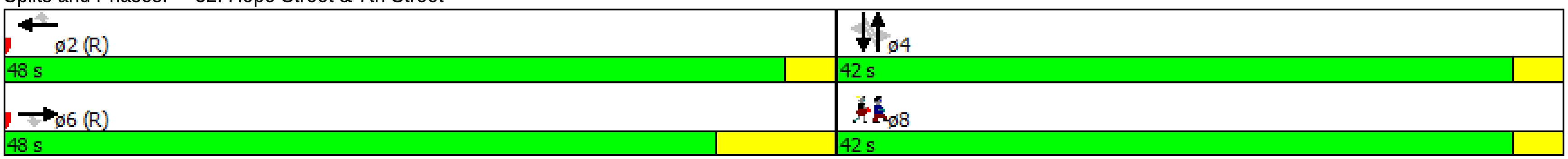
Splits and Phases: 31: Flower Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.5		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.5		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.3			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

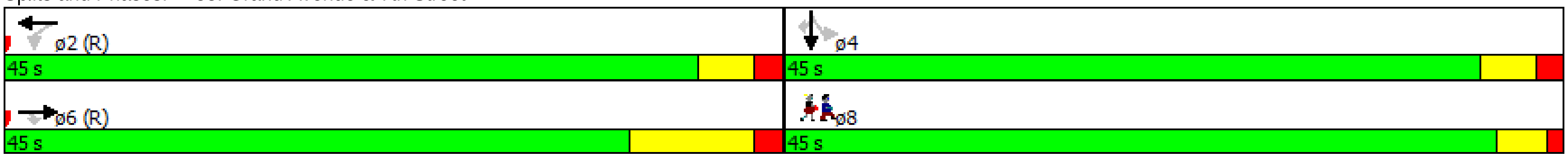
Splits and Phases: 32: Hope Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	6.5	10.0					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	6.5	10.4					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			10.1						49.7		
Approach LOS		C			B						D		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grand Avenue & 7th Street

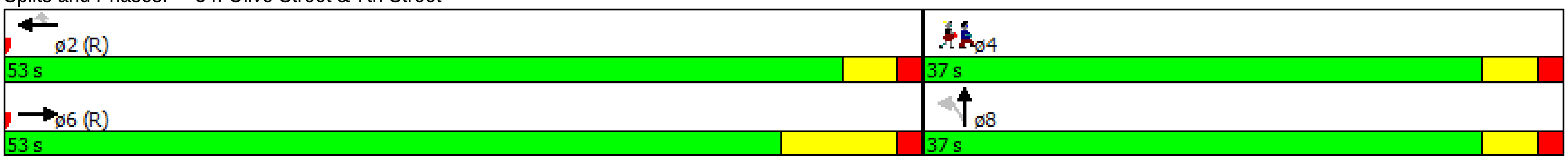


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.4			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 34: Olive Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	60.7	18.2		25.7			33.4	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	60.8	18.2		25.8			34.0	
LOS	C	C	A	C	E	B		C			C	
Approach Delay		21.9			51.6			25.8			34.0	
Approach LOS		C			D			C			C	

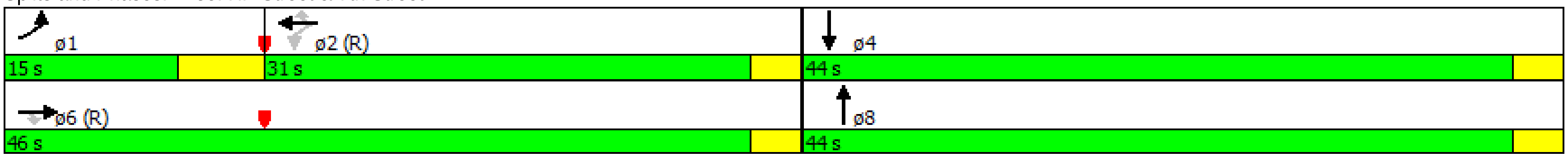
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D

Analysis Period (min) 15

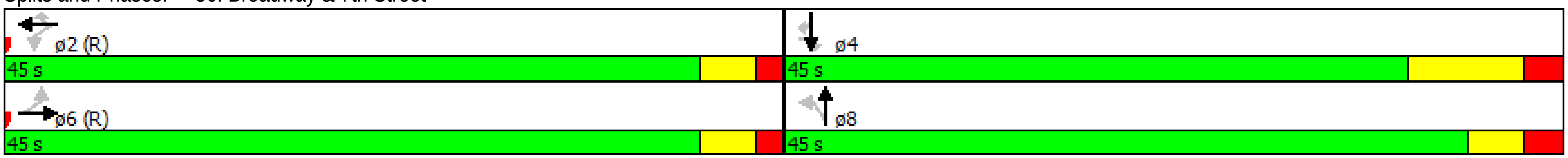
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	444	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.947				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2877	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	483	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.75	0.38
Control Delay	16.8	26.7	8.3	15.3	27.4	11.2		18.2			18.5	9.9
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.7	11.2		18.6			18.5	10.3
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.2			18.6			16.7	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

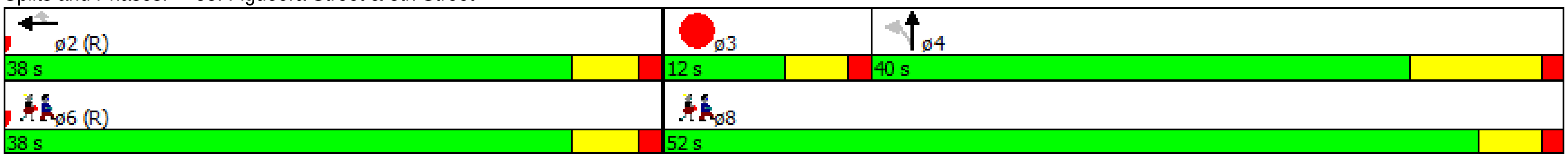


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street

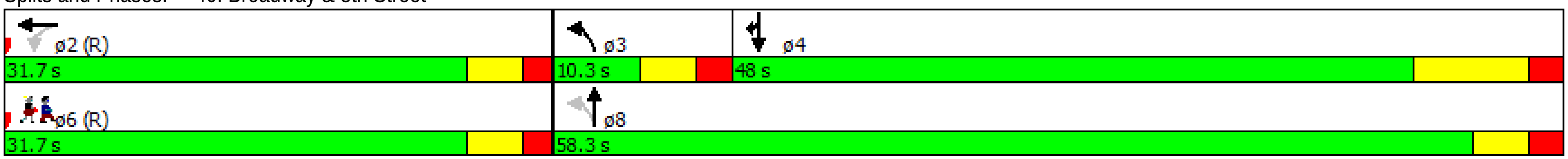


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	415	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.775					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2469	0	0	1616	1374	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					14							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	451	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Prot	
Protected Phases					2		3	8			4	4	6
Permitted Phases				2			8						
Total Split (s)				31.7	31.7		10.3	58.3			48.0	48.0	31.7
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					26.7			53.0			39.2	39.2	
Actuated g/C Ratio					0.30			0.59			0.44	0.44	
v/c Ratio					0.75			0.51			0.64	0.11	
Control Delay					41.0			19.7			29.1	10.5	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					41.0			19.7			29.1	10.5	
LOS					D			B			C	B	
Approach Delay					41.0			19.7			26.5		
Approach LOS					D			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 40: Broadway & 8th Street

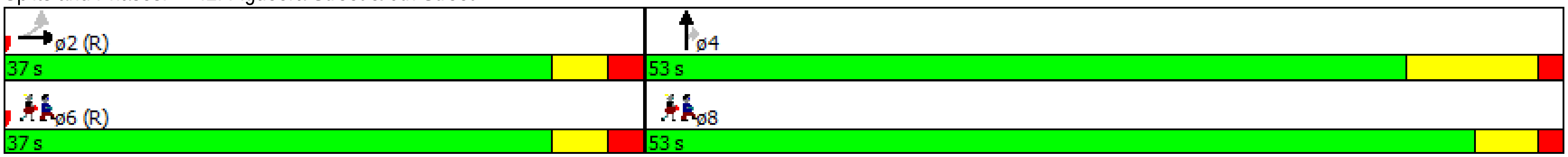


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

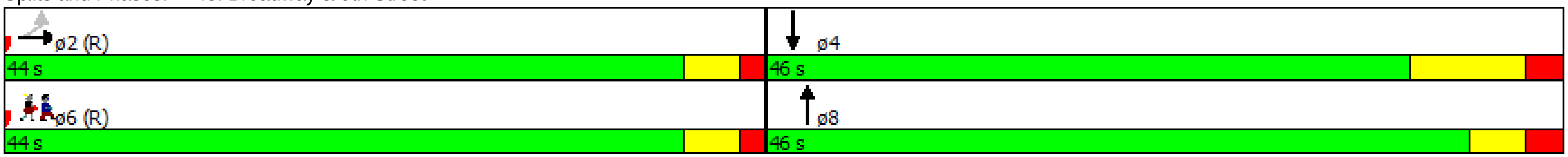


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	516	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	561	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.84		
Control Delay	11.3	14.6						14.6			25.3		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.3	15.2						14.6			25.3		
LOS	B	B						B			C		
Approach Delay		14.7						14.6			25.3		
Approach LOS		B						B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 67.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street

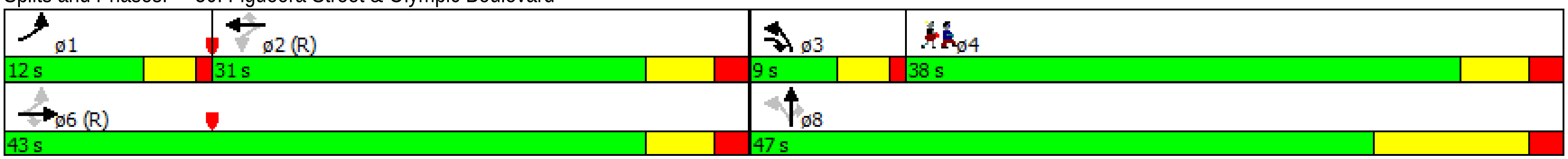


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15

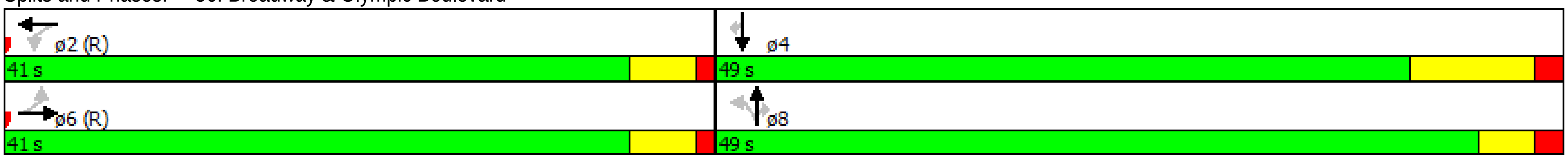
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	478	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3071	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.348			0.261				0.894				
Satd. Flow (perm)	553	3071	0	418	3067	0	0	2840	1253	0	1616	1197
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20				47			71
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	520	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0	49.0		49.0	49.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	36.0	36.0		36.0	36.0			44.0	44.0		40.0	40.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.49	0.49		0.44	0.44
v/c Ratio	0.33	0.61		0.50	0.48			0.46	0.12		0.72	0.22
Control Delay	24.9	26.0		37.2	27.1			9.3	2.7		25.3	9.3
Queue Delay	0.0	0.7		0.0	3.6			0.0	0.0		0.0	0.0
Total Delay	24.9	26.7		37.2	30.7			9.3	2.7		25.3	9.3
LOS	C	C		D	C			A	A		C	A
Approach Delay		26.6			31.5			8.6			22.1	
Approach LOS		C			C			A			C	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 22.2	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

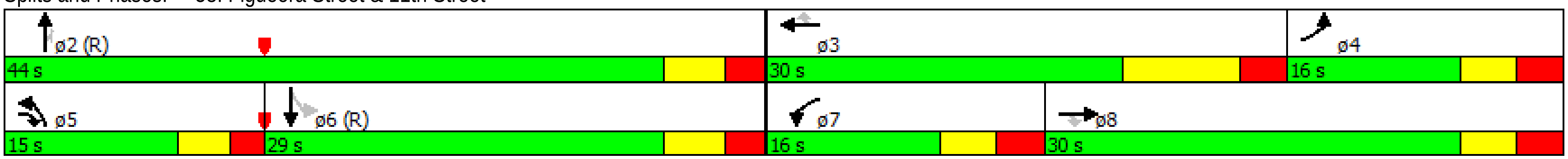


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 58: Figueora Street & 11th Street

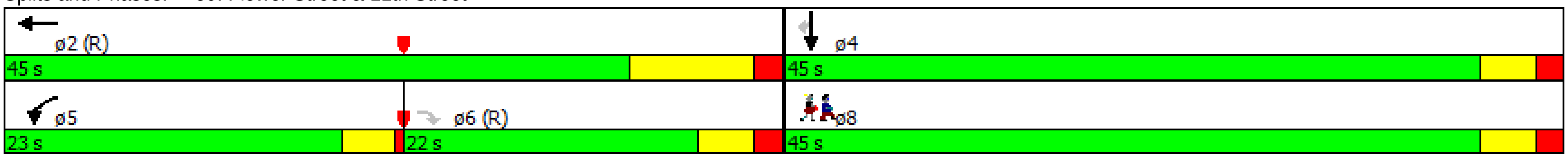


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street

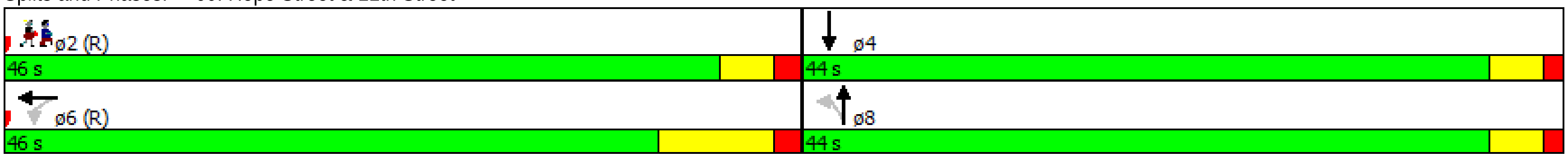


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 27.2 Intersection LOS: C
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15

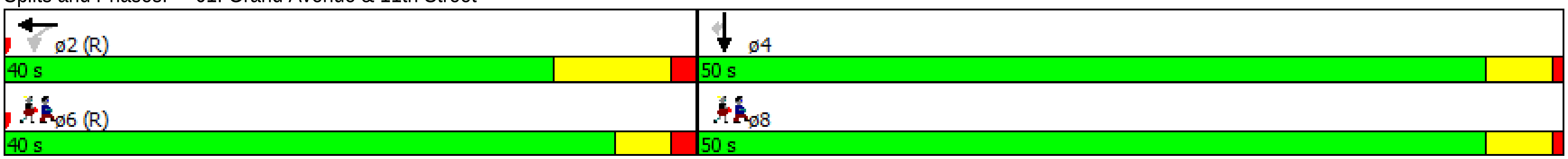
Splits and Phases: 60: Hope Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.9	19.0						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.9	19.0						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.7						17.2			
Approach LOS					B						B			

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Grand Avenue & 11th Street

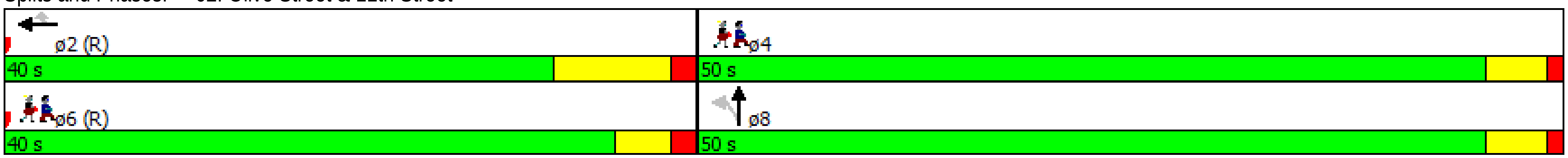


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					21.5	12.9		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					21.5	12.9		14.7						
LOS					C	B		B						
Approach Delay					19.9			14.7						
Approach LOS					B			B						

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 16.7 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.191						
Satd. Flow (perm)	0	0	0	1593	3134	0	320	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					19							54	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.51		0.16	0.42			0.66	0.12	
Control Delay				20.8	24.2		19.8	19.5			35.3	19.5	
Queue Delay				0.0	1.5		0.0	0.0			0.0	0.0	
Total Delay				20.8	25.7		19.8	19.5			35.3	19.5	
LOS				C	C		B	B			D	B	
Approach Delay					25.1			19.5			34.1		
Approach LOS					C			B			C		

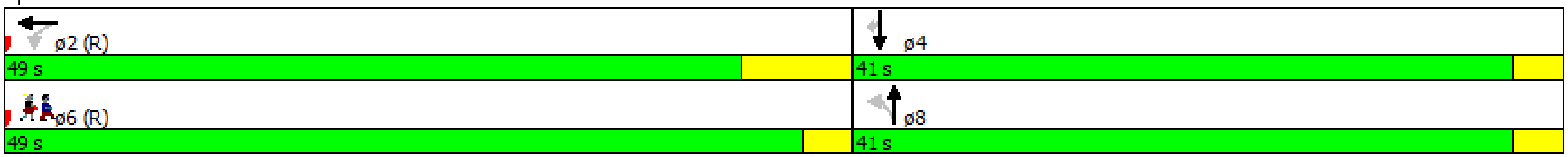
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 27.3	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B

Analysis Period (min) 15

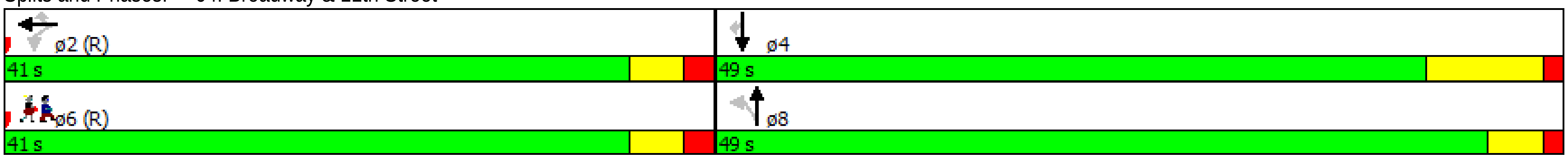
Splits and Phases: 63: Hill Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.205						
Satd. Flow (perm)	0	0	0	0	3093	998	344	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61						42	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	683	95	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.12	0.41	0.45			0.93	0.18	
Control Delay					13.9	1.8	23.8	16.0			34.7	8.7	
Queue Delay					0.4	0.0	0.3	0.0			0.0	0.0	
Total Delay					14.3	1.8	24.1	16.0			34.7	8.8	
LOS					B	A	C	B			C	A	
Approach Delay					13.3			16.7			31.6		
Approach LOS					B			B			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

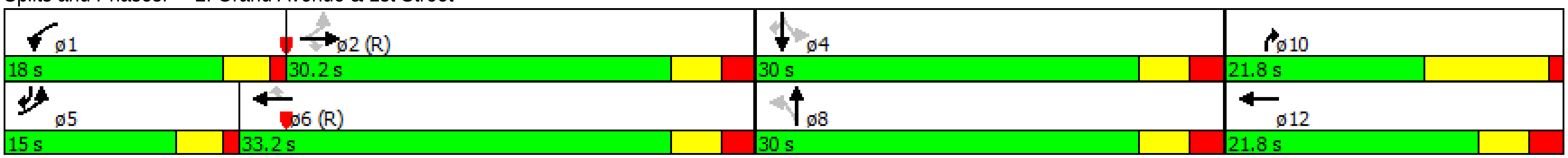


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.6	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.6	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.3 | Intersection LOS: C
Intersection Capacity Utilization 73.0% | ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.35	0.75	0.14	0.71	0.54		0.30	0.99	0.35
Control Delay	57.1	36.9	0.1	33.8	35.1	3.8	46.3	37.8		16.3	64.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.0		0.2	0.0	0.2
Total Delay	57.1	55.8	0.1	33.8	35.1	3.8	67.8	37.8		16.5	64.0	2.8
LOS	E	E	A	C	D	A	E	D		B	E	A
Approach Delay		54.7			32.3			42.4			51.4	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

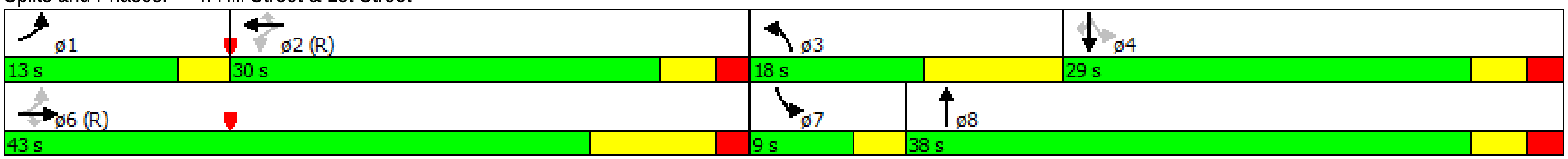
Maximum v/c Ratio: 0.99

Intersection Signal Delay: 47.1 Intersection LOS: D

Intersection Capacity Utilization 92.1% ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	36.2	25.0		44.3	25.8	
Queue Delay	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.4	6.2	15.0	13.9	4.1	36.2	25.0		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.3			13.0			25.9			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type:	CBD	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.64		
Intersection Signal Delay: 23.5		Intersection LOS: C
Intersection Capacity Utilization 84.2%		ICU Level of Service E
Analysis Period (min) 15		

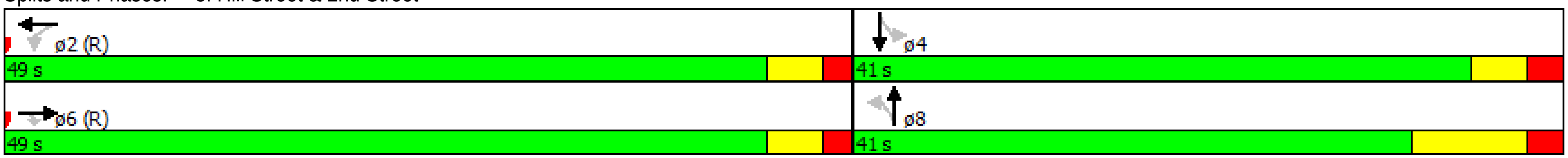
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		9.2		120.9	18.2		7.7	16.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		9.2		120.9	18.2		7.7	16.7	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			9.2			28.7			16.4	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

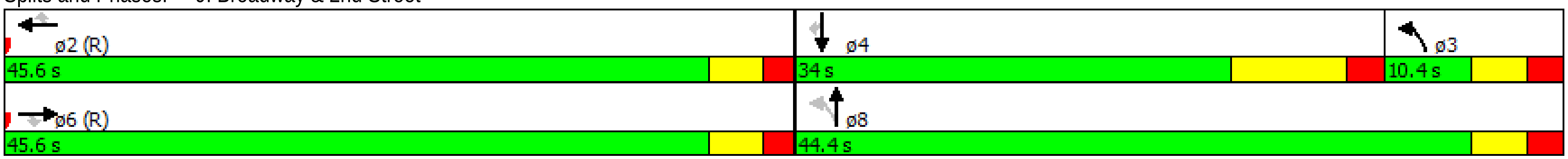
Splits and Phases: 8: Hill Street & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	0	153	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1616	1374
Flt Permitted							0.652					
Satd. Flow (perm)	0	1676	1013	0	1676	1346	1093	2945	0	0	1616	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		52				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	166	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Total Split (s)		45.6	45.6		45.6	45.6	10.4	44.4			34.0	34.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		52.3	52.3		52.3	52.3	28.4	27.3			15.0	15.0
Actuated g/C Ratio		0.58	0.58		0.58	0.58	0.32	0.30			0.17	0.17
v/c Ratio		0.62	0.13		0.51	0.05	0.30	0.41			0.61	0.17
Control Delay		12.9	0.4		3.0	0.1	28.9	29.0			58.8	10.3
Queue Delay		0.0	0.0		0.5	0.0	0.0	0.0			0.0	0.0
Total Delay		12.9	0.4		3.5	0.1	28.9	29.0			58.8	10.3
LOS		B	A		A	A	C	C			E	B
Approach Delay		11.4			3.3			29.0			48.3	
Approach LOS		B			A			C			D	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.1	27.5		101.1	39.7			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.1	27.5		101.1	39.7			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.6			46.8			54.2		
Approach LOS					C			D			D		

Intersection Summary

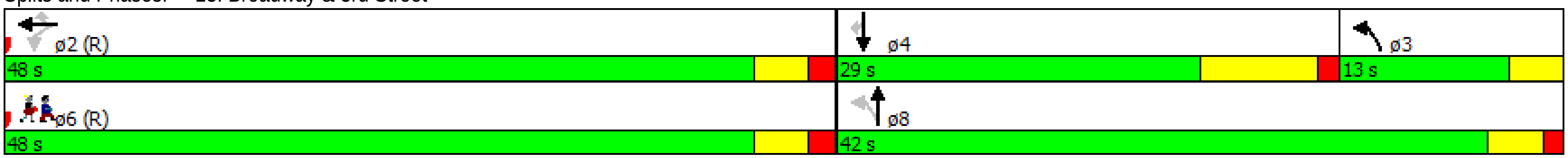
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	143	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.824					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2467	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						92	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	155	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.58			0.25	0.22	
Control Delay				12.8	29.3	5.3		7.8			12.0	3.2	
Queue Delay				0.0	28.9	0.0		0.1			0.0	0.1	
Total Delay				12.8	58.2	5.3		8.0			12.0	3.3	
LOS				B	E	A		A			B	A	
Approach Delay					53.7			8.0			8.7		
Approach LOS					D			A			A		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

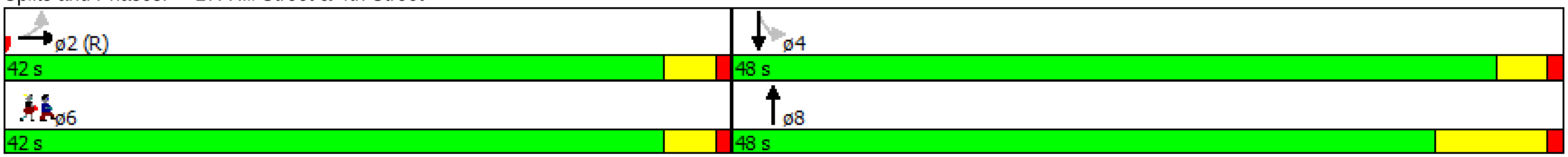


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						12.4		5.1	2.7		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.4		5.1	2.7		
LOS		B						B		A	A		
Approach Delay		17.3						12.4			2.9		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

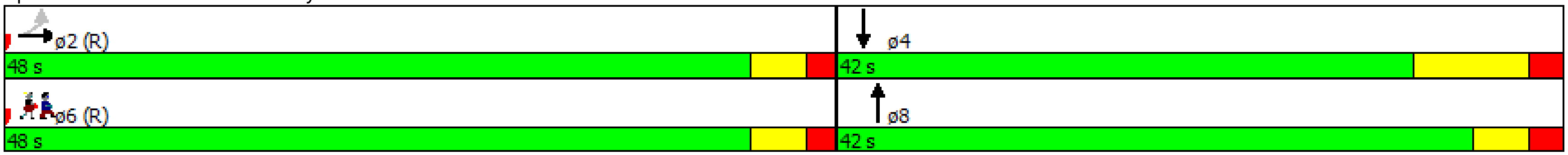


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	234	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	254	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.43		
Control Delay		7.0						21.7			27.6		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.0						21.7			27.6		
LOS		A						C			C		
Approach Delay		7.0						21.7			27.6		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street

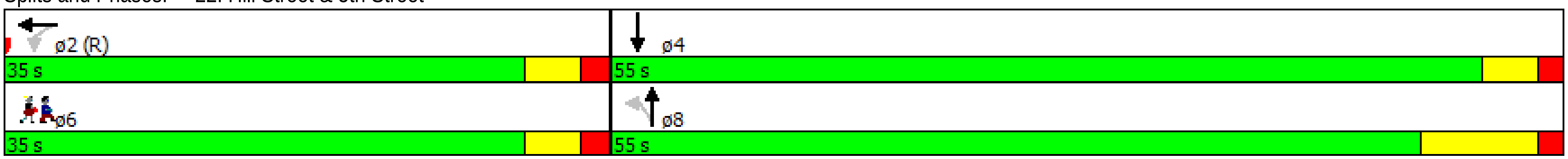


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5335	0	1593	3185	0	0	4249	0	
Flt Permitted				0.950			0.235						
Satd. Flow (perm)	0	0	0	993	5335	0	371	3185	0	0	4249	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					53						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.27	0.55		0.40	0.43			0.43		
Control Delay				9.1	8.0		22.9	15.0			23.5		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				9.1	8.0		22.9	15.0			23.5		
LOS				A	A		C	B			C		
Approach Delay					8.1			15.8			23.5		
Approach LOS					A			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 22: Hill Street & 5th Street

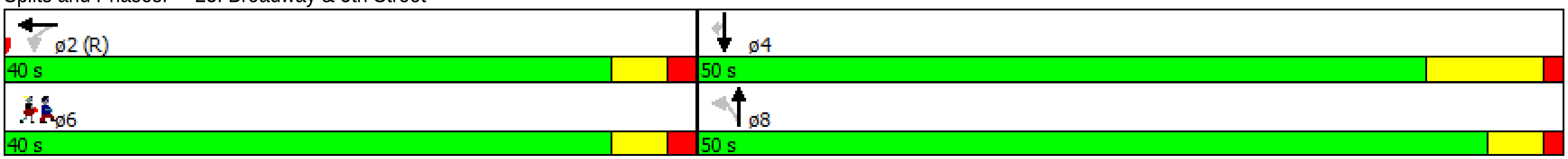


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	246	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.900					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2867	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	267	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.34			0.35	0.14	
Control Delay					11.1			16.8			28.5	20.2	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			16.8			28.5	20.2	
LOS					B			B			C	C	
Approach Delay					11.1			16.8			26.9		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 23: Broadway & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	803	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.32		
Control Delay		6.7						6.5	3.8	7.4	4.9		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.7						6.5	3.8	7.4	4.9		
LOS		A						A	A	A	A		
Approach Delay		6.7						6.2			5.2		
Approach LOS		A						A			A		

Intersection Summary

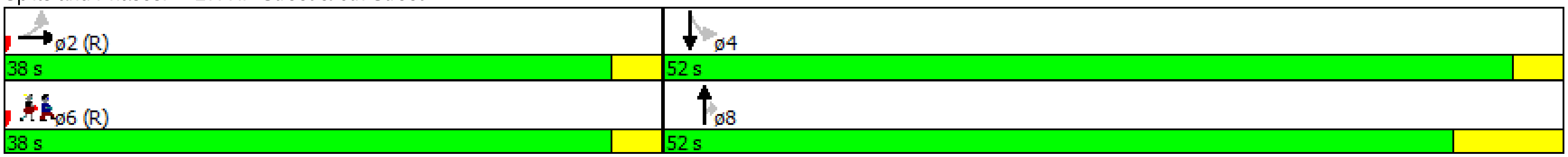
Area Type: CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55

Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 61.8%	ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

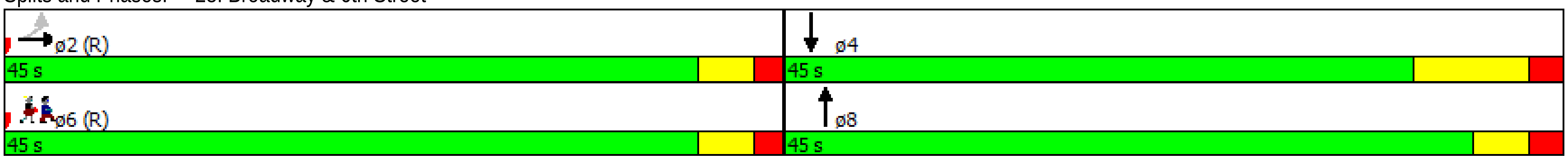


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	285	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	310	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.48		
Control Delay		6.2						23.8			23.0		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.2						23.8			23.0		
LOS		A						C			C		
Approach Delay		6.2						23.8			23.0		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 48.3%	ICU Level of Service A
Analysis Period (min) 15	

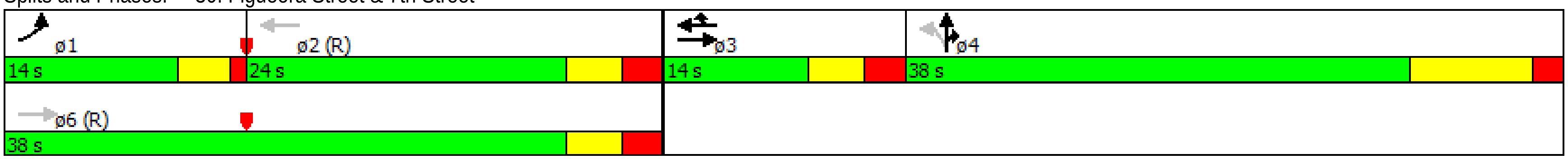
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary		
Area Type:	CBD	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.05		
Intersection Signal Delay: 32.4		Intersection LOS: C
Intersection Capacity Utilization 60.9%		ICU Level of Service B
Analysis Period (min) 15		

Splits and Phases: 30: Figueora Street & 7th Street

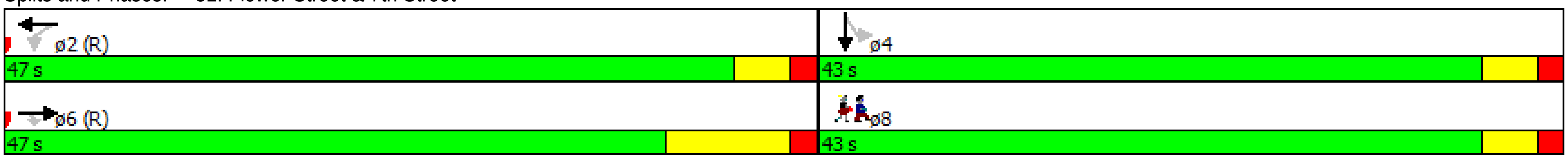


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Flower Street & 7th Street

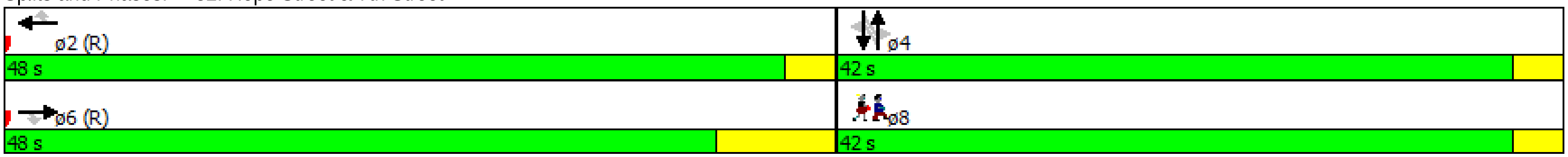


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.5		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.5		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.3			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 32: Hope Street & 7th Street

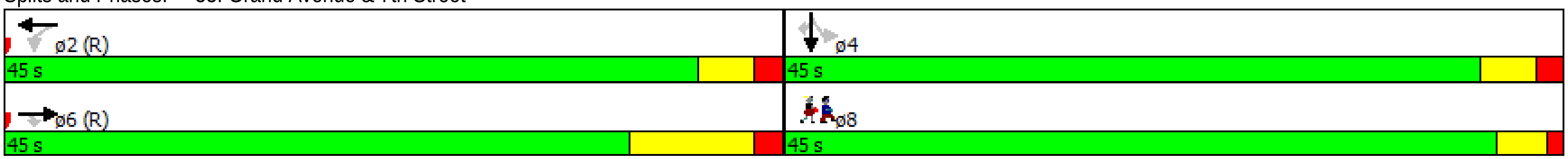


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	6.5	10.1					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	6.5	10.4					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			10.1						49.7		
Approach LOS		C			B						D		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: Grand Avenue & 7th Street

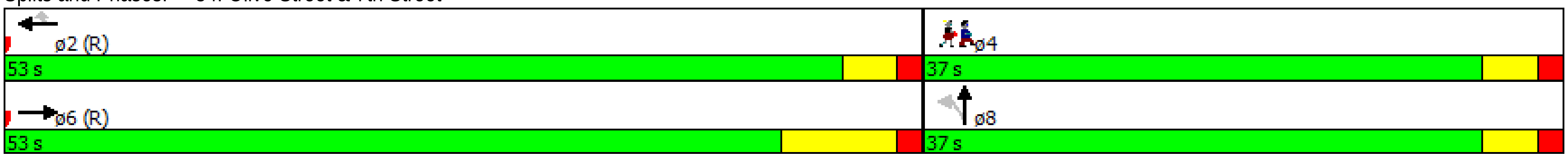


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.3			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 34: Olive Street & 7th Street

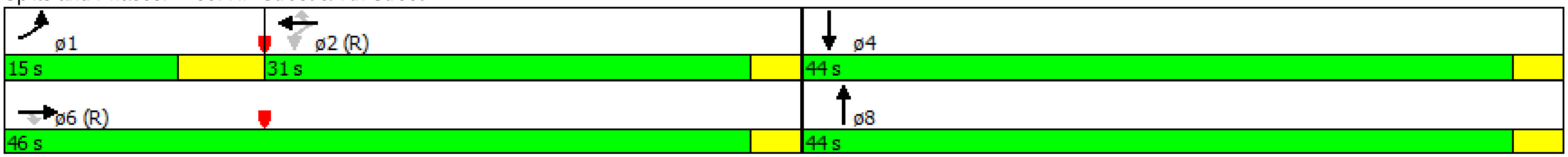


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	61.1	18.3		25.7			33.4	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	61.2	18.3		25.8			34.0	
LOS	C	C	A	C	E	B		C			C	
Approach Delay		21.9			52.0			25.8			34.0	
Approach LOS		C			D			C			C	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 33.2 Intersection LOS: C
Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15

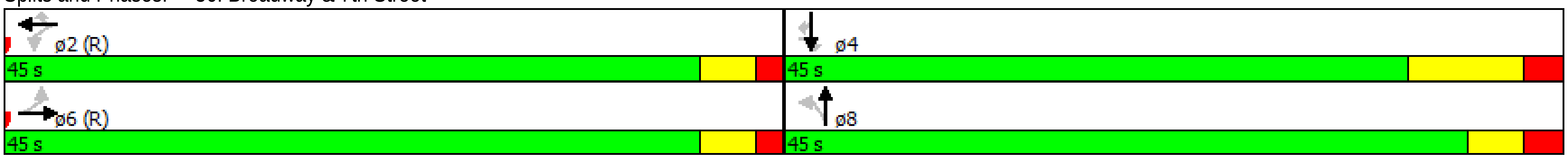
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	364	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.949				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2883	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	396	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.61	0.38
Control Delay	16.8	26.7	8.3	15.3	27.4	11.2		18.4			15.7	10.6
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.7	11.2		18.8			15.7	11.1
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.2			18.8			14.6	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

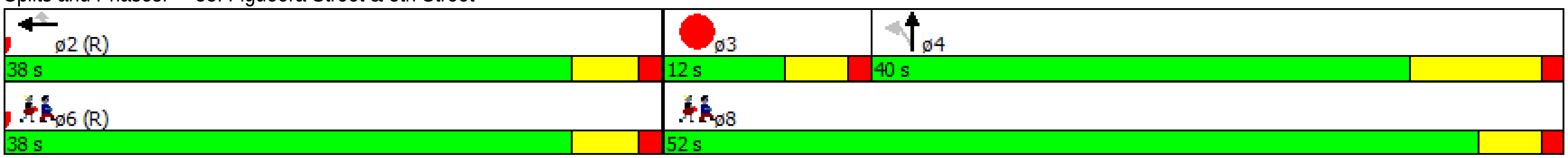


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street

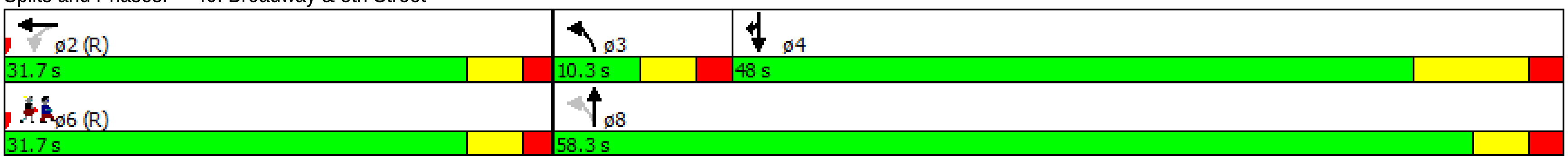


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	335	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.825					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2628	0	0	1616	1374	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					14							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	364	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Prot	
Protected Phases					2		3	8			4	4	6
Permitted Phases				2			8						
Total Split (s)				31.7	31.7		10.3	58.3			48.0	48.0	31.7
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					26.7			53.0			39.2	39.2	
Actuated g/C Ratio					0.30			0.59			0.44	0.44	
v/c Ratio					0.75			0.48			0.52	0.11	
Control Delay					41.0			19.3			24.2	9.0	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					41.0			19.3			24.2	9.0	
LOS					D			B			C	A	
Approach Delay					41.0			19.3			21.6		
Approach LOS					D			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 30.7 — Intersection LOS: C
Intersection Capacity Utilization 75.9% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 40: Broadway & 8th Street

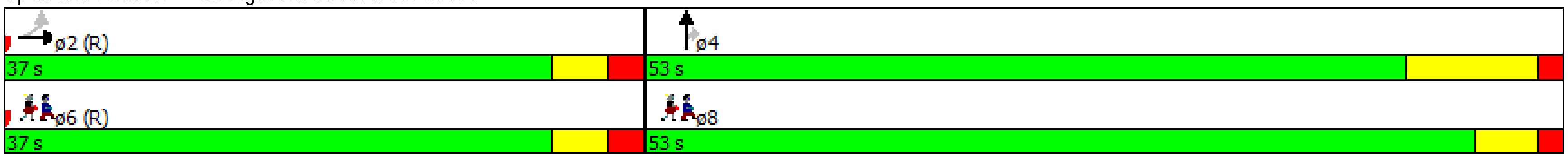


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

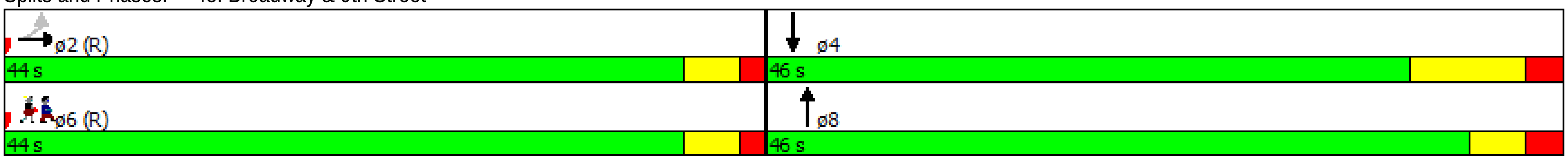


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	436	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	474	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.71		
Control Delay	11.3	14.6						14.6			20.3		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.3	15.2						14.6			20.3		
LOS	B	B						B			C		
Approach Delay		14.7						14.6			20.3		
Approach LOS		B						B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 62.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

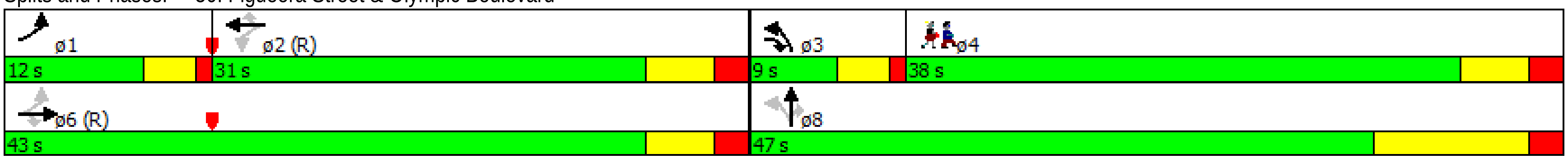
Maximum v/c Ratio: 1.17

Intersection Signal Delay: 47.6 Intersection LOS: D

Intersection Capacity Utilization 84.6% ICU Level of Service E

Analysis Period (min) 15

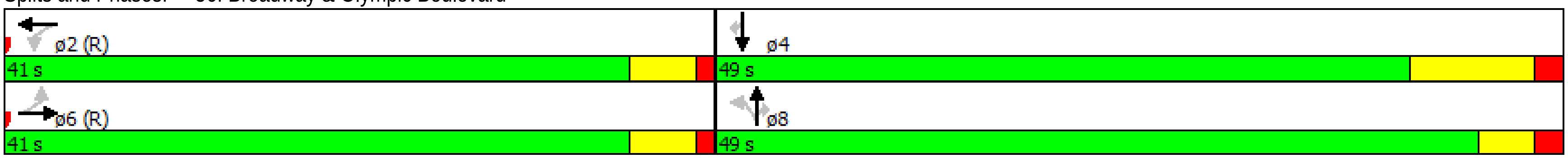
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	398	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3071	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.348			0.261				0.902				
Satd. Flow (perm)	553	3071	0	418	3067	0	0	2864	1253	0	1616	1197
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20				47			85
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	433	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0	49.0		49.0	49.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	36.0	36.0		36.0	36.0			44.0	44.0		40.0	40.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.49	0.49		0.44	0.44
v/c Ratio	0.33	0.61		0.50	0.48			0.46	0.12		0.60	0.22
Control Delay	24.9	26.0		37.2	27.1			9.2	2.7		22.4	9.0
Queue Delay	0.0	0.7		0.0	3.6			0.0	0.0		0.0	0.0
Total Delay	24.9	26.7		37.2	30.7			9.2	2.7		22.4	9.0
LOS	C	C		D	C			A	A		C	A
Approach Delay		26.6			31.5			8.5			19.3	
Approach LOS		C			C			A			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

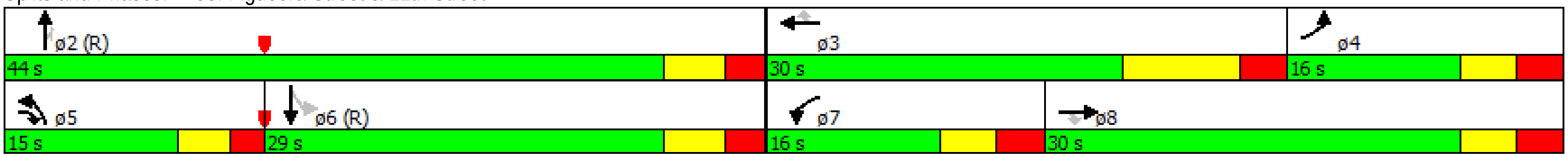
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96

Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

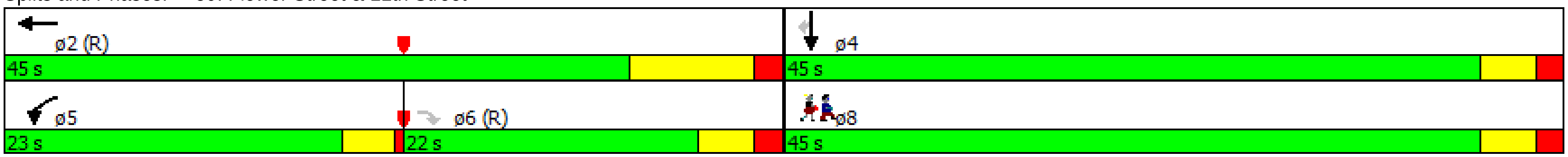


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street

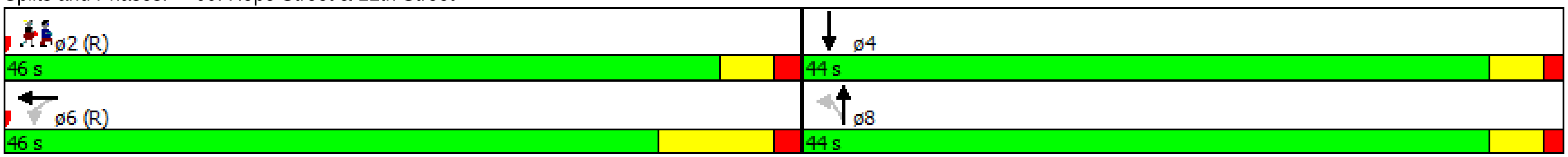


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 27.2 Intersection LOS: C
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

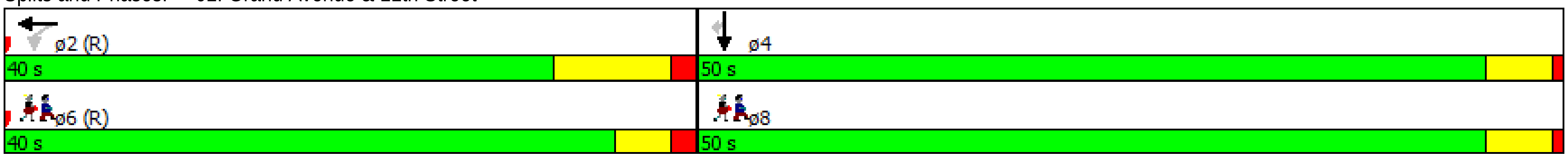


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.9	19.0						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.9	19.0						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.7						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 61: Grand Avenue & 11th Street

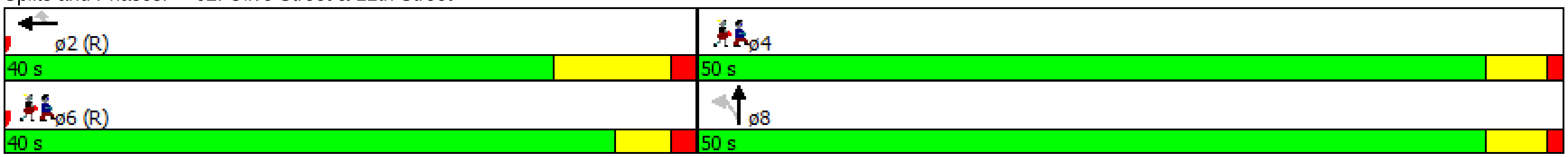


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					21.6	12.9		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					21.6	12.9		14.7						
LOS					C	B		B						
Approach Delay					20.0			14.7						
Approach LOS					B			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.191						
Satd. Flow (perm)	0	0	0	1593	3134	0	320	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					19							54	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.51		0.16	0.42			0.66	0.12	
Control Delay				20.8	24.2		19.8	19.5			35.3	19.4	
Queue Delay				0.0	1.5		0.0	0.0			0.0	0.0	
Total Delay				20.8	25.7		19.8	19.5			35.3	19.4	
LOS				C	C		B	B			D	B	
Approach Delay					25.2			19.5			34.1		
Approach LOS					C			B			C		

Intersection Summary	
Area Type:	CBD

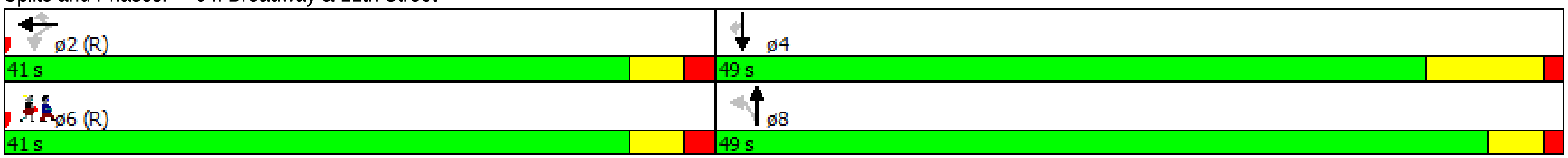
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 27.4   Intersection LOS: C
Intersection Capacity Utilization 55.5%   ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 63: Hill Street & 11th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.205						
Satd. Flow (perm)	0	0	0	0	3093	998	344	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61						42	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	683	95	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.12	0.41	0.45			0.93	0.18	
Control Delay					13.9	1.8	23.8	16.0			35.2	6.7	
Queue Delay					0.4	0.0	0.3	0.0			0.0	0.0	
Total Delay					14.3	1.8	24.1	16.0			35.2	6.7	
LOS					B	A	C	B			D	A	
Approach Delay					13.3			16.7			31.7		
Approach LOS					B			B			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

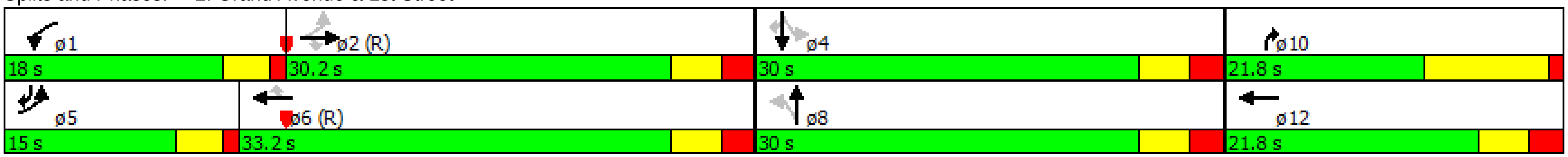


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.5	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.5	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.3 Intersection LOS: C
Intersection Capacity Utilization 73.0% ICU Level of Service C
Analysis Period (min) 15

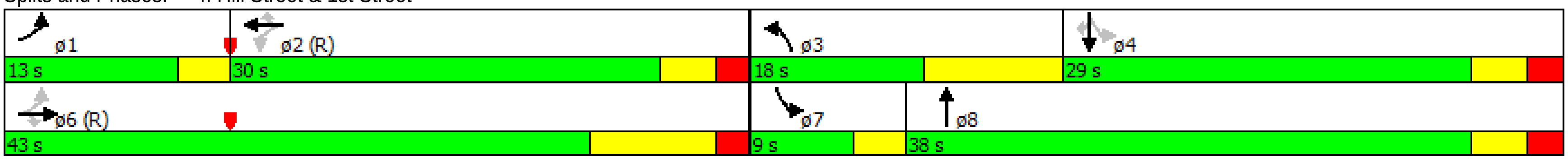
Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	75	607	61	110	557	43	84	884	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1463	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	82	660	66	120	652	0	91	961	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.80	0.75	0.14	0.71	0.54		0.30	1.13	0.35
Control Delay	57.1	36.9	0.1	78.1	37.3	3.7	46.3	37.7		16.3	105.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.1		0.5	0.0	0.2
Total Delay	57.1	55.8	0.1	78.1	37.3	3.7	67.8	37.8		16.8	105.0	2.8
LOS	E	E	A	E	D	A	E	D		B	F	A
Approach Delay		54.7			38.7			42.4			85.2	
Approach LOS		D			D			D			F	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 58.2 Intersection LOS: E
Intersection Capacity Utilization 95.3% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1071	30	0	672	75	100	539	121	77	50	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	0	3185	1425	1593	4282	0	1593	2543	0
Flt Permitted	0.241						0.597			0.286		
Satd. Flow (perm)	382	3185	834	0	3185	1050	916	4282	0	450	2543	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			82		29			179	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1164	33	0	730	82	109	718	0	84	233	0
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6			2	8			4		
Total Split (s)	20.0	57.0	57.0		37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2		3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8		38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55		0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.66	0.07		0.54	0.17	0.37	0.51		0.58	0.25	
Control Delay	18.7	22.9	6.1		14.3	4.3	27.9	24.3		44.3	7.0	
Queue Delay	0.0	12.1	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	35.0	6.1		14.3	4.3	27.9	24.3		44.3	7.0	
LOS	B	D	A		B	A	C	C		D	A	
Approach Delay		31.6			13.3			24.8			16.9	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

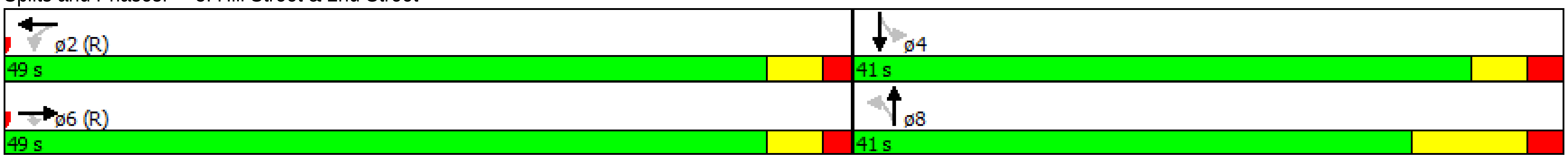
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	255	12	79	649	43	31	908	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3150	0	1593	3130	0	1593	3136	0
Flt Permitted							0.125			0.290		
Satd. Flow (perm)	0	3185	1340	0	3150	0	208	3130	0	469	3136	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		7			8			11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	290	0	86	752	0	34	1066	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.19		1.16	0.67		0.18	0.85	
Control Delay		14.2	9.1		7.8		177.7	18.3		7.5	16.9	
Queue Delay		0.1	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.3	9.1		7.8		177.7	18.3		7.5	16.9	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			7.8			34.6			16.6	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 78.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Hill Street & 2nd Street

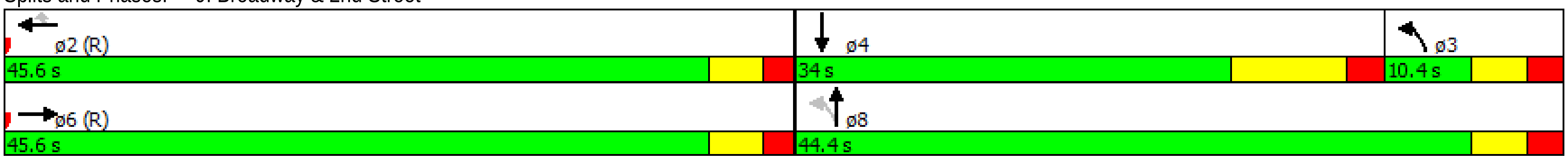


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	632	0	0	458	209	105	273	163	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	0	0	1676	1425	1593	2785	0	0	1616	0
Flt Permitted							0.701					
Satd. Flow (perm)	0	1676	0	0	1676	1346	1175	2785	0	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						153		70				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	687	0	0	498	227	114	474	0	0	87	0
Turn Type		NA			NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases						2	8					
Total Split (s)		45.6			45.6	45.6	10.4	44.4			34.0	
Total Lost Time (s)		5.0			5.0	5.0	5.4	5.4			8.9	
Act Effct Green (s)		53.8			53.8	53.8	25.8	25.8			13.6	
Actuated g/C Ratio		0.60			0.60	0.60	0.29	0.29			0.15	
v/c Ratio		0.69			0.50	0.26	0.31	0.56			0.36	
Control Delay		13.8			6.9	1.0	30.1	30.1			40.3	
Queue Delay		0.0			0.5	0.0	0.0	0.0			0.0	
Total Delay		13.8			7.4	1.0	30.1	30.1			40.3	
LOS		B			A	A	C	C			D	
Approach Delay		13.8			5.4			30.1			40.3	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 62.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	192	1368	165	56	431	0	0	1132	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	209	1666	0	61	468	0	0	1230	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.26	0.95		0.82	0.45			1.05	0.49	
Control Delay				13.8	26.5		101.1	39.7			76.3	34.2	
Queue Delay				0.0	0.3		0.0	0.0			0.0	0.0	
Total Delay				13.8	26.8		101.1	39.7			76.3	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					25.4			46.8			70.1		
Approach LOS					C			D			E		

Intersection Summary

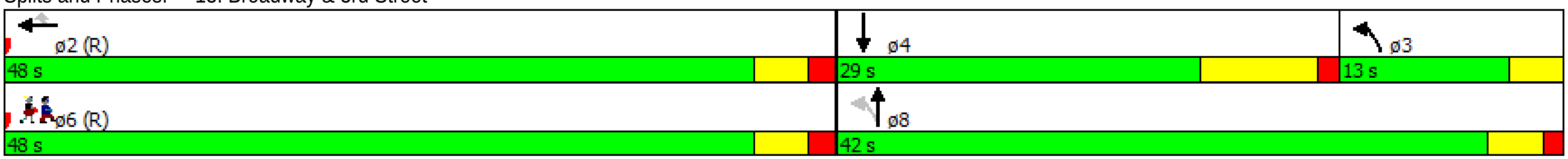
Area Type: CBD		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green		
Control Type: Pretimed		
Maximum v/c Ratio: 1.05		
Intersection Signal Delay: 45.1	Intersection LOS: D	
Intersection Capacity Utilization 103.6%	ICU Level of Service G	
Analysis Period (min) 15		

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	1297	191	192	418	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	0		1	0		0	0		0	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	0	3185	1425	0	3134	0	0	1616	0	
Flt Permitted								0.821					
Satd. Flow (perm)	0	0	0	0	3185	1153	0	2391	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						136							
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1410	208	0	663	0	0	87	0	
Turn Type					NA	Perm	pm+pt	NA			NA		
Protected Phases					2		3	8			4		6
Permitted Phases						2	8						
Total Split (s)					48.0	48.0	13.0	42.0			29.0		48.0
Total Lost Time (s)					4.8	4.8		4.5			8.0		
Act Effct Green (s)					43.2	43.2		37.5			34.0		
Actuated g/C Ratio					0.48	0.48		0.42			0.38		
v/c Ratio					0.92	0.33		0.67			0.14		
Control Delay					33.0	8.7		10.7			8.0		
Queue Delay					45.6	0.0		0.3			0.0		
Total Delay					78.7	8.7		11.0			8.0		
LOS					E	A		B			A		
Approach Delay					69.7			11.0			8.0		
Approach LOS					E			B			A		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 51.0	Intersection LOS: D
Intersection Capacity Utilization 69.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

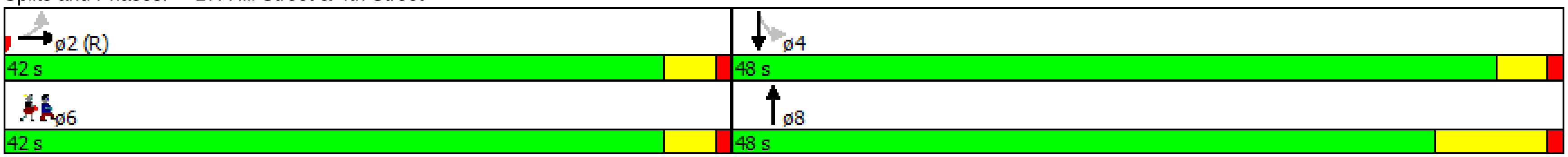


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	125	1033	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	136	1123	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.65	0.72		
Control Delay		17.3						12.5		13.0	5.0		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.5		13.0	5.0		
LOS		B						B		B	A		
Approach Delay		17.3						12.5			5.9		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

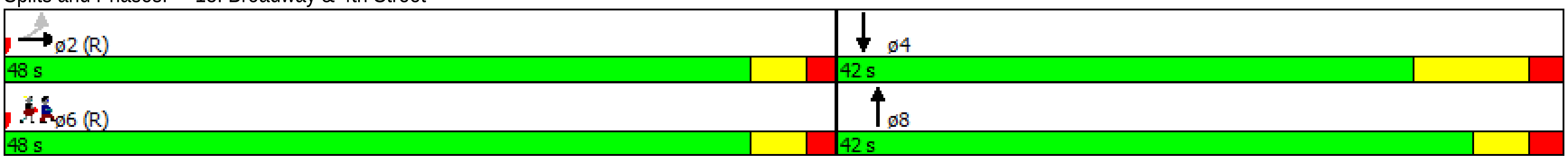


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	209	1303	0	0	0	0	0	474	157	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5727	0	0	0	0	0	2778	0	0	1616	0	
Flt Permitted		0.993											
Satd. Flow (perm)	0	5468	0	0	0	0	0	2778	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								4					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1643	0	0	0	0	0	686	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.63						0.60			0.15		
Control Delay		7.5						25.9			36.5		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.5						25.9			36.5		
LOS		A						C			D		
Approach Delay		7.5						25.9			36.5		
Approach LOS		A						C			D		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	204	720	136	71	657	0	0	927	209	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5304	0	1593	3185	0	0	4198	0	
Flt Permitted				0.950			0.175						
Satd. Flow (perm)	0	0	0	993	5304	0	282	3185	0	0	4198	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					57						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	222	931	0	77	714	0	0	1235	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.67	0.52		0.53	0.43			0.53		
Control Delay				24.2	11.3		35.3	15.0			23.8		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				24.2	11.3		35.3	15.0			23.8		
LOS				C	B		D	B			C		
Approach Delay					13.8			17.0			23.8		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

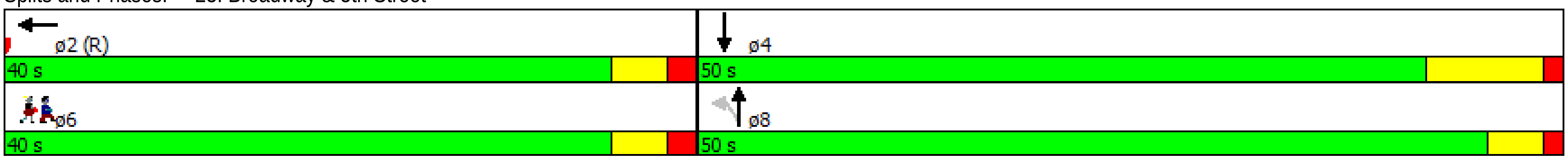
Splits and Phases: 22: Hill Street & 5th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	862	190	164	412	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5279	0	0	3141	0	0	1616	0	
Flt Permitted								0.829					
Satd. Flow (perm)	0	0	0	0	5279	0	0	2641	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					72								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1144	0	0	626	0	0	87	0	
Turn Type					NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases							8						
Total Split (s)					40.0		50.0	50.0			50.0		40.0
Total Lost Time (s)					5.0			4.5			8.0		
Act Effct Green (s)					35.0			45.5			42.0		
Actuated g/C Ratio					0.39			0.51			0.47		
v/c Ratio					0.55			0.47			0.12		
Control Delay					12.0			23.6			34.8		
Queue Delay					0.0			0.0			0.0		
Total Delay					12.0			23.6			34.8		
LOS					B			C			C		
Approach Delay					12.0			23.6			34.8		
Approach LOS					B			C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 52 (58%), Referenced to phase 2:WBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 48.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 23: Broadway & 5th Street

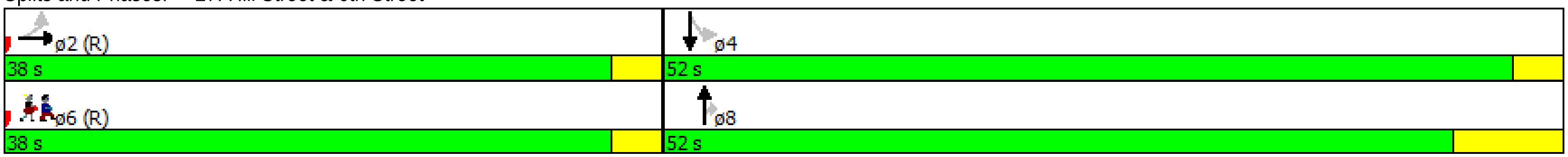


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	945	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	1027	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.41		
Control Delay		6.8						6.6	3.8	10.1	8.1		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.8						6.6	3.8	10.1	8.1		
LOS		A						A	A	B	A		
Approach Delay		6.8						6.2			8.3		
Approach LOS		A						A			A		

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 7.1 Intersection LOS: A
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

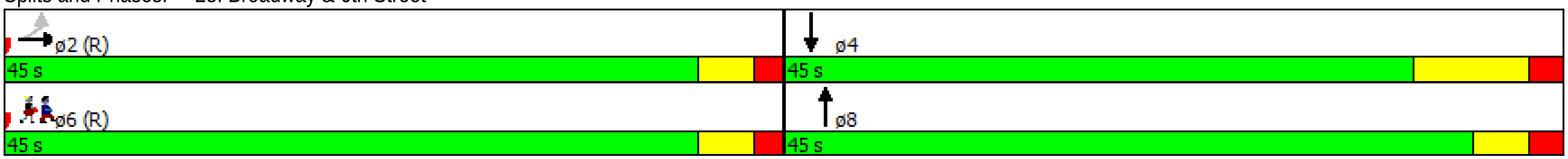


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1041	0	0	0	0	0	583	93	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5732	0	0	0	0	0	2956	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5516	0	0	0	0	0	2956	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	735	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.52						0.56			0.13		
Control Delay		6.4						22.4			20.6		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.4						22.4			20.6		
LOS		A						C			C		
Approach Delay		6.4						22.4			20.6		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 50.1% ICU Level of Service A
Analysis Period (min) 15

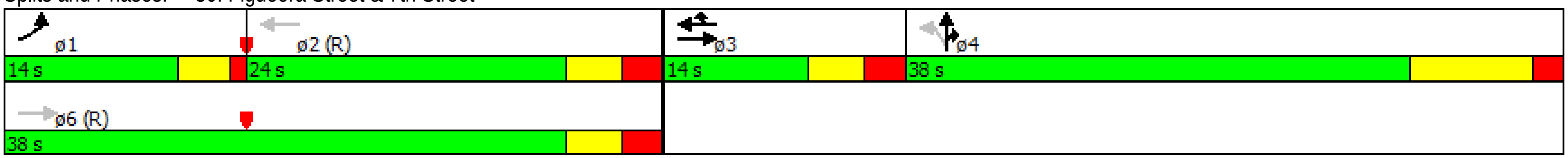
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

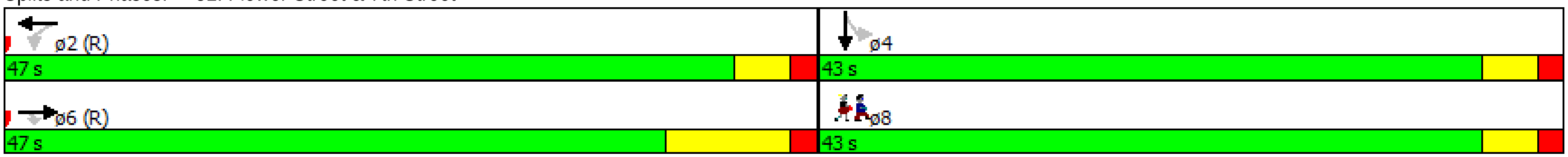


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.5						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.5						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.5						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

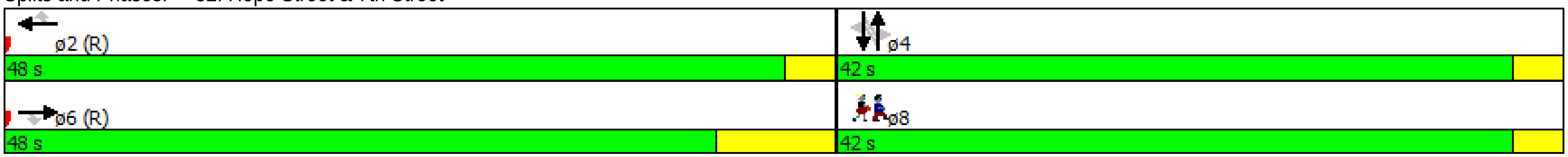
Splits and Phases: 31: Flower Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.7		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.7		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.4			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: Hope Street & 7th Street

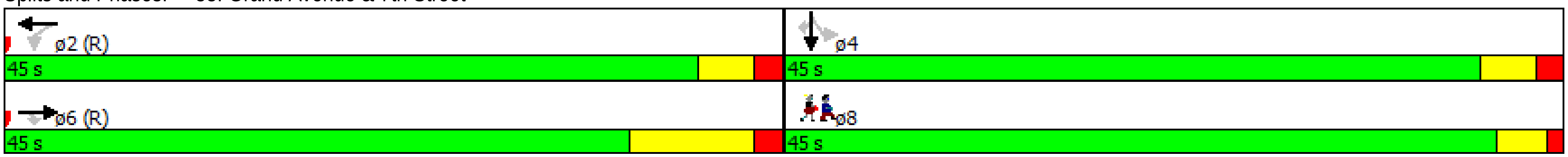


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	8.2	12.2					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	8.2	12.5					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			12.2						49.7		
Approach LOS		C			B						D		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grand Avenue & 7th Street

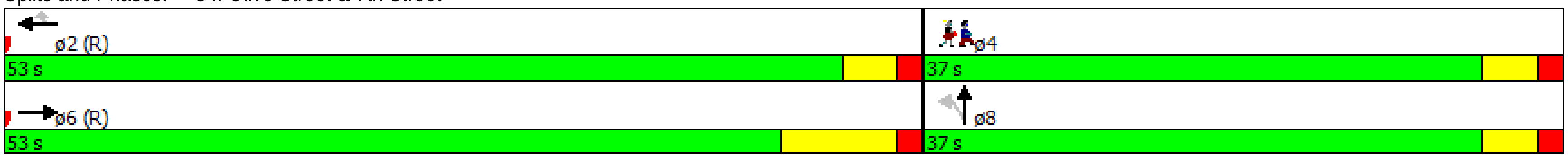


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			17.1	13.9	21.0	21.8					
Queue Delay		0.2			2.9	0.0	0.0	0.0					
Total Delay		11.1			20.0	13.9	21.0	21.8					
LOS		B			B	B	C	C					
Approach Delay		11.1			18.4			21.8					
Approach LOS		B			B			C					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 34: Olive Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	88	303	105	0	651	49	0	1024	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3077	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3077	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41			114		11			56	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	96	329	114	0	761	0	0	1440	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.37	0.63	0.22		0.53			1.01	
Control Delay	30.7	20.1	5.3	41.6	46.3	19.8		25.8			56.2	
Queue Delay	0.0	2.9	0.0	0.0	0.0	0.0		0.1			5.4	
Total Delay	30.7	23.0	5.3	41.6	46.3	19.8		25.9			61.6	
LOS	C	C	A	D	D	B		C			E	
Approach Delay		22.0			39.8			25.9			61.6	
Approach LOS		C			D			C			E	

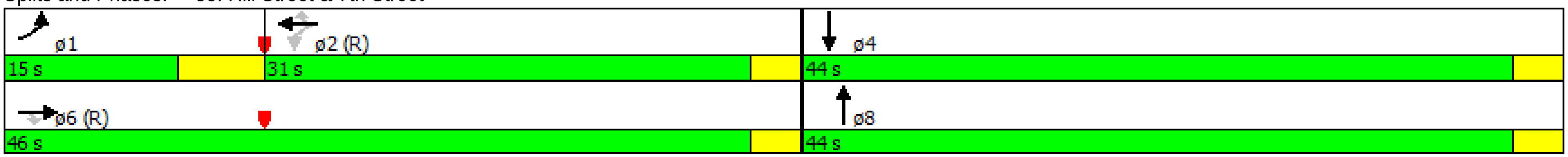
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 1.01

Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E

Analysis Period (min) 15

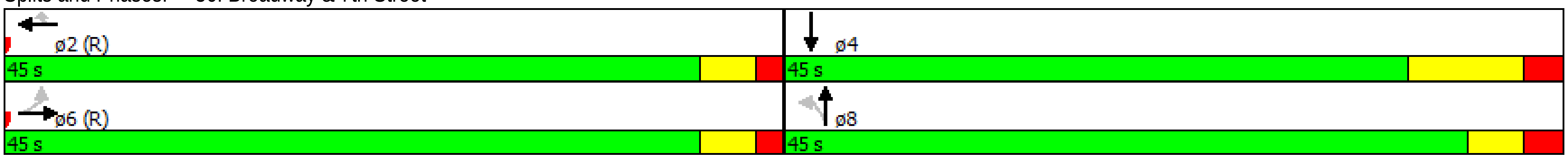
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	427	0	0	411	341	77	607	55	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	0	0	1676	1425	0	3036	0	0	1616	0
Flt Permitted	0.359							0.906				
Satd. Flow (perm)	602	1676	0	0	1676	827	0	2764	0	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						74		7				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	464	0	0	447	371	0	804	0	0	87	0
Turn Type	Perm	NA			NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6					2	8					
Total Split (s)	45.0	45.0			45.0	45.0	45.0	45.0			45.0	
Total Lost Time (s)	4.9	4.9			4.9	4.9		5.6			9.1	
Act Effct Green (s)	40.1	40.1			40.1	40.1		39.4			35.9	
Actuated g/C Ratio	0.45	0.45			0.45	0.45		0.44			0.40	
v/c Ratio	0.10	0.62			0.60	0.91		0.66			0.14	
Control Delay	16.8	28.2			21.6	44.2		15.3			0.4	
Queue Delay	0.0	4.0			1.4	0.0		0.0			0.0	
Total Delay	16.8	32.2			23.0	44.2		15.3			0.4	
LOS	B	C			C	D		B			A	
Approach Delay		31.4			32.7			15.3			0.4	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

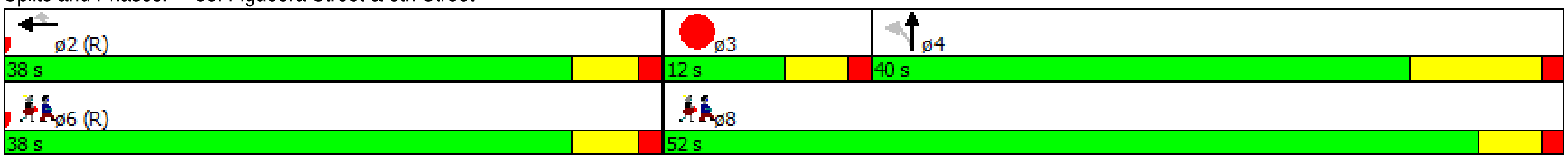


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street

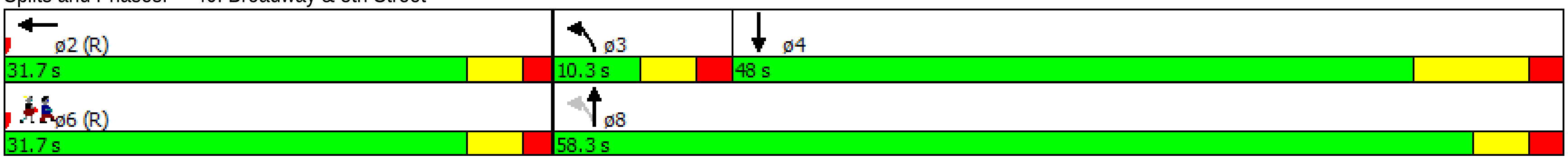


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	994	111	199	710	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5528	0	0	3150	0	0	1616	0	
Flt Permitted								0.804					
Satd. Flow (perm)	0	0	0	0	5528	0	0	2561	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					30								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1201	0	0	988	0	0	87	0	
Turn Type					NA		pm+pt	NA			NA		
Protected Phases					2		3	8			4		6
Permitted Phases							8						
Total Split (s)					31.7		10.3	58.3			48.0		31.7
Total Lost Time (s)					5.0			5.3			8.8		
Act Effct Green (s)					26.7			53.0			39.2		
Actuated g/C Ratio					0.30			0.59			0.44		
v/c Ratio					0.72			0.64			0.12		
Control Delay					38.4			19.5			7.7		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.4			19.5			7.7		
LOS					D			B			A		
Approach Delay					38.4			19.5			7.7		
Approach LOS					D			B			A		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:WBT and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 40: Broadway & 8th Street

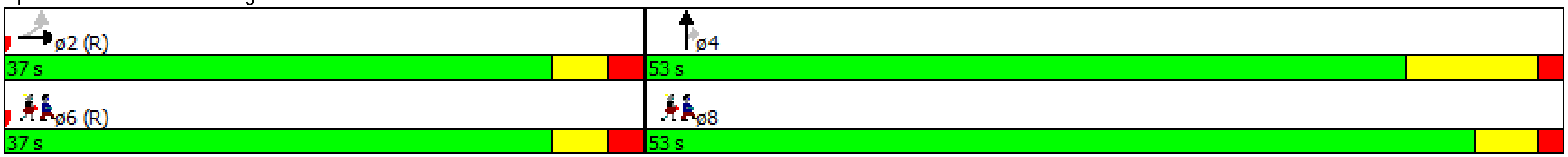


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	343	1155	0	0	0	0	0	792	80	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4577	0	0	0	0	0	3068	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4577	0	0	0	0	0	3068	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								4					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	373	1255	0	0	0	0	0	948	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.77	0.63						0.69			0.13		
Control Delay	24.7	15.8						19.2			16.9		
Queue Delay	0.0	0.7						0.0			0.0		
Total Delay	24.7	16.5						19.2			16.9		
LOS	C	B						B			B		
Approach Delay		18.3						19.2			16.9		
Approach LOS		B						B			B		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Pretimed

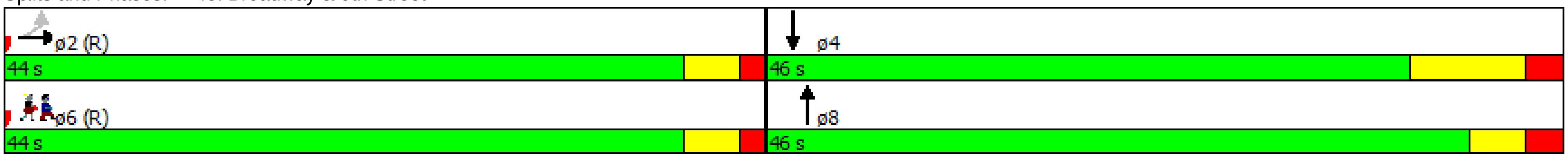
Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.6 Intersection LOS: B

Intersection Capacity Utilization 61.2% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street

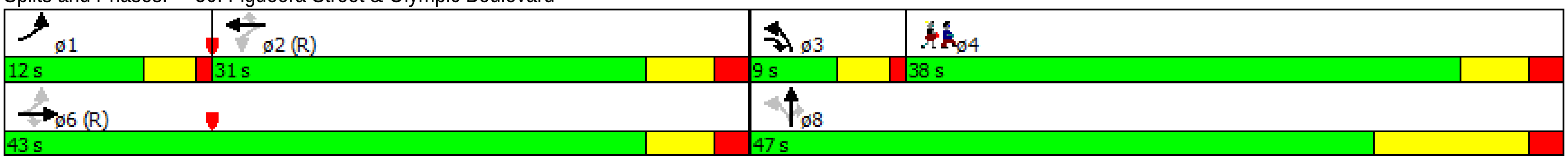


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15

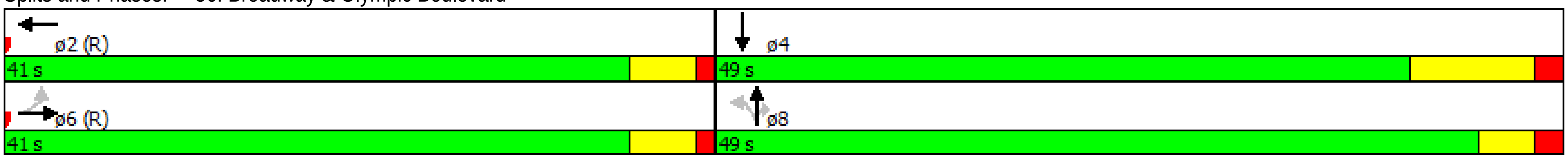
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	693	0	0	485	234	95	551	70	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	0	0	2870	0	0	3163	1425	0	1616	0
Flt Permitted	0.247							0.887				
Satd. Flow (perm)	400	3185	0	0	2870	0	0	2783	1253	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					108				35			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	753	0	0	781	0	0	702	76	0	87	0
Turn Type	Perm	NA			NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6						8		8			
Total Split (s)	41.0	41.0			41.0		49.0	49.0	49.0		49.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0		9.0	
Act Effct Green (s)	36.0	36.0			36.0			44.0	44.0		40.0	
Actuated g/C Ratio	0.40	0.40			0.40			0.49	0.49		0.44	
v/c Ratio	1.20	0.59			0.64			0.52	0.12		0.12	
Control Delay	162.8	28.1			25.0			11.0	4.4		13.3	
Queue Delay	0.0	49.0			5.4			0.0	0.0		0.0	
Total Delay	162.8	77.1			30.4			11.0	4.4		13.3	
LOS	F	E			C			B	A		B	
Approach Delay		94.5			30.4			10.4			13.3	
Approach LOS		F			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 71.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

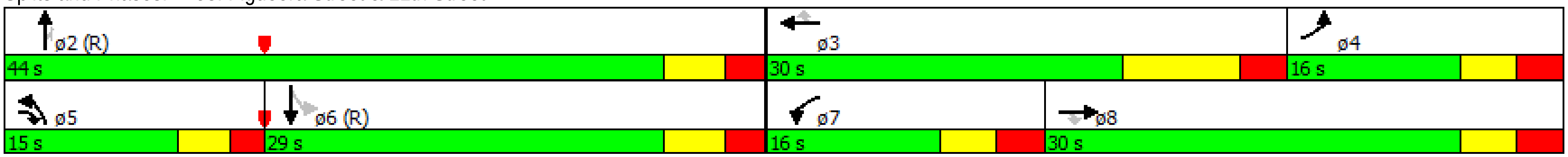


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

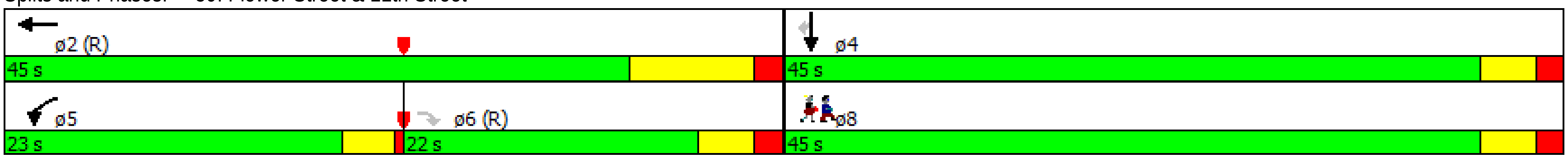


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street

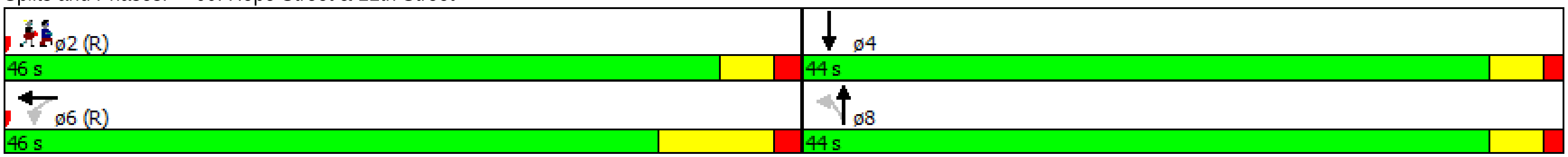


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 27.2   Intersection LOS: C
Intersection Capacity Utilization 58.3%   ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

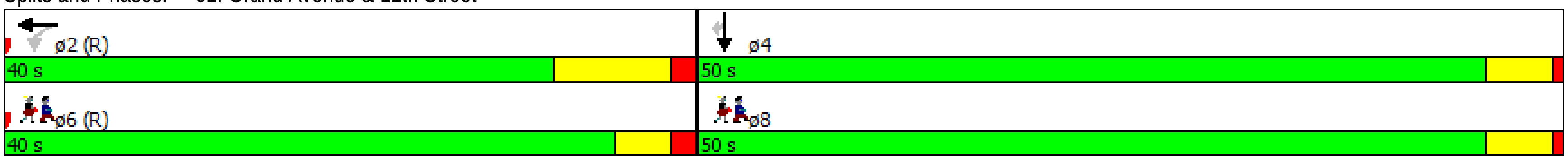


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.5	18.7						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.5	18.7						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.4						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 61: Grand Avenue & 11th Street

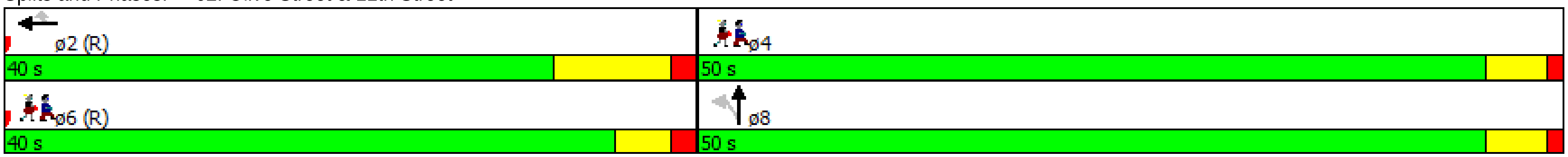


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					20.8	11.7		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					20.8	11.7		14.7						
LOS					C	B		B						
Approach Delay					19.1			14.7						
Approach LOS					B			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	562	73	19	520	0	0	1006	124	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3131	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.114						
Satd. Flow (perm)	0	0	0	1593	3131	0	191	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					21							81	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	690	0	21	565	0	0	1093	135	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.46		0.26	0.42			0.81	0.21	
Control Delay				22.9	25.4		27.4	19.5			37.8	19.8	
Queue Delay				0.0	1.2		0.0	0.0			0.0	0.0	
Total Delay				22.9	26.5		27.4	19.5			37.8	19.8	
LOS				C	C		C	B			D	B	
Approach Delay					26.1			19.8			35.8		
Approach LOS					C			B			D		

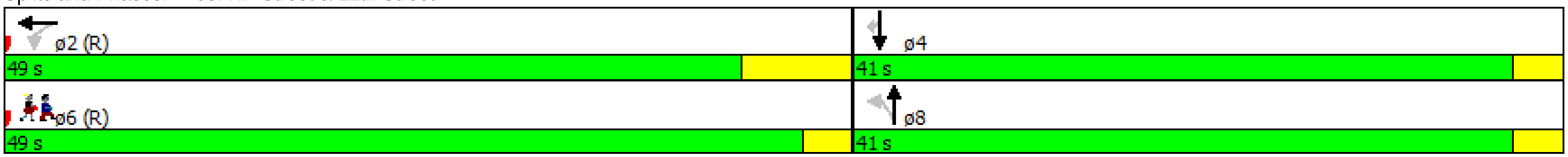
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 59.5%	ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 63: Hill Street & 11th Street

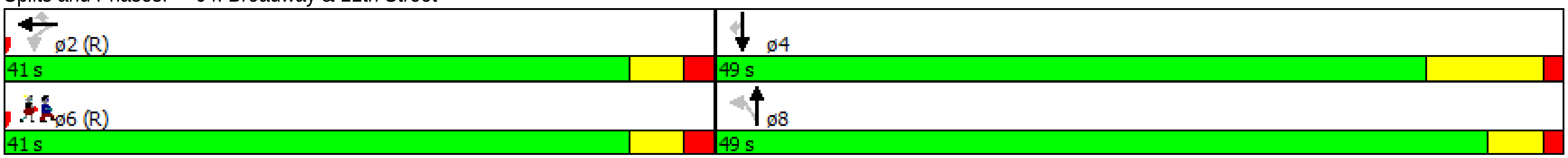


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	259	64	815	0	0	50	30	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.722						
Satd. Flow (perm)	0	0	0	0	3093	998	1028	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						101						33	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	282	70	886	0	0	54	33	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.61	0.14	0.56			0.07	0.06	
Control Delay					18.8	15.8	13.3	17.7			0.2	0.2	
Queue Delay					0.6	0.5	0.0	0.0			0.0	0.0	
Total Delay					19.4	16.3	13.3	17.7			0.2	0.2	
LOS					B	B	B	B			A	A	
Approach Delay					18.4			17.4			0.2		
Approach LOS					B			B			A		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 64: Broadway & 11th Street



ATTACHMENT 2 – STREETCAR RUN TIME WORKSHEETS

LA Streetcar

Streetcar Run Times

Original Assumptions - 20 sec. delay per intersection

Station	Speed (mph)	Distance (miles) Feet	Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:20		
TS (R=80.00')				0.29			00:00:00	00:02:12
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:19
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:00
	30	660	0.13		00:00:27	00:00:20		
3rd and Broadway				0.54			00:00:20	00:04:07
	30	660	0.13		00:00:27	00:00:30		
4th and Broadway				0.66			00:00:20	00:05:24
	30	664	0.13		00:00:27	00:00:30		
5th and Broadway				0.79			00:00:20	00:06:41
	30	660	0.13		00:00:27	00:00:30		
6th and Broadway				0.91			00:00:20	00:07:58
	30	670	0.13		00:00:27	00:00:30		
7th and Broadway				1.04			00:00:20	00:09:15
	30	655	0.12		00:00:27	00:00:30		
8th and Broadway				1.16			00:00:20	00:10:32
	30	670	0.13		00:00:27	00:00:30		
9th and Broadway				1.29			00:00:20	00:11:49
	30	660	0.13		00:00:27	00:00:30		
Olympic and Broadway				1.41			00:00:20	00:13:06
	25	680	0.13		00:00:25	00:00:20		
11th and Broadway				1.54			00:00:20	00:14:11
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:14:18
	30	590	0.11		00:00:22	00:00:20		
Olive and 11th				1.67			00:00:20	00:15:20
	30	820	0.16		00:00:31	00:00:40		
Hope and 11th				1.83			00:00:20	00:16:51
	30	790	0.15		00:00:30	00:01:00		
TS (R=80.00')				1.98			00:00:00	00:18:21
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:18:48
	30	610	0.12		00:00:26	00:00:20		
Olympic and Figueroa				2.11			00:00:20	00:19:54
	30	550	0.10		00:00:25	00:00:20		
9th and Figueroa				2.22			00:00:20	00:20:59
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:21:45
	30	650	0.12		00:00:23	00:00:40		
TS (R=80.00')				2.46			00:00:00	00:22:48
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:23:17
	30	825	0.16		00:00:31	00:00:40		
Hope and 7th				2.63			00:00:20	00:24:48
	30	680	0.13		00:00:27	00:00:20		
Olive and 7th				2.76			00:00:20	00:25:55
	25	420	0.08		00:00:18	00:00:40		
TS (R=80.00')				2.84			00:00:00	00:26:53
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:27:22
	30	1190	0.23		00:00:39	00:00:40		
5th and Hill				3.09			00:00:20	00:29:01
	35	1115	0.21		00:00:36	00:01:00		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:30:57
	35	890	0.17		00:00:32	00:00:20		
2nd and Hill				3.47			00:00:20	00:32:09
	30	555	0.11		00:00:25	00:00:40		
TS (R=80.00')				3.57			00:00:00	00:33:14
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:33:21
	30	650	0.12		00:00:20	00:00:40		
TS (R=80.00')				3.71			00:00:00	00:34:21
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:34:28
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:34:41
				3.79	**00:13:11**	**00:13:50**	**00:07:40**	**00:34:41**
						Avg. Speed =	6.6 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:

1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Average intersection delay = 20 seconds.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Base Case - Using Base Synchro Signal Delay Output

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:01:29		
3rd and Broadway				0.54			00:00:20	00:05:41
	30	660	0.13		00:00:27	00:00:36		
4th and Broadway				0.66			00:00:20	00:07:04
	30	664	0.13		00:00:27	00:00:39		
5th and Broadway				0.79			00:00:20	00:08:30
	30	660	0.13		00:00:27	00:00:39		
6th and Broadway				0.91			00:00:20	00:09:56
	30	670	0.13		00:00:27	00:00:35		
7th and Broadway				1.04			00:00:20	00:11:18
	30	655	0.12		00:00:27	00:00:28		
8th and Broadway				1.16			00:00:20	00:12:33
	30	670	0.13		00:00:27	00:01:54		
9th and Broadway				1.29			00:00:20	00:15:14
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:16:28
	25	680	0.13		00:00:25	00:02:12		
11th and Broadway				1.54			00:00:20	00:19:25
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:19:32
	30	590	0.11		00:00:22	00:00:43		
Olive and 11th				1.67			00:00:20	00:20:57
	30	820	0.16		00:00:31	00:00:44		
Hope and 11th				1.83			00:00:20	00:22:32
	30	790	0.15		00:00:30	00:01:36		
TS (R=80.00')				1.98			00:00:00	00:24:38
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:25:05
	30	610	0.12		00:00:26	00:00:18		
Olympic and Figueroa				2.11			00:00:20	00:26:09
	30	550	0.10		00:00:25	00:00:35		
9th and Figueroa				2.22			00:00:20	00:27:29
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:28:15
	30	650	0.12		00:00:23	00:02:41		
TS (R=80.00')				2.46			00:00:00	00:31:19
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:31:48
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:33:04
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:34:21
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:35:21
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:35:50
	30	1190	0.23		00:00:39	00:00:33		
5th and Hill				3.09			00:00:20	00:37:22
	35	1115	0.21		00:00:36	00:00:58		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:39:16
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:40:49
	30	555	0.11		00:00:25	00:02:12		
TS (R=80.00')				3.57			00:00:00	00:43:26
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:43:33
	30	650	0.12		00:00:20	00:01:37		
TS (R=80.00')				3.71			00:00:00	00:45:30
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:45:37
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:45:50
				3.79	**00:13:11**	**00:24:59**	**00:07:40**	**00:45:50**
						Avg. Speed =	5.0 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 1 - Base Case with Improvements

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:00:55		
3rd and Broadway				0.54			00:00:20	00:05:07
	30	660	0.13		00:00:27	00:00:36		
4th and Broadway				0.66			00:00:20	00:06:30
	30	664	0.13		00:00:27	00:00:39		
5th and Broadway				0.79			00:00:20	00:07:56
	30	660	0.13		00:00:27	00:00:39		
6th and Broadway				0.91			00:00:20	00:09:22
	30	670	0.13		00:00:27	00:00:35		
7th and Broadway				1.04			00:00:20	00:10:44
	30	655	0.12		00:00:27	00:00:28		
8th and Broadway				1.16			00:00:20	00:11:59
	30	670	0.13		00:00:27	00:00:39		
9th and Broadway				1.29			00:00:20	00:13:25
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:14:39
	25	680	0.13		00:00:25	00:00:49		
11th and Broadway				1.54			00:00:20	00:16:13
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:16:20
	30	590	0.11		00:00:22	00:00:25		
Olive and 11th				1.67			00:00:20	00:17:27
	30	820	0.16		00:00:31	00:00:44		
Hope and 11th				1.83			00:00:20	00:19:02
	30	790	0.15		00:00:30	00:01:24		
TS (R=80.00')				1.98			00:00:00	00:20:56
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:21:23
	30	610	0.12		00:00:26	00:00:18		
Olympic and Figueroa				2.11			00:00:20	00:22:27
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:23:40
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:24:26
	30	650	0.12		00:00:23	00:00:38		
TS (R=80.00')				2.46			00:00:00	00:25:27
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:25:56
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:27:12
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:28:29
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:29:29
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:29:58
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:31:23
	35	1115	0.21		00:00:36	00:00:51		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:33:10
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:34:43
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:36:34
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:36:41
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:38:13
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:38:20
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:38:33
				3.79	**00:13:11**	**00:17:42**	**00:07:40**	**00:38:33**
						Avg. Speed =	5.9	mph
						Avg. Station Spacing=	0.16	miles

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 2 - Two SB Broadway Lanes

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:44		
TS (R=80.00')				0.29			00:00:00	00:02:36
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:43
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:24
	30	660	0.13		00:00:27	00:00:59		
3rd and Broadway				0.54			00:00:20	00:05:10
	30	660	0.13		00:00:27	00:00:22		
4th and Broadway				0.66			00:00:20	00:06:19
	30	664	0.13		00:00:27	00:00:38		
5th and Broadway				0.79			00:00:20	00:07:44
	30	660	0.13		00:00:27	00:00:38		
6th and Broadway				0.91			00:00:20	00:09:09
	30	670	0.13		00:00:27	00:00:33		
7th and Broadway				1.04			00:00:20	00:10:29
	30	655	0.12		00:00:27	00:00:26		
8th and Broadway				1.16			00:00:20	00:11:42
	30	670	0.13		00:00:27	00:00:34		
9th and Broadway				1.29			00:00:20	00:13:03
	30	660	0.13		00:00:27	00:00:30		
Olympic and Broadway				1.41			00:00:20	00:14:20
	25	680	0.13		00:00:25	00:00:41		
11th and Broadway				1.54			00:00:20	00:15:46
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:15:53
	30	590	0.11		00:00:22	00:00:25		
Olive and 11th				1.67			00:00:20	00:17:00
	30	820	0.16		00:00:31	00:00:41		
Hope and 11th				1.83			00:00:20	00:18:32
	30	790	0.15		00:00:30	00:01:24		
TS (R=80.00')				1.98			00:00:00	00:20:26
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:20:53
	30	610	0.12		00:00:26	00:00:16		
Olympic and Figueroa				2.11			00:00:20	00:21:55
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:23:08
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:23:54
	30	650	0.12		00:00:23	00:00:41		
TS (R=80.00')				2.46			00:00:00	00:24:58
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:25:27
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:26:43
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:28:00
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:29:00
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:29:29
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:30:54
	35	1115	0.21		00:00:36	00:00:47		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:32:37
	35	890	0.17		00:00:32	00:00:40		
2nd and Hill				3.47			00:00:20	00:34:09
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:36:00
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:36:07
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:37:39
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:37:46
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:37:59
				3.79	**00:13:11**	**00:17:08**	**00:07:40**	**00:37:59**
						Avg. Speed =	6.0 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 3 - Broadway Transit Only Lane

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:00:40		
3rd and Broadway				0.54			00:00:20	00:04:52
	30	660	0.13		00:00:27	00:00:18		
4th and Broadway				0.66			00:00:20	00:05:57
	30	664	0.13		00:00:27	00:00:46		
5th and Broadway				0.79			00:00:20	00:07:30
	30	660	0.13		00:00:27	00:00:45		
6th and Broadway				0.91			00:00:20	00:09:02
	30	670	0.13		00:00:27	00:00:31		
7th and Broadway				1.04			00:00:20	00:10:20
	30	655	0.12		00:00:27	00:00:12		
8th and Broadway				1.16			00:00:20	00:11:19
	30	670	0.13		00:00:27	00:00:18		
9th and Broadway				1.29			00:00:20	00:12:24
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:13:38
	25	680	0.13		00:00:25	00:00:25		
11th and Broadway				1.54			00:00:20	00:14:48
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:14:55
	30	590	0.11		00:00:22	00:00:27		
Olive and 11th				1.67			00:00:20	00:16:04
	30	820	0.16		00:00:31	00:00:41		
Hope and 11th				1.83			00:00:20	00:17:36
	30	790	0.15		00:00:30	00:01:23		
TS (R=80.00')				1.98			00:00:00	00:19:29
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:19:56
	30	610	0.12		00:00:26	00:00:16		
Olympic and Figueroa				2.11			00:00:20	00:20:58
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:22:11
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:22:57
	30	650	0.12		00:00:23	00:00:41		
TS (R=80.00')				2.46			00:00:00	00:24:01
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:24:30
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:25:46
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:27:03
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:28:03
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:28:32
	30	1190	0.23		00:00:39	00:00:27		
5th and Hill				3.09			00:00:20	00:29:58
	35	1115	0.21		00:00:36	00:00:47		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:31:41
	35	890	0.17		00:00:32	00:00:40		
2nd and Hill				3.47			00:00:20	00:33:13
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:35:04
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:35:11
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:36:43
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:36:50
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:37:03
				3.79	**00:13:11**	**00:16:12**	**00:07:40**	**00:37:03**
						Avg. Speed =	6.1	mph
						Avg. Station Spacing=	0.16	miles

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 4 - Base Case with Improvements and 16 Stops

Station	Speed (mph)	Distance (miles) Feet	Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	1320	0.25		00:00:42	00:01:31		
4th and Broadway				0.66			00:00:20	00:05:58
	30	1324	0.25		00:00:42	00:01:18		
6th and Broadway				0.91			00:00:20	00:08:18
	30	1325	0.25		00:00:42	00:01:03		
8th and Broadway				1.16			00:00:20	00:10:23
	30	1330	0.25		00:00:42	00:01:06		
Olympic and Broadway				1.41			00:00:20	00:12:31
	25	680	0.13		00:00:25	00:00:49		
TS (R=80.00')				1.54			00:00:00	00:13:45
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:13:52
	30	980	0.19		00:00:31	00:00:50		
Grand and 11th				1.75			00:00:20	00:15:33
	30	1200	0.23		00:00:39	00:01:43		
TS (R=80.00')				1.97			00:00:00	00:17:55
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				1.99			00:00:20	00:18:22
	30	1170	0.22		00:00:39	00:00:46		
9th and Figueroa				2.21			00:00:20	00:20:07
	30	1290	0.24		00:00:38	00:00:38		
TS (R=80.00')				2.46			00:00:00	00:21:23
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:21:52
	30	1210	0.23		00:00:40	00:00:55		
Grand and 7th				2.71			00:00:20	00:23:47
	30	715	0.14		00:00:25	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:24:54
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:25:23
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:26:48
	35	1115	0.21		00:00:36	00:00:51		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:28:35
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:30:08
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:31:59
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:32:06
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:33:38
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:33:45
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:33:58
				3.79	**00:11:36**	**00:17:42**	**00:04:40**	**00:33:58**
						Avg. Speed =	6.7 mph	
						Avg. Station Spacing=	0.25 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

ATTACHMENT 3 – STOPS MODEL RESULTS

Run #	Description	Speed	Project Ridership	New Transit Trips
15	7th with Spur	6.5	6,358	3,464
25	7th with Spur	5.5	5,260	2,743
17	7th with Spur	4.5	4,339	2,135
22	7th Without Spur	4.5	3,077	1,248
23	9th with Spur	4.5	4,224	2,179
24	9th without Spur	4.5	3,019	1,317
26	7th with Spur Less Stops	6.5	5,368	3,188

Metro L.A. Downtown Streetcar Project *7th Street With Spur with Less Stops (6.5 Miles / Hour)*

Map Produced by Countywide Planning and Development, LACMTA, August 2015

Appendix K
MSF Methodology Memo

To: Gary Petersen, ICF	
From: Jim Hecht	Project: Los Angeles Streetcar
CC:	
Date: January 2016	Job No: 161302

RE: Los Angeles Streetcar Maintenance and Storage Facility Site Selection

1. Introduction

The Restoration of Historic Streetcar Service in Downtown Los Angeles Project (Project) consists of the construction and operation of streetcar service in downtown Los Angeles, California, along a 3.8-mile one-way loop. The Project alignment would begin at Hill and 1st Streets, run east along 1st Street, south along Broadway, west along 11th Street, north along Figueroa Street, east along 7th Street or 9th Street, and north along Hill Street, back to its beginning at 1st Street. Potential inclusion of a Grand Avenue Extension would also provide a two-way alignment spur west along 1st Street, beginning at Hill Street, and continuing south along Grand Avenue to a stop north of 2nd Street.

The purpose of the maintenance and storage facility (MSF) is to provide a location for secure storage of the vehicles when they are not in operation and a location with equipment and facilities to conduct regular maintenance of the vehicles to keep them clean and in good operating condition. This memo identifies four potential streetcar MSF sites that will be cleared environmentally; one of the four sites will eventually be constructed. Once a recommended site has been selected and the environmental process has been completed, real estate acquisition, final design, and construction can begin.

2. Preliminary MSF Site Selection

A search for potential MSF sites was initiated with a geographic search, which provided a list of more than 7,000 parcels within the boundaries formed by U.S. 101, Interstate 110, Interstate 10, and Los Angeles Street. These boundaries limited the search to parcels in proximity to the streetcar alignment. Areas north of U.S. 101 were not considered because that vicinity would require crossing the freeway with a non-revenue lead track, at an unnecessary and undesirable cost.

Based on preliminary analysis for planning purposes, the MSF site location should satisfy the following selection criteria:

- Be located within ½ mile of the streetcar mainline;
- Support a minimum facility size for a maintenance building, approximately 60 feet wide by 185 feet long, and streetcar storage yard, approximately 65 feet wide by 185 feet long, with additional areas available for parts storage and employee parking;
- Minimize the number of exterior access points where streetcar vehicles move into or out of public roadways

during operations within the site;

- Place special track work within the public right-of-way where possible to minimize the site area but, at the same time, avoid yard movements that encroach into the public right-of-way; and
- Avoid reverse movements for daily operations as much as possible by:
  - Maintaining a “pull-through” inspection pit for daily inspections of streetcar underbodies, and
  - Following a preferred flow of streetcars at the end of the service day, which would be (a) through the car wash and over a pit for daily inspection, then (b) into either the shop or the streetcar storage area.

The MSF site would need to also satisfy the following space and site requirements:

- Size the facility to accommodate 12 streetcars;
- Assume streetcar dimensions of approximately 82 feet by 8 feet. Allow for access around the ends of streetcars and 9 feet wide to allow some buffer between streetcars and adjacent obstructions;
- Assume a minimum of three interior bays (which can also be utilized for storage; the other nine vehicles can be stored on outdoor tracks);
- Include a vehicle wash bay, approximately 100 feet long (which can also be utilized for storage), or consider hand washing as a space-saving alternative;
- Track Center Dimensions: Minimum track centers of 15 feet, allowing 7.5 feet of clearance on either side of vehicle for circulation;
- Minimum radius curves of 66 feet for track alignments into and within the yard;
- Maintenance building footprint of approximately 12,000 square feet, including a shop, office, and storage space, and a minimum ceiling height of 22 feet to account for aerial walkways, which would be used to service roof-mounted equipment:
  - This assumes a staff of 19, including supervisor and maintenance staff. It does not include the staff that will not need office space, such as operators or fare inspectors;
  - The office building is assumed to be approximately 4,000 square feet. This is already included in the maintenance building footprint area, above;
- Automobile parking is not included in the minimum site dimensions but would be useful to provide if space is available. If so, it is recommended that 20 spaces be provided for employee and visitor parking:
  - Creative parking options could be utilized, such as shared parking at another site, street parking, alternative modes of transportation for employees, etc.;
  - Parking could be fitted into underused areas on-site once the trackwork and building footprint are designed; and
- Access and an area for delivery trucks to pull into the site and offload will need to be included as the designs are developed.

- A traction power substation (TPSS) is not to be explicitly included in the site area but would most likely be able to fit within the MSF building footprint and/or site area provided:
    - If outside the MSF, a TPSS unit is assumed to be approximately 11 feet by 17 feet, with access drive on one long side; and
    - If housed within the MSF, a TPSS unit is assumed to be approximately 5 feet by 15 feet. It could be co-located in the electric room.

The above criteria would require a site size of approximately one or two acres. The size range varies because it depends on the shape of the site, exactly which streetcar operations and maintenance functions are housed at this location, and whether or not the site will include employee parking. These size requirements were used broadly to eliminate potential sites with areas that are too small to be considered.

3. Preliminary MSF Site Selection

Other considerations for determining MSF sites included:

- Estimated Comparable Costs
    - Property Cost
    - Yard Lead Track Cost
- Downtown Design Guidelines
- Operability of Site Layout
- Proximity to Mainline: Yard Lead Track
- Site Slope/Need for Retaining Walls
- Need for Demolition Work
- Extent of Yard Track and Special Track work
- Parcel Ownership

Estimated Comparable Costs

Estimated comparable costs include estimates of costs and quantities that can vary by site. They do not include all costs associated with construction of an MSF site and are therefore used for comparative purposes only.

For those sites that met the minimum area criteria, an estimated property cost and yard lead track cost were applied, based on the absolute minimum site area and the distance of the site from the mainline.

Property Cost

The price to acquire property will most likely be the largest cost in the development of an MSF site. Eight large comparable property sites near the study area that were sold or are for sale, with no building improvements, were used to identify various cost levels for the site options at the time of the initial assessment in late 2011. These cost levels were $150/SF, $200/SF, and $250/SF, with $250/SF being premium properties near areas such as LA Live and Staples Center and $150/SF being lower-end properties in former redevelopment areas.

The estimated property cost for each site was based on one of the assumed per-square-foot cost levels and the absolute minimum site area defined above. (Note that this assumes partial parcels can be acquired to minimize the area purchased. The actual purchase area will vary with each site, as will the actual per-square-foot costs; therefore, the estimated land value should not be considered final.)

Yard Lead Track Cost

Non-revenue yard lead track should be minimized as much as possible. A long non-revenue yard lead track is often single or double tracked, operating within street or alley rights-of-way. The yard lead track does not carry passengers or generate revenue, yet it requires the same type of track and overhead catenary system (OCS) construction as the mainline track. Therefore, an estimate of yard lead track, based on the distance from the site to the mainline, was determined and applied to a per-track-foot cost for yard lead track.

The costs associated with yard lead track include guideway preparation, track, utility relocations, and OCS, with a 30% contingency, 5% escalation per year to mid-point of construction, 30% professional services, and another 10% unallocated contingency. This results in a per-track-foot cost of approximately $1,900 per track foot. (Note that this assumes single track for the yard lead track. Depending on how a site is developed and the streets leading to it, it may be necessary to separate inbound and outbound vehicles traveling to and from the maintenance facility, which would require double track. Therefore, the estimated yard lead track cost should not be considered final).

Downtown Design Guidelines

In addition to the characteristics above, the following Downtown Design Guidelines and Street Guidelines were also examined for screening criteria:

- Preserve existing buildings as much as possible, especially historic buildings;
- Provide 18- to 24-inch access zone next to curb, plus a continuous landscaped parkway (varying between 4 feet and 7 feet, depending on sidewalk width), plus a 6-foot continuous travel path;
- Avoid closing alleys where possible; and
- Line the edge of the property with an attractive façade—no chain link, barbed wire, or roll-up doors.

Operability of Site Layout

An ideal site layout was created that maximizes operability while minimizing the site area required. All site layouts were compared and ranked against this ideal layout. The ideal layout would be an L- shape with one point of entrance/exit. Upon entering the yard, the streetcars would first run through a car wash (40 feet by 100 feet) and then proceed to either the maintenance shop or the storage yard without requiring reversing movements. The vehicles should also be able to proceed from storage to the mainline without reversing movements. All reversing movements between the shop and storage area are to be kept within the site to avoid off-site traffic impacts.

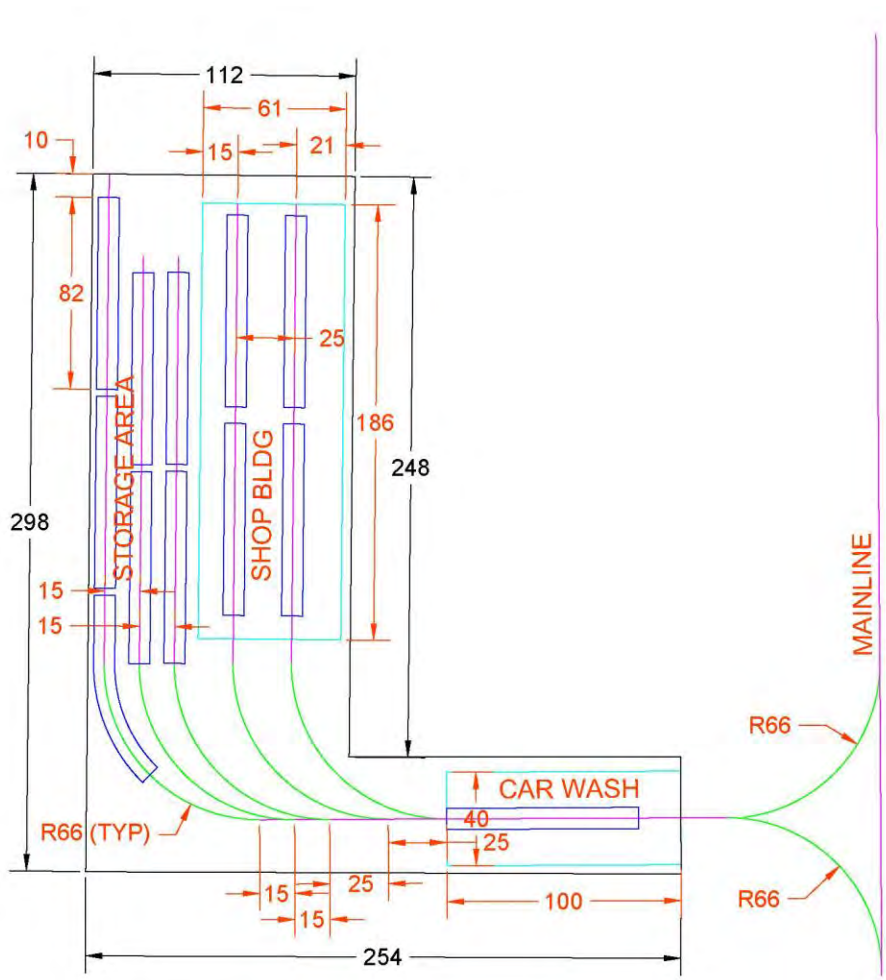


Figure 1: Potential MSF layout

The shop dimensions would be approximately 61 feet by 185 feet to hold four vehicles, though, for tight sites, two workspaces, with one long-term space, may be adequate for a fleet size of 12 vehicles. The shop tracks would be separated by a minimum of 25 feet. One side of the shop would require 21 feet from track to shop wall (15 feet for a work area and a 6-foot access aisle). The other side would provide a minimum of 15 feet from track to shop wall. The storage area and car wash would house the remaining vehicles, for a total of 12 vehicles stored on-site.

Proximity to Mainline: Yard Lead Track

Sites that would be located more than one block away from the mainline were removed from consideration to avoid a long non-revenue yard lead track. Each site's yard lead track was refined, based on its unique site layout. The updated yard lead track cost was incorporated into the site's estimated comparable cost.

Site Slope/Retaining Wall

Because of the large amount of special track work within the MSF yard, finished sites must have a zero percent slope. For sloped sites that would require grading and retaining walls to achieve a zero percent slope, a retaining wall allowance was added to the site's estimated comparable cost.

Demolition Work

Sites that include existing buildings, utilities, and/or paving, that would need to be demolished were assigned a demolition allowance to account for the added costs of demolition work. This cost was added to the site's estimated comparable cost.

Yard Track and Special Trackwork

Because of dimensional constraints, some sites would require significantly more yard track or special track work. This would add to the site's development cost. Therefore, the amount of yard track and special track work was estimated, based on site layouts, and added to the site's estimated comparable cost.

Estimated Land Value: Property Cost

The estimated land values were based on one of the assumed per-square-foot cost levels, described above in the discussion of initial criteria, estimated comparable costs, and property cost, and the specific site area required based on each site's unique layout. This updated land value cost was incorporated into the site's estimated comparable cost. (Note that this assumes that partial parcels could be acquired to minimize the area purchased. The actual purchase area will vary with each site option, as will the actual per-square-foot costs; therefore, the estimated land value should not be considered final) .

Parcel Ownership

No publicly owned sites were identified. Private property owners were contacted to determine their potential willingness to sell all or a portion of their property for an MSF site. All the property owners expressed potential willingness to sell for purposes of future use as an MSF site.

4. Recommended Potential MSF Sites

Based on the above criteria, four sites were chosen to be evaluated in the environmental analysis. The sites are shown in Figure 2. It was determined that all the sites have agreeable owners, and the property values were fairly comparable.

Site 1: The northeast corner of 12th Street and Grand Avenue is the location of one potential MSF site. Three parcels located there would total 92,815 square feet. There are no existing buildings on the potential site that would require demolition. No retaining walls would be needed at this location. A total of 165 feet of track lead and 1,215 track feet of yard track are estimated to serve a 12,378-square-foot MSF facility. A hand wash area for vehicles would be required at this location. Also, the closure of an alley may be required. A 100-foot car wash would not fit prior to entering the shop area, and a 40-foot width would not fit in an alley storage area. The site is less than one block from the mainline and would allow for an easy exit from the storage area to the mainline.

Site 2: Three parcels on the southeast corner of 11th and Olive Streets, totaling 47,915 square feet, could serve as an MSF site. The site is 152 feet long along 11th Street, and 304 feet long along Olive Street. Because the site is smaller than optimum (the depth of the site is 304 feet versus the desired 320 feet), the site would require a turntable to achieve a compact layout that would fit within the site. One potential turntable supplier would be Macton Corporation (dlouder@macton.com). A turntable would cost approximately $800,000.

Site 3: Seven parcels on the northwest corner of 5th and Hill Streets make up 98,690 square feet, which could be the site of an MSF. The parcels are zoned as residential, though they are existing parking lots. A total of 500 track feet of track lead and 1,275 track feet of yard track could be accommodated, and a 26,010-square-foot facility could be provided.

Site 4: Properties located midblock between 2nd and 3rd Street and between Hill Street and Broadway are also a potential MSF site. The four parcels total 57,719 square feet. A facility of approximately 25,115 square feet would accommodate approximately 104 track feet of track lead and 1,405 track feet of yard track. No existing buildings on-site would require demolition. A retaining wall would most likely be required at this site. It was determined that a leaking underground storage tank was found on the southeast corner of the lots. This would need to be investigated in final design. This location could provide an ideal layout for an MSF.

Figure 2: Potential MSF Sites

5. Conclusion

This analysis looked at possible sites from a planning perspective. All sites listed are suitable for streetcar maintenance and storage based on current information available. However, the final design team will need to determine the final locations and layout of the MSF. Further analysis will be necessary in order to finalize the specific MSF sites for the project.

Appendix L
Small Starts Speed Improvement Analysis, Technical Memorandum

Restoration of Historic Streetcar Service in Downtown Los Angeles

Small Starts Speed Improvement Analysis
Technical Memorandum

Executive Summary

A Small Starts Speed Improvement Analysis has been performed to evaluate potential physical and operational treatments that would improve the run time of the Downtown Los Angeles Streetcar Project. The table below summarizes the results for the afternoon peak hour (worst case condition).

Streetcar Run Time Analysis Results

	Existing	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Description	Without Improvement (AECOM Estimate)	EIR Assumed 3 Protected Turn Phases	Additional Improvements at 16 Locations	Scenario 1 + Transit-Only Lane (2 SB Lanes)	Scenario 1 + Transit-Only Lane (1 SB Lane)	Scenario 1 + Stop Reduction (25 to 16)
Travel Time	49.5 min	45.8 min	38.5 min	38 min	37 min	34 min
Speed	4.7 mph	5.0 mph	5.9 mph	6.0 mph	6.1 mph	6.7 mph
Approx. Ridership (7th with Grand Ave)	4,400	4,800	5,700	5,700	5,700	5,400

The existing run-time estimate performed by AECOM added two minutes of delay adjustment and did not have the benefit of protected left turn signal phases at 7th and Hill and 1st and Hill. HDR's run-time estimate spreadsheet was modified with intersection delays calculated by Syncho.

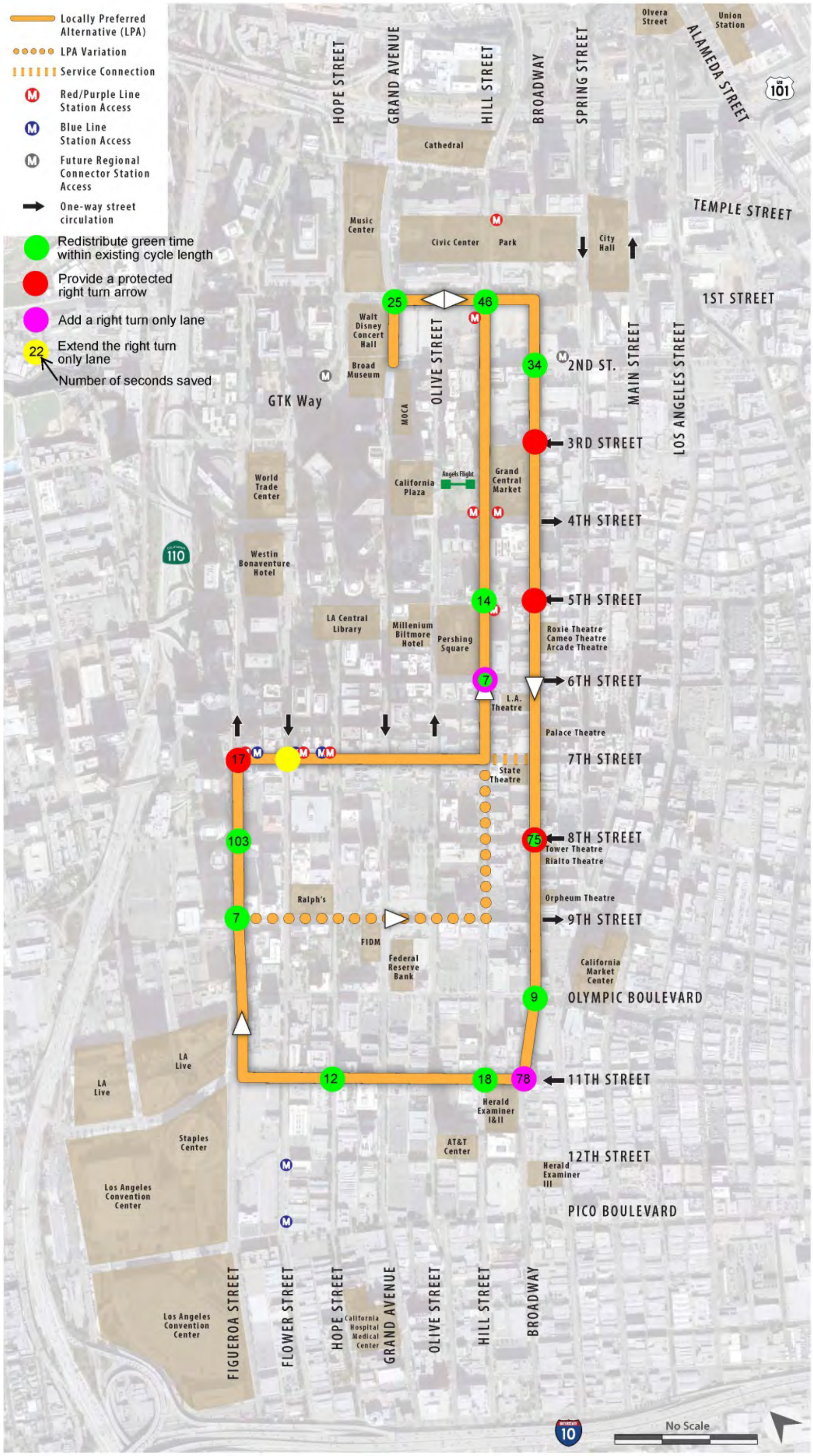
Scenario 1, redistributing 5 to 15 seconds of green time at 11 intersections, providing a protected right turn phase at 4 intersections, extending the right turn lane at one location, and providing new right turn lanes at two locations, saved seven minutes of run time, and got within 3.5 minutes of the 35 minute run time goal. The map on the next page shows where the Scenario 1 improvements are proposed and the resulting run time savings.

Scenario 2, adding a second lane southbound on Broadway with one of the two lanes being transit-only, saves 34 seconds of run time compared to Scenario 1.

Scenario 3, converting the one southbound lane on Broadway to transit-only, saves 90 seconds of run time compared to Scenario 1, but causes significant traffic impacts at six intersection locations.

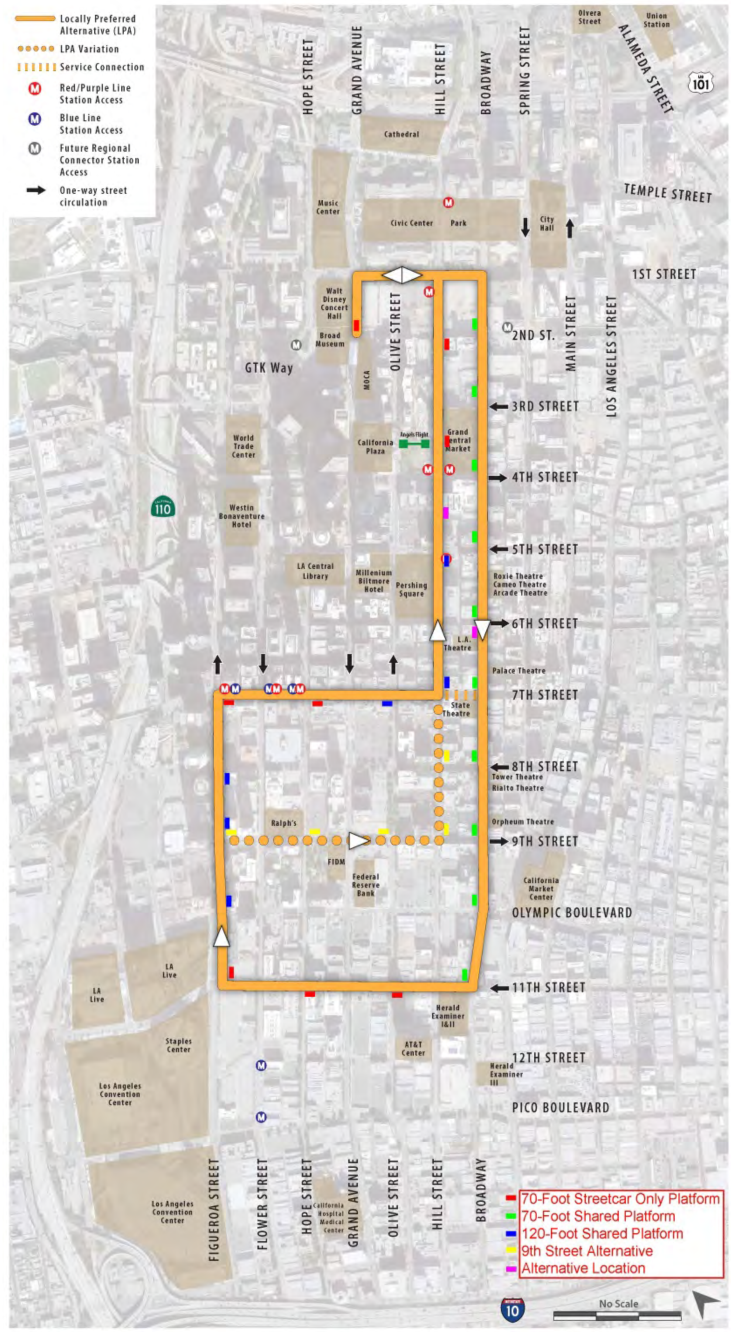
Scenario 4, reducing the number of streetcar station stops from 25 to 16, saves 4.5 minutes in run time compared to Scenario 1. Combined with the proposed Scenario 1 modifications, Scenario 4 achieves the goal of a run time of less than 35 minutes. However, a ridership estimate was performed by Metro with the reduced number of streetcar station stops, and the result was a reduction of 300 boardings per day, from 5,700 riders to 5,400 riders.

Scenario 1 Improvements



Introduction

The Downtown Los Angeles Streetcar (Project) is a 3.8-mile loop that starts in an exclusive median on Grand Avenue just north of 2nd Street. It turns right on 1st Street, turns right on Broadway, turns right on 11th Street, turns right on Figueroa Street, turns right on 7th Street, turns left on Hill Street, turns left on 1st Street, and turns left on Grand Avenue back to the starting point. There is variation to the locally preferred alternative (LPA) that uses 9th Street that will also need to be considered in the environmental document.



The Project is seeking FTA funding for the construction and project development costs through the Federal Transit Administration (FTA) Capital Investment Grant Program. The FTA will evaluate the project against six Project Justification Factors (Mobility Improvements, Environmental Benefits, Congestion Relief, Cost-Effectiveness, Economic Development, and Land Use), and overall the Project must receive at least a medium rating in order to receive funding. The critical elements of this evaluation are ridership, capital cost, and operations and maintenance (O+M) cost.

Ridership has more impact on the overall rating than any other factor because it affects three of the six justification factors. FTA requires all of its projects to estimate ridership using a software program that they have developed called STOPS (Simplified Trips on Project Software). When the project is submitted to FTA for a rating, it will need to have a ridership estimate, a detailed operating plan, and proposed physical improvements that are all consistent with one another. In addition, the FTA will be the lead agency for NEPA clearance, and the environmental document will have to be consistent with each of these other elements. The FTA will need evidence and documentation to back up the estimated run time for the transit service, because this affects the ridership and determines the number of streetcar vehicles that will need to operate to achieve the planned service headway. The FTA will be checking the capital cost estimate to be sure that the correct number of vehicles is included in the project capital cost estimate, that the O+M estimate reflects all of these vehicles in service, and that the MSF facility is sized appropriately to accommodate the vehicle fleet. The run time is a critical factor for the project.

As part of the Alternatives Analysis, in 2011, the project team prepared operating plans and O+M estimates for the seven alignments being evaluated as part of the final screening. For the two alternatives that were selected as the LPA, the streetcar run time was estimated to be 35.5 minutes, requiring 6 vehicles to meet the peak 7-minute headway plus one spare. This equates to an average speed of 6.5 miles per hour (MPH). The estimate was based on 25 stops at 2^{nd}/Grand, 2^{nd}/Broadway, 3^{rd}/Broadway, 4^{th}/Broadway, 5^{th}/Broadway, 6^{th}/Broadway, 7^{th}/Broadway, 8^{th}/Broadway, 9^{th}/Broadway, Olympic/Broadway, 11^{th}/Broadway, Olive/11^{th}, Hope/11^{th}, 11^{th}/Figueroa, Olympic/Figueroa, 9^{th}/Figueroa, 8^{th}/Figueroa, Figueroa/7^{th}, Hope/7^{th}, Olive/7^{th}, 7^{th}/Hill, 5^{th}/Hill, Angel's Flight/Grand Central Market, 2^{nd}/Hill, and 2^{nd}/Grand. A 20 second dwell time was assumed at each stop. Acceleration and deceleration were assumed to be 2.5 MPH per second. Maximum speeds were assumed to be the posted speed limits or the restricted speeds around the 90 degree turns. In addition, an average intersection delay was assumed to be 20 seconds.

Since 2011, many of the downtown streets on the streetcar route have undergone significant transformations. Broadway has been restriped from 2 lanes southbound (SB) and 3 lanes northbound (NB) to 1 lane SB and 2 lanes NB to provide wider sidewalks. Also, 7^{th} Street has been restriped from 2 lanes eastbound (EB) and 2 lanes westbound (WB) to 1 lane EB and 2 lanes WB to provide bike lanes. Bike lanes were added to 1^{st} Street, and bike lanes are proposed for 11^{th} Street by changing the configuration from 2 lanes WB to 1 lane WB, and Figueroa Street will also see a lane reduction to receive bike lanes. These road diets along the streetcar route, coupled with significant new development and re-activation of historic buildings, along with a significant amount of all types of construction, has created traffic congestion along the Project route. AECOM, the City's Project Management Consultant, performed a floating car study that showed an average speed of 4.7 MPH during the afternoon peak period. To maintain a 7-minute headway at 4.7 MPH, it is expected that eight (8) streetcars would need to be placed in service rather than the six (6) previously assumed, increasing the O+M cost, and reducing ridership. To evaluate potential physical and operational treatments that would help improve the streetcar's run time, a Small Starts Speed Improvement analysis was performed. The scope, field observations, methodology and alternatives, assumptions, findings, and conclusions of this analysis are presented in the following sections.

Scope of the Analysis

The scope of the Small Starts Speed Improvement Analysis consisted of field observations, intersection evaluations for the base condition and three improvement scenarios, and streetcar run time estimates for the base condition and four improvement scenarios. It should be noted that one of the four scenarios simply reduced the number of streetcar station stops, while maintaining the improvements proposed to reduce the streetcar's delay and its associated run time.

Field Observations

Field observations were performed over a 2-day period in August 2015 during the PM peak period (from 3:30 to 5:30 PM) to observe traffic operating conditions and identify potential trouble spots that may affect the future streetcar operations. The objective of this site visit was to identify traffic delay locations, determine the possible causes of this delay, and use the information collected to assist in recommending modifications to the roadway system that will assist in alleviating these bottlenecks. This assessment was conducted for the 7th Street streetcar alignment alternative. The focus of the field observations were along Broadway (between 1st and 11th Streets), 11th Street (between Broadway and Figueroa Street), Figueroa Street (between 11th and 7th Streets), 7th Street (between Figueroa and Hill Streets), and Hill Street (between 7th and 1st Streets). In addition, a field inventory was conducted during the site visit to review and verify the intersection lane configuration, the type of traffic control, the signal phasing, and the pedestrian activity. The following traffic conditions were observed at these roadways.

- **Broadway** – heavy northbound and southbound traffic volumes and queue build-up was observed along the roadway segment between 2nd and 8th Streets. For the southbound direction of Broadway, queues and associated delays due to congestion were noticeable at the 3rd, 5th, and 8th Street intersections.
- **11th Street** – westbound traffic along 11th Street flowed freely through the intersections from Broadway to Figueroa Street. There were minor delays for the turning movements waiting for pedestrians to cross the street; however, it did not result in any noticeable queuing conditions.
- **Figueroa Street** – northbound traffic along the segment of Figueroa Street between 11th and 9th Street flowed adequately through the intersections. Significant delays were observed on the northbound approach at 7th Street with queuing developing along the northbound right turn lane and extending to 8th Street. In addition, it was also observed that vehicle queue spillback from 6th Street affected the operations at the intersection of 7th Street and Figueroa Street resulting in delays and queues extending back to the Figueroa Street and 8th Street intersection and beyond. It was also observed that the far side bus stops at Figueroa and 7th Streets resulted in the queuing of buses along the designated Figueroa bus lane between 7th and 8th Streets.
- **7th Street** – eastbound through traffic along the segment between Figueroa and Flower Streets queued due to the existing short right turn lane storage length. Eastbound right turn traffic at 7th Street queued waiting for pedestrians crossing the south leg of Flower Street to clear the crosswalk. During several signal cycles, it was observed that the right turn queue spilled back beyond the right turn lane storage length and blocked the eastbound through movement along 7th Street. Eastbound through traffic along the remaining segments of 7th Street flowed freely through the intersections from Flower Street to Hill Street.
- **Hill Street** – traffic delays and congestion was observed along the northbound segment of Hill Street at the 6th Street and the 5th Street intersections. Northbound right turn traffic at Hill Street queued waiting for pedestrians crossing the east leg of 6th Street to clear the crosswalk. This resulted in the northbound curb lane being blocked thus delaying the northbound through movement along the curb lane of Hill Street, which is the location of the streetcar tracks.

As a result of the field observations, a total of eight intersections were identified as locations of concern that may potentially impact the run time estimates and delay the streetcar's operating speed. The eight intersections of concern are Broadway/3rd Street, Broadway/5th Street, Broadway/8th Street, Figueroa

Street/8th Street, Figueroa Street/7th Street, Flower Street/7th Street, Hill Street/6th Street, and Hill Street/5th Street.

Analysis Methodology and Alternatives

The analysis methodology and alternatives analyzed is divided into two elements; performing the intersection evaluations using the Synchro software to determine the total delay for the streetcar movement and using this information to calculate the streetcar run times.

Intersection Evaluations

The streetcar run time calculation is based on the intersection approach delay for the streetcar movement at each of the 34 signalized intersections along the streetcar alignment. The Synchro V8.0 traffic analysis software was run, during the PM peak hour only, for each of the 34 intersections along the route to determine the total delay for the streetcar movement. The intersection evaluations were performed at 1st /Grand, 1st/Olive, 1st/Hill, 1st/Broadway, 2nd/Broadway, 3rd/Broadway, 4th/Broadway, 5th/Broadway, 6th/Broadway, 7th/Broadway, 8th/Broadway, 9th/Broadway, Olympic/Broadway, 11th/Broadway, 11th/Hill, 11th/Olive, 11th/Grand, 11th/Hope, 11th/Flower, 11th/Figueroa, Olympic/Figueroa, 9th/Figueroa, 8th/Figueroa, 7th/Figueroa, 7th/Flower, 7th/Hope, 7th/Grand, 7th/Olive, 7th/Hill, 6th/Hill, 5th/Hill, 4th/Hill, 3rd/Hill, and 2nd/Hill. The intersection evaluations were performed for the Base Condition and three improvement scenarios.

The Base Condition consisted of running Synchro at the 34 intersections with the streetcar alignment in place using the latest available traffic volumes at each intersection, the latest intersection lane configurations and associated restriping from the development and streetscape projects that have been completed, and the latest traffic signal timing information along Broadway due to the implementation of the streetscape project. All of the latest available information was collected and provided by LADOT.

Scenario 1 consisted of reviewing the results of the field observations and reviewing the streetcar movement delay results from the Base Condition to identify potential physical and operational intersection improvements that would improve the run time estimate. The improvements proposed to improve the streetcar delay are presented in the Assumptions section.

Scenario 2 builds off the improvements proposed in Scenario 1 and would also add a second southbound lane on Broadway from 2nd to 11th Streets. As a result of having two southbound lanes on Broadway, the curb lane includes buses and the streetcar tracks and is designated as a "Transit Only" lane and the second lane will accommodate all other mixed flow vehicles. However, it should be noted that mixed flow vehicles would be permitted to weave across the "Transit Only" lane and the streetcar tracks to access the southbound right turn pocket lanes along Broadway at 2nd, 3rd, 5th, 7th, 8th Streets, and Olympic Boulevard.

Scenario 3 builds off the improvements proposed in Scenario 1 and would designate the single southbound lane on Broadway from 2nd to 11th Streets as a "Transit Only" lane to accommodate buses and the streetcar tracks. All mixed flow vehicles currently traveling in the southbound direction of

Broadway would be diverted to adjacent roadways such as Hill and Spring Streets. Local access to businesses along the southbound direction of Broadway would travel along Hill and Spring Streets and circle back onto the northbound direction of Broadway to access their final destination. Except for transit vehicles, southbound right turn movements at 2nd, 3rd, 5th, 7th, 8th Streets, and Olympic Boulevard would be prohibited. It is assumed that 25 percent of the mixed flow vehicles along southbound Broadway would be local access trips and that 75 percent of the mixed flow vehicles are through trips. The distribution of the southbound through trips between Hill and Spring Streets used the same percentages that were presented in the Broadway Streetscape Plan Traffic Study dated November 2010.

Streetcar Run Time Estimates

To determine estimated streetcar run times, a run time analysis was completed along the corridor in September 2015, replicating the project alignment. The process started with a floating car travel time analysis to determine typical PM peak travel time and delay along the corridor. This analysis was performed to serve as a base to calibrate both an existing Base Condition Synchro network to model traffic signal delays and an existing streetcar run time model to determine streetcar performance if no improvements were made.

The streetcar run time models are based on station to station run times, dwell times and signalized intersection delays for the streetcar movement. The assumptions for each of these parameters are presented in the next section of this document.

Based on the initial Synchro delays, a Base Condition scenario was developed to show projected run times assuming no improvements were made.

Building on the Base Condition, Scenario 1 was developed with minimal improvements including optimization of existing signal timing splits. No Transit Signal Priority (TSP) timings were assumed in this analysis. There were no lane use changes made for Scenario 1. The run times were based on a revised Synchro output which reflected the adjusted signal timings, the addition of a protected right turn phase, where applicable, and the proposed addition of a right turn pocket lane at two intersection locations.

Scenario 2 was developed based on the signal time improvements in Scenario 1 and lane geometry changes along Broadway. Two southbound travel lanes are provided in this scenario from the one southbound lane currently available.

Scenario 3 converts the one southbound lane on Broadway to a transit only lane, including the streetcar. Scenario 3 also assumed the signal timing improvements made for Scenario 1.

Scenario 4 incorporates the incremental signal timing improvements included in Scenario 1, but consolidates the number of streetcar station stops from 25 to 16 and spaces them about every 1/4 mile from every 1/8 mile. The stations included in Scenario 4 are: 2nd/Grand, 2nd/Broadway, 4th/Broadway, 6th/Broadway, 8th/Broadway, Olympic/Broadway, 11th/Grand, 11th/Figueroa, 9th/Figueroa, 7th/Figueroa, 7th/Grand, 7th/Hill, 5th/Hill, Angel's Flight/Grand Central Market, 2nd/Hill, and 2nd/Grand.

Results of the run time analyses are presented later on in the technical memorandum.

Assumptions

The following assumptions were made for the Small Starts Speed Improvement Analysis for each of the intersection evaluations and the run time estimates.

<u>Intersection Evaluations</u>

- Existing (2015) intersection lane configurations were collected and verified by field observations;
- The analysis was based on existing 2014/2015 traffic counts provided by LADOT;
- Available traffic counts that are older than 2014/2015 were used and grown by an annual growth rate of 0.5% per year to reflect existing conditions (this ambient growth rate was used in the EIR traffic study and approved by LADOT);
- Existing signal timing was used. LADOT provided the latest signal timing changes along Broadway that were implemented due to the Streetscape Demonstration Project;
- Existing signal cycle lengths were maintained. The general PM peak hour cycle length is 90 seconds for the analyzed intersections. All current signal off-set parameters remained the same in the analysis;
- On one lane roadways, the bus blockage factor in the Synchro software was utilized to account for potential delays due to near side stops and the anticipated 20-second dwell time for passengers to board and alight;
- Extended yellow clearance times used in the EIR traffic study to reflect the potential for a streetcar to arrive at the intersection near the end of the green time and needing an extra clearance interval to safely clear the intersection were maintained;
- The traffic analysis was based on the streetcar characteristics that were presented and approved in the EIR traffic study. This included a 7-minute headway streetcar operation during the peak hours (9 streetcars per hour);
- Proposed improvements to reduce the streetcar delay consisted of:
  - Redistributing the green time within the existing signal cycle length to provide more green to the streetcar movement/direction. The amount of green time ranged from 5 to 15 seconds and depended on the needs at each intersection;
  - Adding a right turn only pocket lane. This was proposed at Broadway/11th Street and at Hill/6th Street;
  - Providing a protected right turn arrow to clear the right turn queue before or after the crossing of pedestrians. This was proposed at Broadway/3rd Street, Broadway/5th Street, Broadway/8th Street, and Figueroa/7th Street;
  - Extending the existing eastbound right turn lane storage length at Flower/7th Street to accommodate 6 to 7 turning vehicles in order to minimize queue spillover onto the eastbound 7th Street through movement.

The assumed physical and operational intersection improvements are intended to reduce the streetcar delay. Ongoing coordination between City of Los Angeles and Metro will be required for implementing these improvements

Streetcar Run Time Estimates

The estimated vehicle run time models are based on typical streetcar acceleration/deceleration rates of 2.5 mph per second and average dwell times of 20 seconds at each stop. The signal delay times are based on the Synchro output of total delay for the streetcar movement at each of the signalized intersections along the streetcar alignment within the study area. The total delay at signalized exclusive pedestrian crossings was assumed to be 10 seconds per signal.

The run time analysis does not include any layover times, and a total cycle time was not analyzed for the purpose of this estimate. It is assumed that the vehicle layover will occur at the 2nd/Grand station.

Station locations, distances and curve data at intersections were based on the previous concept plans that are being used as the basis of the Environmental Documents. The maximum allowable streetcar speed was assumed to be the same as the posted speed limits.

Findings

The results and findings of the intersection evaluations and streetcar run time estimates for the Base Condition and various improvement scenarios are presented in the following sections.

Intersection Evaluations

The total delay for the streetcar movement was reported at each of the 34 intersections for each of the analysis scenarios. The attached summary table presents the PM peak hour delay for each scenario that was evaluated along with the improvements proposed. As shown from the results, the delays in Scenario 1 improve from the Base Condition due to the improvements proposed at thirteen intersection locations. In addition, improvements are proposed at three intersection locations based on the field observations. Scenario 2 continues to improve the delay, from Scenario 1, at eight intersection locations along Broadway. Scenario 3 continues to improve the delay, from Scenario 2, at eight intersection locations along Broadway. The delay numbers that improve from the previous scenario are shown in bold in the summary table. In addition, it should be noted that Scenario 3, which consists of the "Transit Only" lane along southbound Broadway, results in six (6) intersections being significantly impacted when the overall intersection delay is compared to that of the Base Condition. The six significantly impacted intersection locations are at 1st/Hill, 3rd/Hill, 7th/Hill, Olympic/Hill, Olympic/Broadway, and

PM Peak Hour Delay for the Movements Along the Streetcar Alignment – Summary Table

PM Peak Hour Delay per Vehicle (Seconds per Vehicle)						
Intersection	**Movement**	**Base Condition**	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Improvements Proposed For Scenarios 1, 2, and 3**
Grand Ave / 1st St	NB Right	11	11	11	11	(Note that EIR assumes new protected streetcar phase for NB right turn from median)
Grand Ave / 1st St	WB Left	74	**49**	49	49	Redistribute the green time within the existing cycle length
Olive St / 1st St	EB Thru	32	32	32	32	
Olive St / 1st St	WB Thru	23	23	23	23	
Hill St / 1st St	EB Thru	114	**68**	68	68	Redistribute the green time within the existing cycle length
Hill St / 1st St	NB Left	56	56	56	56	(Note that EIR assumes new protected NB left phase)
Broadway / 1st St	EB Right	6	5	5	6	
Hill St / 2nd St	NB Thru	18	18	18	18	
Broadway / 2nd St	SB Thru	89	**55**	59	**40**	Redistribute the green time within the existing cycle length
Hill St / 3rd St	NB Thru	41	40	40	40	
Broadway / 3rd St	SB Thru	26	25	**12**	**8**	Provide a protected SB right turn arrow (except for Scenario 3)
Hill St / 4th St	NB Thru	9	12	12	12	
Broadway / 4th St	SB Thru	29	30	**28**	36	
Hill St / 5th St	NB Thru	29	**15**	15	15	Redistribute the green time within the existing cycle length
Broadway / 5th St	SB Thru	29	30	**28**	35	Provide a protected SB right turn arrow (except for Scenario 3)
Hill St / 6th St	NB Thru	13	**6**	6	7	Add a NB right turn only lane and redistribute the green time within the existing cycle length
Broadway / 6th St	SB Thru	25	25	**23**	**21**	
Figueroa St / 7th St	NB Right	22	**5**	5	5	Provide a protected NB right turn arrow
Flower St / 7th St	EB Thru	15	15	15	15	Extend the existing EB right turn lane storage length
Hope St / 7th St	EB Thru	10	10	10	10	
Grand Ave / 7th St	EB Thru	30	30	30	30	
Olive St / 7th St	EB Thru	11	11	11	11	
Hill St / 7th St	EB Left	31	31	31	31	(Note that EIR assumes new protected EB left turn phase)
Broadway / 7th St	SB Thru	18	18	**16**	**2**	
Figueroa St / 8th St	NB Thru	139	**36**	36	36	Redistribute the green time within the existing cycle length
Broadway / 8th St	SB Thru	104	**29**	**24**	**8**	Provide a protected SB right turn arrow and redistribute the green time within the existing cycle length
Figueroa St / 9th St	NB Thru	35	**28**	28	28	Redistribute the green time within the existing cycle length
Broadway / 9th St	SB Thru	17	25	**20**	**17**	
Figueroa St / Olympic Blvd	NB Thru	18	16	16	16	
Broadway / Olympic Blvd	SB Thru	35	**26**	**22**	**13**	Redistribute the green time within the existing cycle length
Figueroa St / 11th St	WB Right	25	25	25	25	
Flower St / 11th St	WB Thru	21	21	21	20	
Hope St / 11th St	WB Thru	50	**38**	38	38	Redistribute the green time within the existing cycle length
Grand Ave / 11th St	WB Thru	19	19	19	19	
Olive St / 11th St	WB Thru	25	22	22	22	
Hill St / 11th St	WB Thru	43	**25**	25	27	Redistribute the green time within the existing cycle length
Broadway / 11th St	SB Right	87	**9**	9	**2**	Add a SB right turn only lane

Scenario 1 = The Base Condition with the Proposed Intersection/Signal Timing Improvements

Scenario 2 = The Proposed Intersection/Signal Timing Improvements from Scenario 1 plus Two SB Lanes (1 MF & 1 Transit Only) on Broadway from 2nd to 11th Streets

Scenario 3 = The Proposed Intersection/Signal Timing Improvements from Scenario 1 (where applicable) plus One SB Transit Only Lane on Broadway from 2nd to 11th Streets

Olympic/Main. These locations show significant impacts from the Base Condition due to the fact that mixed flow vehicles were diverted to the adjacent roadways, such as Hill Street and Spring/Main Streets. The Synchro delay worksheets, at each intersection location, for the Base Condition and all three scenarios are presented in Attachment 1. It should be noted that Scenarios 2 and 3, which include a "Transit Only" lane along the southbound direction of Broadway, do not show a greater reduction in delay than what would be anticipated over Scenario 1 because the overall intersection cycle length and green times are allocated so that all traffic volumes and movements, as well as pedestrian movements, are accommodated adequately to clear the intersection and minimize queuing and prevent potential spillback to adjacent upstream intersections.

Streetcar Run Time Estimates

The results of the streetcar run time analyses for all scenarios, including the Base Condition are shown in the table below. The detailed run time worksheets are presented in Attachment 2.

Streetcar Run Time Analysis Results

Scenario	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)	Average Speed (mph)
Base Case Synchro Output	00:13:11	00:24:59	00:07:40	00:45:50	5.0
Scenario 1 Synchro Output - Base with Improvements	00:13:11	00:17:42	00:07:40	00:38:33	5.9
Scenario 2 Synchro Output - Two SB Broadway Lanes	00:13:11	00:17:08	00:07:40	00:37:59	6.0
Scenario 3 Synchro Output - Broadway Transit Only Lane	00:13:11	00:16:12	00:07:40	00:37:03	6.1
Scenario 4 Synchro Output - Base Case with Improvements and 16 Stops	00:11:36	00:17:42	00:04:40	00:33:58	6.7

As shown in the table, Scenario 4, with the 16 station stops, provides the fastest streetcar run time at just under 34 minutes. With the full 25 station stops, Scenario 3 provides the fastest run times at just over 37 minutes.

Conclusions

Redistributing 5 to 15 seconds of green time at 11 intersections, providing a protected right turn phase at 4 intersections, extending the right turn lane at one location, and providing new right turn lanes at two locations (Scenario 1), saves seven minutes of run time, getting us within 3.5 minutes of the 35 minute run time goal.

Adding a second lane southbound on Broadway with one of the two lanes being transit-only (Scenario 2) saves 34 seconds of run time compared to Scenario 1.

Converting the one southbound lane on Broadway to transit-only (Scenario 3) saves 90 seconds of run time compared to Scenario 1, but causes significant traffic impacts at six intersection locations.

Reducing the number of streetcar station stops from 25 to 16 by increasing the spacing from about 1/8 mile to 1/4 mile (Scenario 4), saves 4.5 minutes in run time compared to Scenario 1. Combined with the proposed Scenario 1 modifications, this would achieve the goal of a run time of less than 35 minutes. A STOPS ridership estimate was performed by Metro with the reduced number of streetcar station stops. The result was a reduction of 300 boardings per day, from 5,700 riders to 5,400 riders. The STOPS model results are presented in Attachment 3.

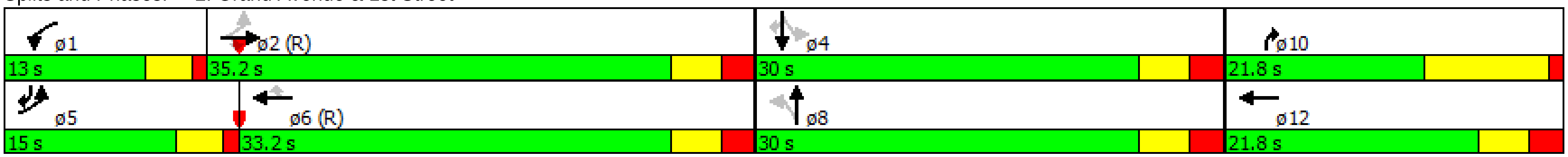
ATTACHMENT 1 – SYNCHRO DELAY WORKSHEETS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.137			0.950			0.163			0.249			
Satd. Flow (perm)	224	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			333			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	35.2	35.2	13.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	42.2	29.7	29.7	9.0	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.42	0.30	0.30	0.09	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.77	0.30	0.86	0.65	0.86	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.4	38.7	4.1	73.6	14.8	27.2	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.4	38.7	4.1	73.6	14.8	27.2	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	E	B	C	E	D	B	D	E	A	
Approach Delay		48.4			27.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	22.6	21.9	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.5	0.0	0.0	
Total Delay	31.8	8.0	22.6	23.4	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.4	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

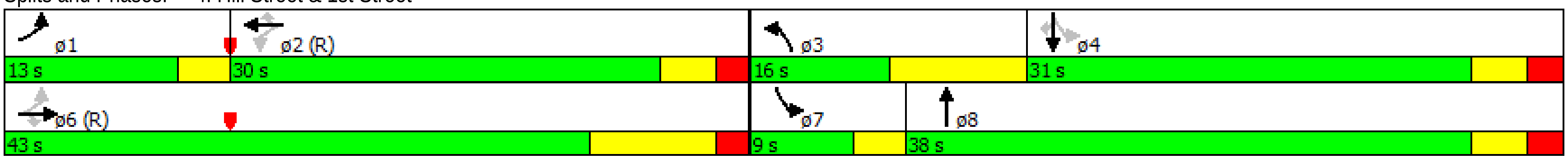
Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65			102		10				155
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	16.0	38.0		9.0	31.0	31.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	8.0	34.4		34.0	25.6	25.6
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.09	0.38		0.38	0.28	0.28
v/c Ratio	0.96	0.89	0.07	0.35	0.75	0.16	0.85	0.54		0.29	0.94	0.40
Control Delay	57.1	36.9	1.5	33.7	35.1	10.7	67.9	37.8		15.8	50.5	7.8
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	46.3	0.0		0.2	0.0	0.4
Total Delay	57.1	55.8	1.5	33.7	35.1	10.7	114.2	37.8		16.0	50.5	8.1
LOS	E	E	A	C	D	B	F	D		B	D	A
Approach Delay		54.7			33.0			49.7			41.6	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 46.0 Intersection LOS: D
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	38.5	28.5		44.3	25.8	
Queue Delay	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.1	6.2	15.0	13.9	4.1	38.5	28.5		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.1			13.0			29.3			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 24.2 | Intersection LOS: C

Intersection Capacity Utilization 84.2% | ICU Level of Service E

Analysis Period (min) 15

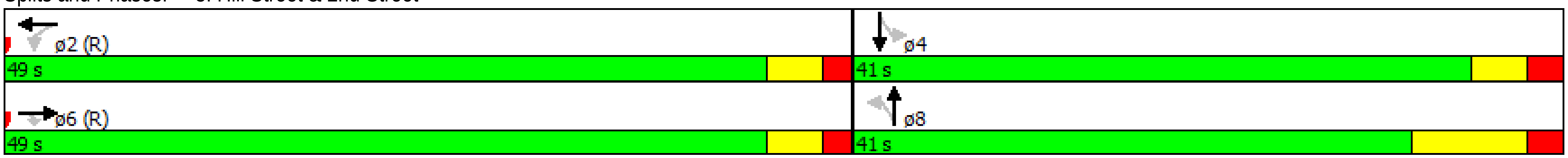
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		9.4		121.0	18.1		8.6	17.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		9.4		121.0	18.1		8.6	17.9	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			9.4			28.7			17.6	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Hill Street & 2nd Street

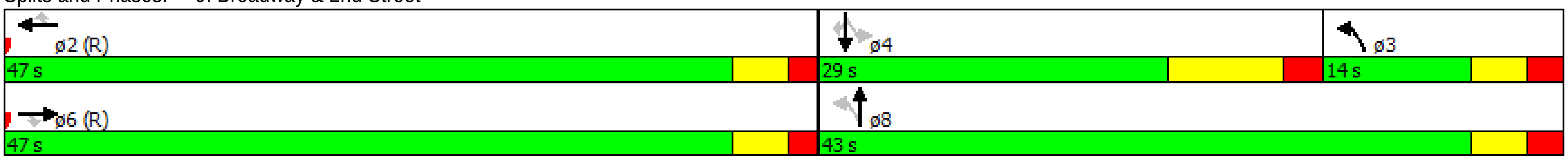


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	33	233	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1606	1374
Flt Permitted							0.493				0.810	
Satd. Flow (perm)	0	1676	1013	0	1676	1346	827	2945	0	0	1292	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		50				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	289	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8			4		4
Total Split (s)		47.0	47.0		47.0	47.0	14.0	43.0		29.0	29.0	29.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		47.3	47.3		47.3	47.3	33.4	32.3			20.1	20.1
Actuated g/C Ratio		0.53	0.53		0.53	0.53	0.37	0.36			0.22	0.22
v/c Ratio		0.69	0.14		0.57	0.05	0.32	0.35			1.00	0.14
Control Delay		16.6	0.5		6.0	0.2	20.1	18.4			88.8	7.2
Queue Delay		0.0	0.0		1.2	0.0	0.0	0.0			0.0	0.0
Total Delay		16.6	0.5		7.2	0.2	20.1	18.4			88.8	7.2
LOS		B	A		A	A	C	B			F	A
Approach Delay		14.7			6.7			18.8			77.6	
Approach LOS		B			A			B			E	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 23.8 Intersection LOS: C
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.2	27.8		102.2	41.1			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.2	27.8		102.2	41.1			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.9			48.1			54.2		
Approach LOS					C			D			D		

Intersection Summary

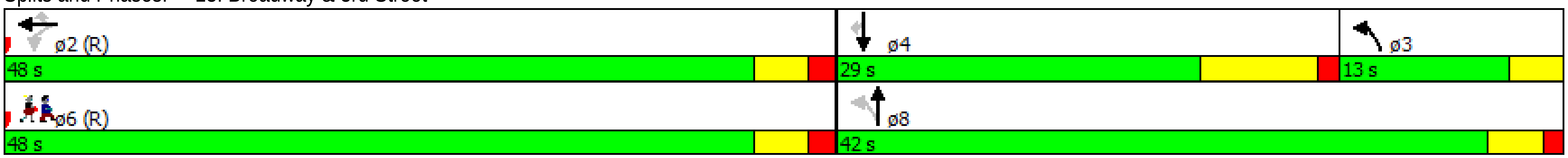
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.1	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	223	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.789					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2392	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						79	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	242	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.60			0.40	0.23	
Control Delay				12.7	29.3	5.3		8.1			26.3	11.9	
Queue Delay				0.0	28.9	0.0		0.2			0.0	0.1	
Total Delay				12.7	58.2	5.3		8.3			26.3	12.0	
LOS				B	E	A		A			C	B	
Approach Delay					53.6			8.3			22.4		
Approach LOS					D			A			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

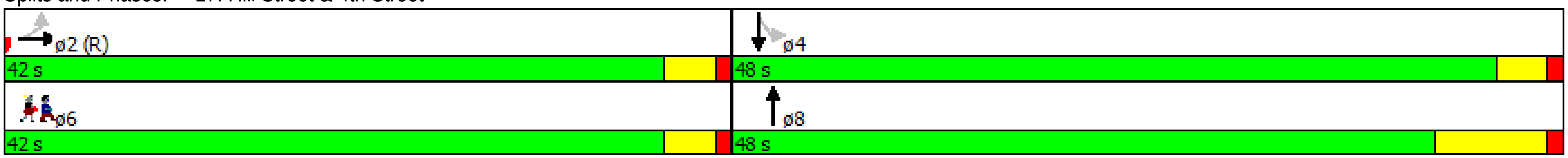


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						8.6		5.2	2.8		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						8.6		5.2	2.8		
LOS		B						A		A	A		
Approach Delay		17.3						8.6			3.1		
Approach LOS		B						A			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	314	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	341	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.57		
Control Delay		7.1						21.7			28.5		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.1						21.7			28.5		
LOS		A						C			C		
Approach Delay		7.1						21.7			28.5		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Pretimed

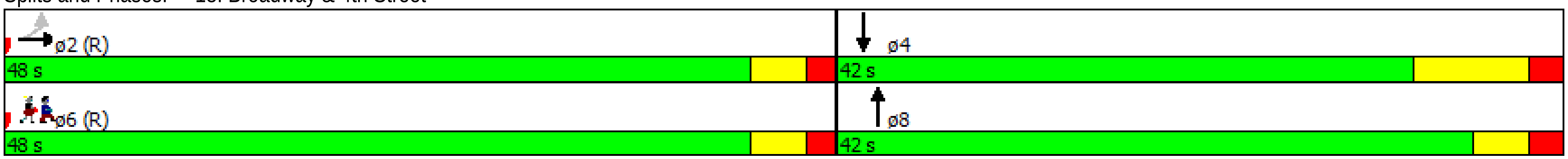
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.6 Intersection LOS: B

Intersection Capacity Utilization 53.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5336	0	1593	3185	0	0	4248	0	
Flt Permitted				0.950			0.210						
Satd. Flow (perm)	0	0	0	993	5336	0	333	3185	0	0	4248	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					62						5		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				44.0	44.0		46.0	46.0			46.0		44.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				39.0	39.0		37.7	37.7			41.2		
Actuated g/C Ratio				0.43	0.43		0.42	0.42			0.46		
v/c Ratio				0.21	0.42		0.55	0.54			0.53		
Control Delay				5.4	4.5		44.8	29.2			32.0		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				5.4	4.5		44.8	29.2			32.0		
LOS				A	A		D	C			C		
Approach Delay					4.6			30.7			32.0		
Approach LOS					A			C			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green

Control Type: Pretimed

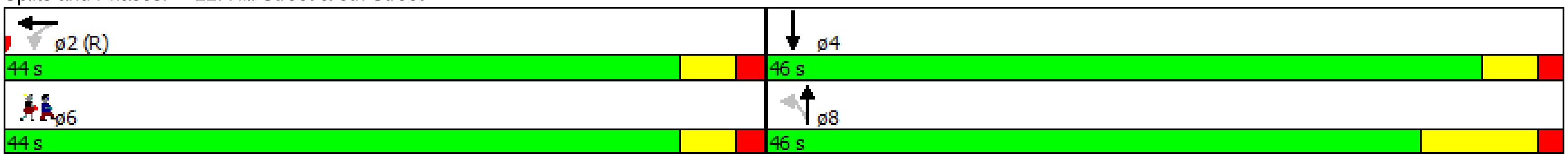
Maximum v/c Ratio: 0.55

Intersection Signal Delay: 21.4 Intersection LOS: C

Intersection Capacity Utilization 64.4% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 22: Hill Street & 5th Street

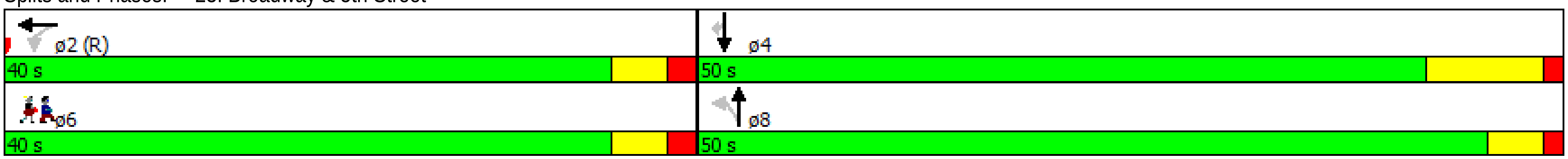


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	326	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.889					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2832	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	354	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.35			0.47	0.14	
Control Delay					11.1			19.9			29.5	18.9	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			19.9			29.5	18.9	
LOS					B			B			C	B	
Approach Delay					11.1			19.9			27.8		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Broadway & 5th Street

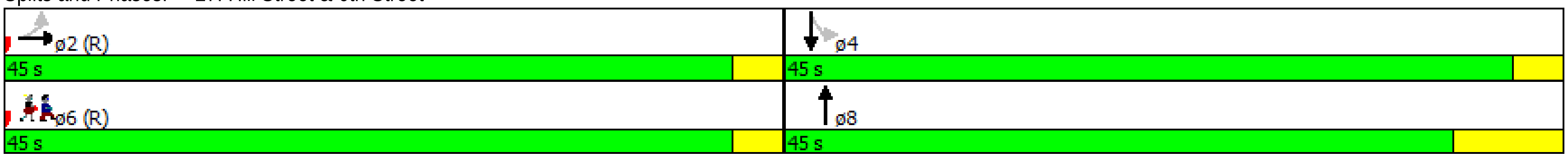


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3125	0	1593	4577	0	
Flt Permitted										0.236			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3125	0	396	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		51						22					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	879	0	93	803	0	
Turn Type		NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	45.0	45.0						45.0		45.0	45.0		45.0
Total Lost Time (s)		3.0						6.5		3.0	3.0		
Act Effct Green (s)		42.0						38.5		42.0	42.0		
Actuated g/C Ratio		0.47						0.43		0.47	0.47		
v/c Ratio		0.46						0.65		0.51	0.38		
Control Delay		5.7						12.9		15.6	6.1		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		5.7						12.9		15.6	6.1		
LOS		A						B		B	A		
Approach Delay		5.7						12.9			7.1		
Approach LOS		A						B			A		

Intersection Summary	
Area Type:	CBD

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 27: Hill Street & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	365	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	397	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.61		
Control Delay		5.6						28.2			24.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		5.6						28.2			24.9		
LOS		A						C			C		
Approach Delay		5.6						28.2			24.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Actuated-Coordinated

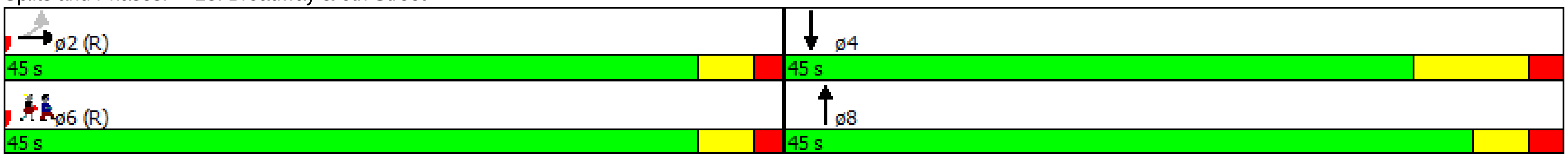
Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.3 Intersection LOS: B

Intersection Capacity Utilization 53.0% ICU Level of Service A

Analysis Period (min) 15

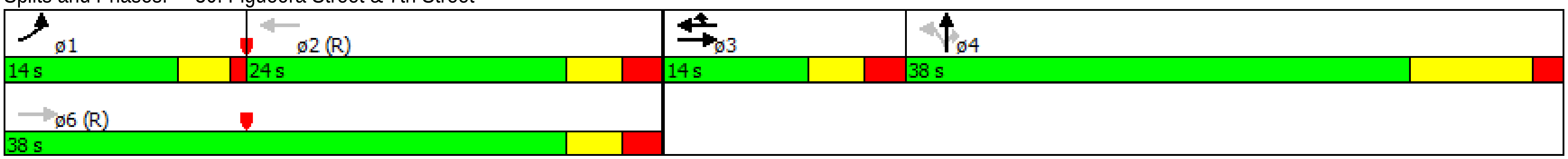
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	226	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm					
Protected Phases	1	3			3	3		4					2	6
Permitted Phases		6			2		4		4					
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.61					
Control Delay	41.7	14.1			8.7	11.1	71.5	42.1	21.6					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	71.5	42.1	21.6					
LOS	D	B			A	B	E	D	C					
Approach Delay		21.7			9.3			45.5						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

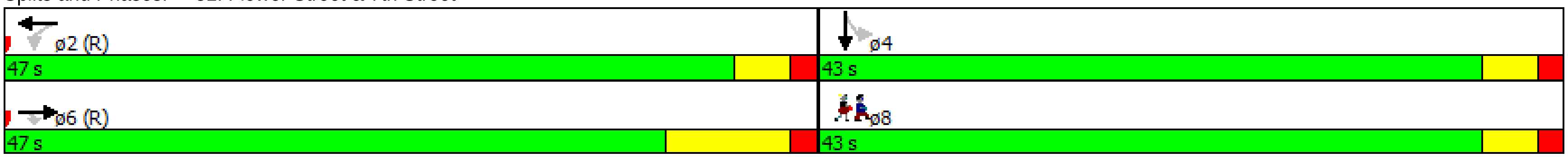


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.6	16.1		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.6	16.1		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		15.2			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 17.1 | Intersection LOS: B
Intersection Capacity Utilization 75.1% | ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 31: Flower Street & 7th Street

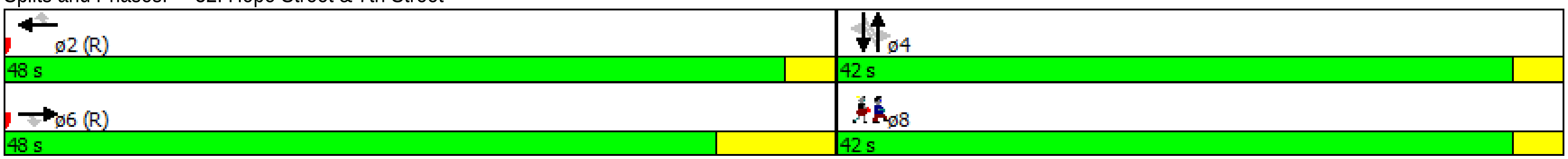


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.4	7.0		16.2	14.1		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.6	7.0		16.2	14.1		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.2			15.8			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: Hope Street & 7th Street

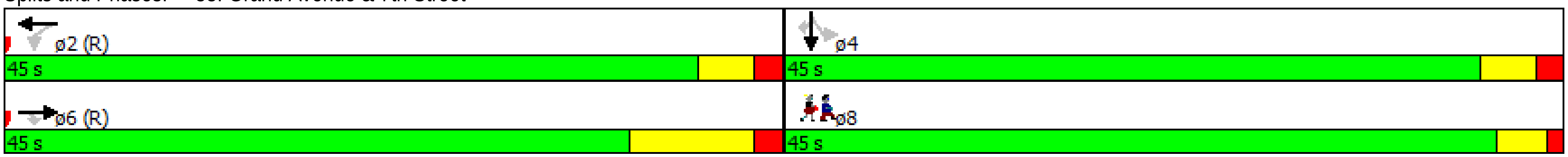


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.8	19.0	6.0	9.4					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.6	19.0	6.0	9.7					46.7	51.5	15.0	
LOS		C	B	A	A					D	D	B	
Approach Delay		27.8			9.4						49.7		
Approach LOS		C			A						D		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: Grand Avenue & 7th Street

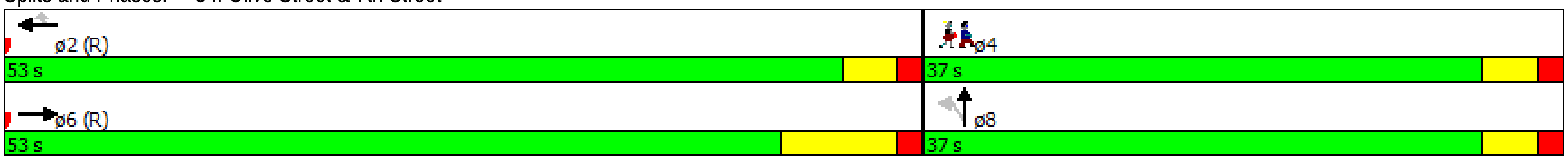


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.3			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 34: Olive Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	60.6	18.2		25.9			37.6	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	60.7	18.2		25.9			38.2	
LOS	C	C	A	C	E	B		C			D	
Approach Delay		21.9			51.6			25.9			38.2	
Approach LOS		C			D			C			D	

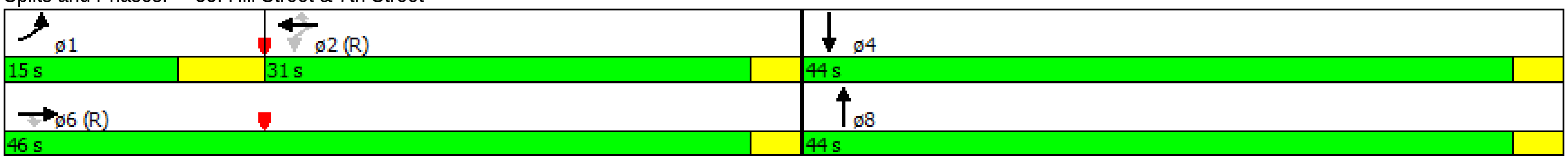
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D

Analysis Period (min) 15

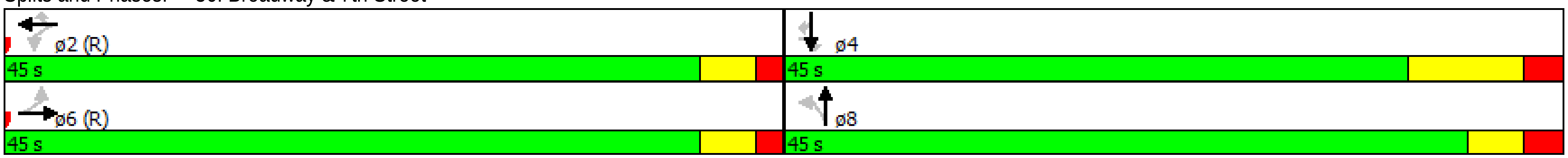
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	444	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.947				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2877	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	483	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.75	0.38
Control Delay	16.8	26.7	8.3	15.3	27.3	11.2		15.5			18.5	9.8
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.6	11.2		15.9			18.5	10.3
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.1			15.9			16.7	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

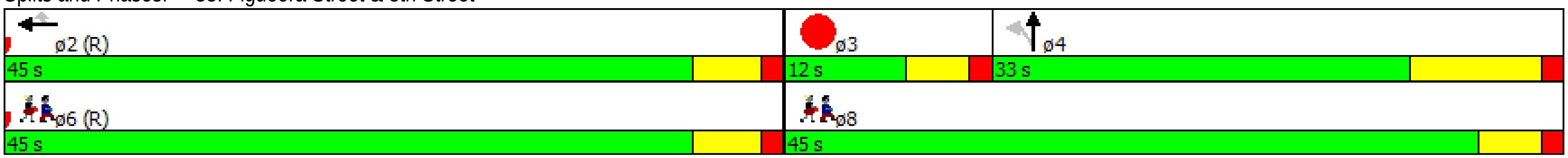


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						246									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					45.0	45.0	33.0	33.0					12.0	45.0	45.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					39.7	39.7		24.0							
Actuated g/C Ratio					0.44	0.44		0.27							
v/c Ratio					0.76	0.57		1.24							
Control Delay					23.6	9.8		138.7							
Queue Delay					0.0	0.0		0.0							
Total Delay					23.6	9.8		138.7							
LOS					C	A		F							
Approach Delay					21.5			138.7							
Approach LOS					C			F							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 79.4	Intersection LOS: E
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street

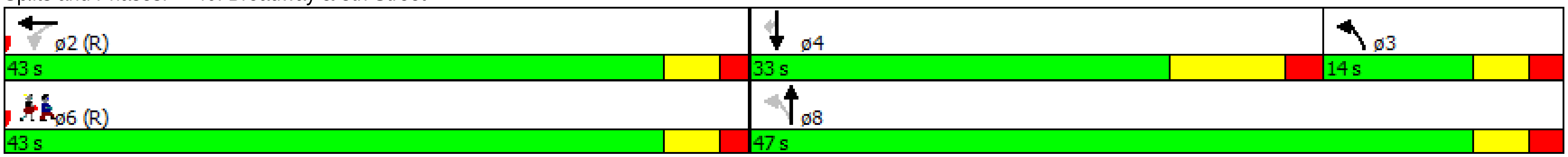


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	415	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.722					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2300	0	0	1616	931	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					17							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	451	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2			8					4	
Total Split (s)				43.0	43.0		14.0	47.0			33.0	33.0	43.0
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					38.0			41.7			24.2	24.2	
Actuated g/C Ratio					0.42			0.46			0.27	0.27	
v/c Ratio					0.53			0.66			1.04	0.24	
Control Delay					36.5			31.0			104.4	27.2	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					36.5			31.0			104.4	27.2	
LOS					D			C			F	C	
Approach Delay					36.5			31.0			93.5		
Approach LOS					D			C			F		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 46.7 Intersection LOS: D
Intersection Capacity Utilization 80.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 40: Broadway & 8th Street

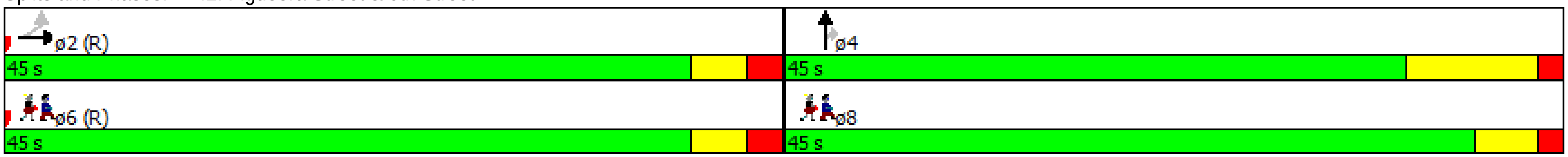


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	45.0	45.0						45.0	45.0				45.0	45.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	39.6	39.6						35.8	35.8					
Actuated g/C Ratio	0.44	0.44						0.40	0.40					
v/c Ratio	0.35	0.51						0.81	0.30					
Control Delay	12.4	17.9						34.8	26.0					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	12.4	17.9						34.8	26.0					
LOS	B	B						C	C					
Approach Delay		17.1						33.8						
Approach LOS		B						C						

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

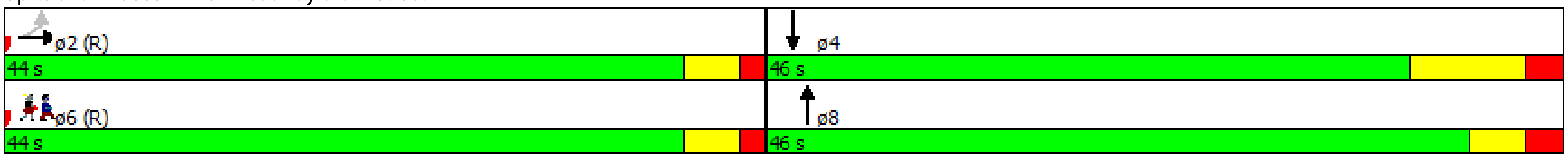


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	516	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	561	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.84		
Control Delay	11.6	15.0						14.2			16.7		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.6	15.6						14.2			16.7		
LOS	B	B						B			B		
Approach Delay		15.0						14.2			16.7		
Approach LOS		B						B			B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 15.1	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 48: Broadway & 9th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.8	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.8	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

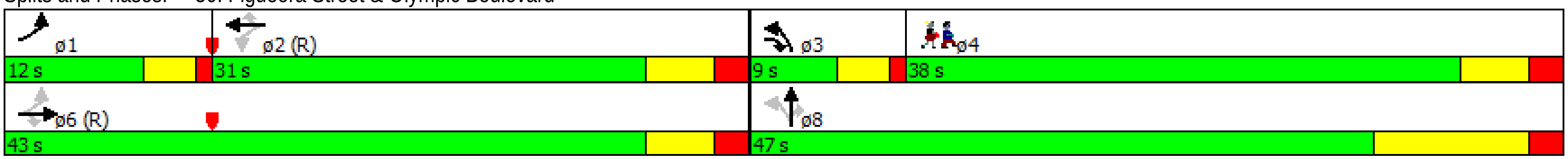
Maximum v/c Ratio: 1.17

Intersection Signal Delay: 47.6 Intersection LOS: D

Intersection Capacity Utilization 84.6% ICU Level of Service E

Analysis Period (min) 15

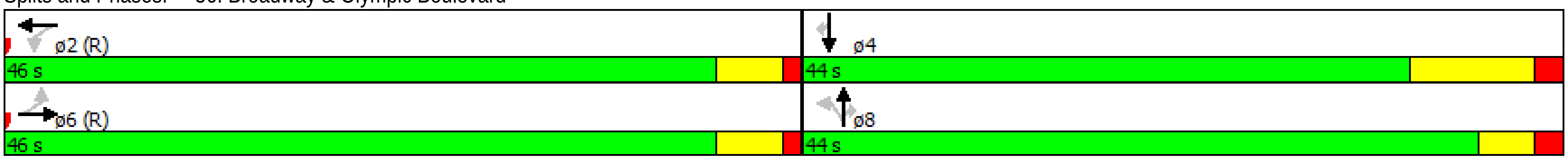
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	478	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3030	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.369			0.287				0.865				
Satd. Flow (perm)	585	3030	0	443	3067	0	0	2749	1252	0	1616	1196
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			22				70			64
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	520	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	46.0	46.0		46.0	46.0		44.0	44.0	44.0		44.0	44.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	41.0	41.0		41.0	41.0			39.0	39.0		35.0	35.0
Actuated g/C Ratio	0.46	0.46		0.46	0.46			0.43	0.43		0.39	0.39
v/c Ratio	0.28	0.54		0.41	0.43			0.54	0.13		0.83	0.25
Control Delay	13.1	13.6		32.8	26.3			11.2	1.5		35.2	13.8
Queue Delay	0.0	0.5		0.0	3.5			0.0	0.0		0.0	0.0
Total Delay	13.1	14.0		32.8	29.8			11.2	1.5		35.2	13.8
LOS	B	B		C	C			B	A		D	B
Approach Delay		14.0			30.2			10.1			30.9	
Approach LOS		B			C			B			C	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

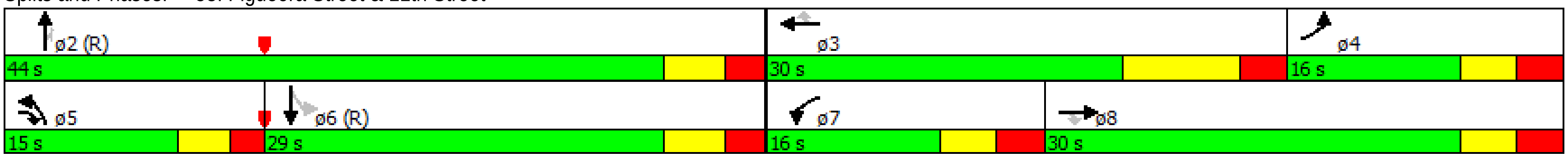


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	86.3	31.2	25.1	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	86.3	31.2	25.1	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

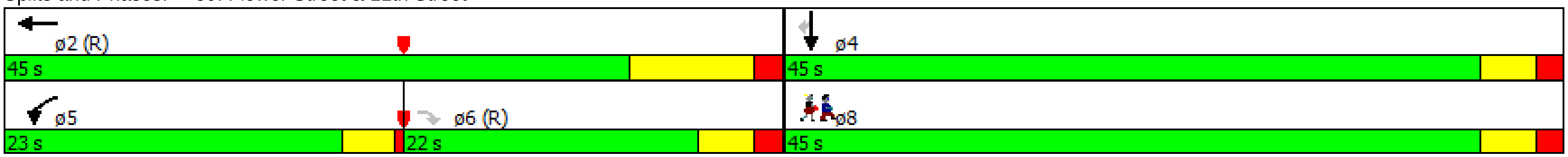


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	32.1	21.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	32.1	21.5						12.4	4.2	
LOS			A	C	C						B	A	
Approach Delay					22.9						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street

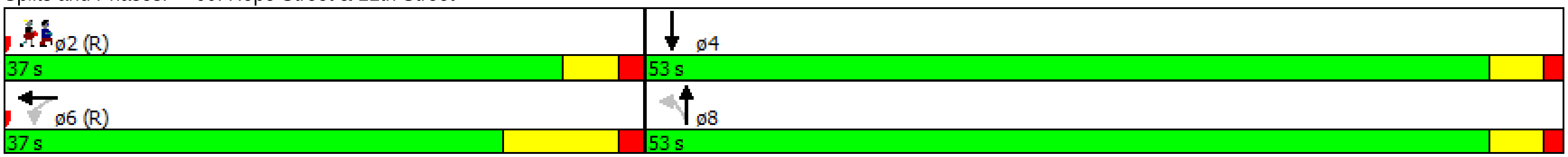


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.896					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2851	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					38						42		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				37.0	37.0		53.0	53.0			53.0		37.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					28.7			48.6			48.6		
Actuated g/C Ratio					0.32			0.54			0.54		
v/c Ratio					0.67			0.16			0.22		
Control Delay					49.6			10.8			9.9		
Queue Delay					0.0			0.0			0.0		
Total Delay					49.6			10.8			9.9		
LOS					D			B			A		
Approach Delay					49.6			10.8			9.9		
Approach LOS					D			B			A		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 30.8 | Intersection LOS: C
Intersection Capacity Utilization 58.3% | ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

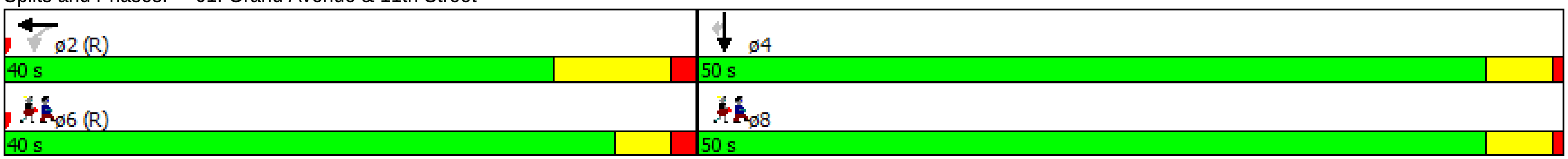


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				18.0	19.1						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				18.0	19.1						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.9						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Grand Avenue & 11th Street

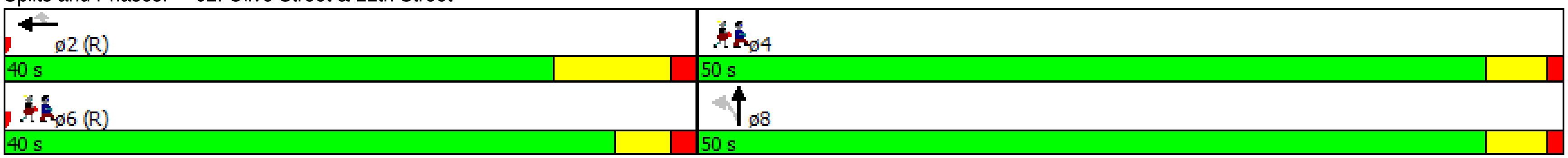


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					24.8	15.3		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					24.8	15.3		14.7						
LOS					C	B		B						
Approach Delay					23.1			14.7						
Approach LOS					C			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.219						
Satd. Flow (perm)	0	0	0	1593	3134	0	367	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					17							60	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				44.0	44.0		46.0	46.0			46.0	46.0	44.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				37.5	37.5		43.0	43.0			43.0	43.0	
Actuated g/C Ratio				0.42	0.42		0.48	0.48			0.48	0.48	
v/c Ratio				0.14	0.57		0.12	0.37			0.58	0.10	
Control Delay				29.9	36.3		15.3	15.8			31.1	16.6	
Queue Delay				0.0	6.6		0.0	0.0			0.0	0.0	
Total Delay				29.9	42.9		15.3	15.8			31.1	16.6	
LOS				C	D		B	B			C	B	
Approach Delay					41.5			15.8			30.0		
Approach LOS					D			B			C		

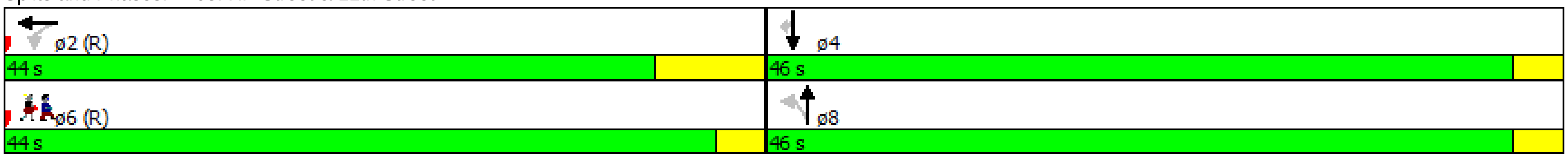
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.58

Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B

Analysis Period (min) 15

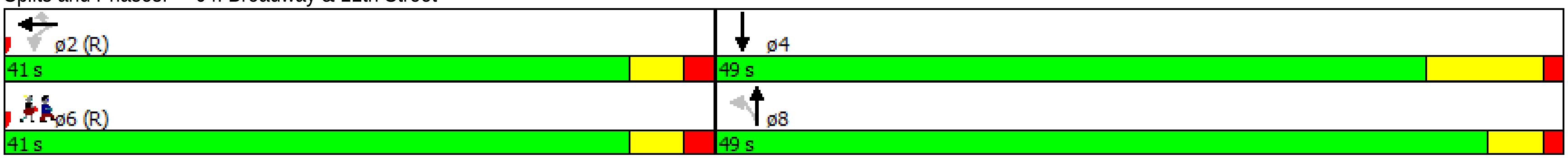
Splits and Phases: 63: Hill Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1556	0	
Flt Permitted					0.997		0.127						
Satd. Flow (perm)	0	0	0	0	3093	998	213	3185	0	0	1556	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61					10		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	778	0	
Turn Type				Perm	NA	Perm	Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8						
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0		41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0		
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0		
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46		
v/c Ratio					0.48	0.12	0.67	0.45			1.09		
Control Delay					13.9	1.8	52.4	16.0			80.8		
Queue Delay					0.4	0.0	13.3	0.0			5.7		
Total Delay					14.3	1.8	65.7	16.0			86.5		
LOS					B	A	E	B			F		
Approach Delay					13.3			20.4			86.5		
Approach LOS					B			C			F		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 41.6	Intersection LOS: D
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

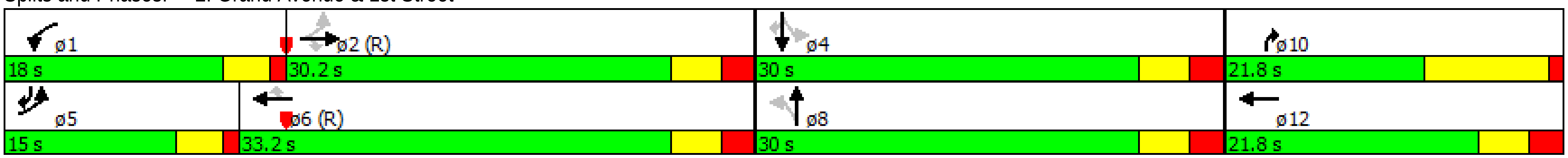


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 39.2 Intersection LOS: D
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.6	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.6	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.35	0.75	0.14	0.71	0.54		0.30	0.99	0.35
Control Delay	57.1	36.9	0.1	33.8	35.2	3.9	46.3	37.8		16.3	64.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.0		0.2	0.0	0.2
Total Delay	57.1	55.8	0.1	33.8	35.2	3.9	67.8	37.8		16.5	64.0	2.8
LOS	E	E	A	C	D	A	E	D		B	E	A
Approach Delay		54.7			32.4			42.5			51.4	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

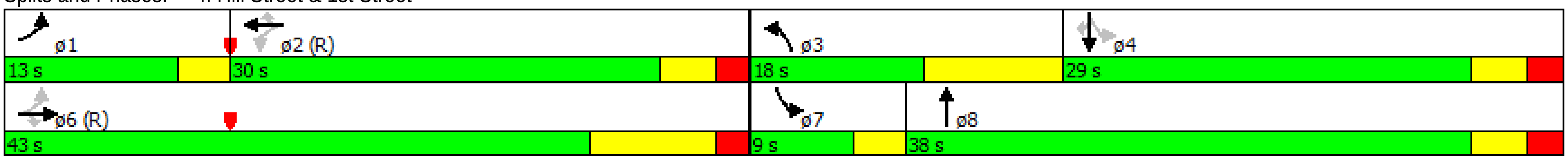
Maximum v/c Ratio: 0.99

Intersection Signal Delay: 47.1 Intersection LOS: D

Intersection Capacity Utilization 92.1% ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	39.9	29.2		44.3	25.8	
Queue Delay	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.4	6.2	15.0	13.9	4.1	39.9	29.2		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.3			13.0			30.1			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 24.4	Intersection LOS: C
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

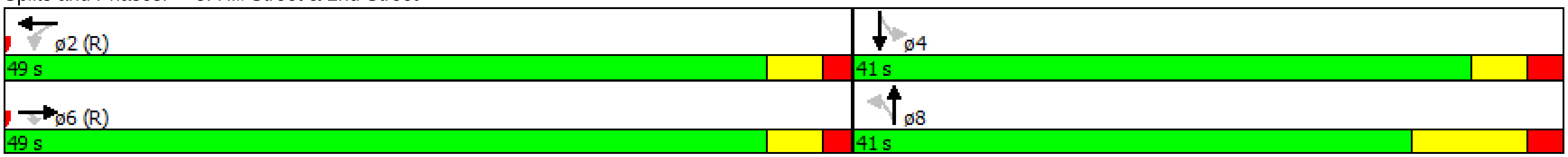
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		11.4		120.9	18.1		7.7	16.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		11.4		120.9	18.1		7.7	16.6	
LOS		B	A		B		F	B		A	B	
Approach Delay		12.7			11.4			28.7			16.3	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Hill Street & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	33	233	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1606	1374
Flt Permitted							0.505				0.861	
Satd. Flow (perm)	0	1676	1013	0	1676	1346	847	2945	0	0	1373	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		52				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	289	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8			4		4
Total Split (s)		45.6	45.6		45.6	45.6	10.4	44.4		34.0	34.0	34.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		45.7	45.7		45.7	45.7	35.1	33.9			21.9	21.9
Actuated g/C Ratio		0.51	0.51		0.51	0.51	0.39	0.38			0.24	0.24
v/c Ratio		0.71	0.14		0.59	0.06	0.30	0.33			0.87	0.13
Control Delay		20.1	0.6		8.0	0.3	16.5	15.6			55.3	4.0
Queue Delay		0.0	0.0		1.1	0.0	0.0	0.0			0.0	0.0
Total Delay		20.1	0.6		9.1	0.3	16.5	15.6			55.3	4.0
LOS		C	A		A	A	B	B			E	A
Approach Delay		17.8			8.4			15.8			48.2	
Approach LOS		B			A			B			D	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Control Type: Actuated-Coordinated

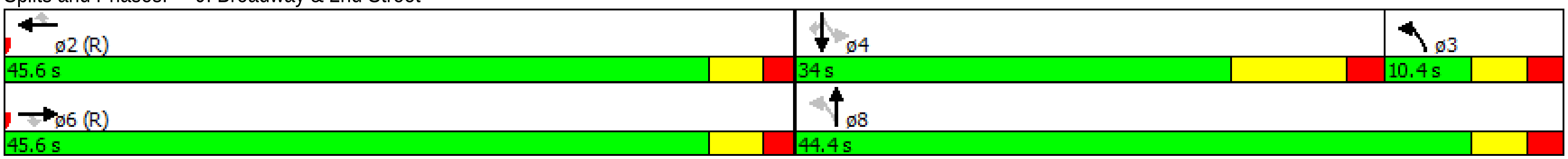
Maximum v/c Ratio: 0.87

Intersection Signal Delay: 19.8 Intersection LOS: B

Intersection Capacity Utilization 77.6% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.2	27.7		101.1	39.7			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.2	27.7		101.1	39.7			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.8			46.8			54.2		
Approach LOS					C			D			D		

Intersection Summary

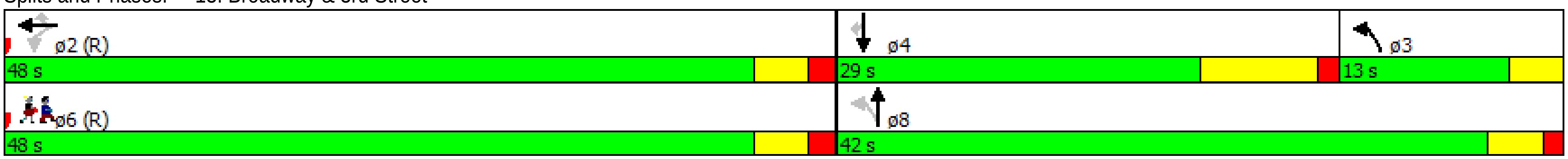
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	223	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.789					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2392	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						79	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	242	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.60			0.40	0.23	
Control Delay				12.6	29.2	5.3		8.1			24.7	11.8	
Queue Delay				0.0	28.9	0.0		0.2			0.0	0.1	
Total Delay				12.6	58.1	5.3		8.3			24.7	11.9	
LOS				B	E	A		A			C	B	
Approach Delay					53.6			8.3			21.1		
Approach LOS					D			A			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

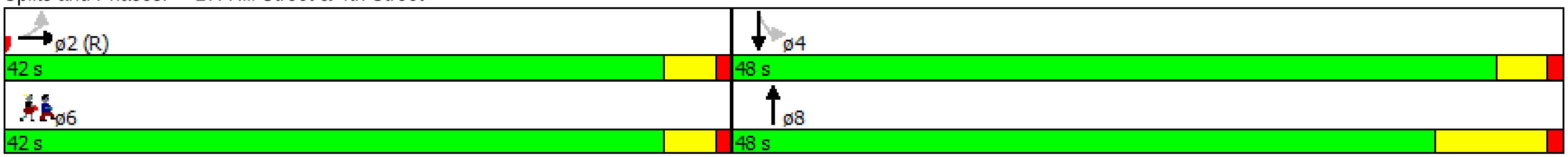


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						12.4		5.1	2.8		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.4		5.1	2.8		
LOS		B						B		A	A		
Approach Delay		17.3						12.4			3.1		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

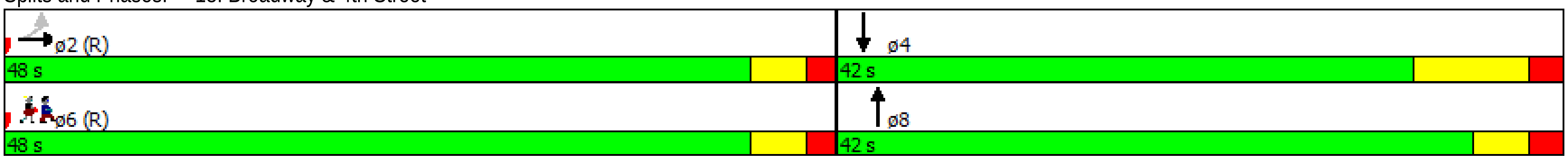


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	314	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	341	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.57		
Control Delay		7.0						21.7			29.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.0						21.7			29.9		
LOS		A						C			C		
Approach Delay		7.0						21.7			29.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 53.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5335	0	1593	3185	0	0	4249	0	
Flt Permitted				0.950			0.235						
Satd. Flow (perm)	0	0	0	993	5335	0	371	3185	0	0	4249	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					53						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.27	0.55		0.40	0.43			0.43		
Control Delay				9.1	8.0		23.0	15.0			23.5		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				9.1	8.0		23.0	15.0			23.5		
LOS				A	A		C	B			C		
Approach Delay					8.1			15.8			23.5		
Approach LOS					A			B			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green

Control Type: Pretimed

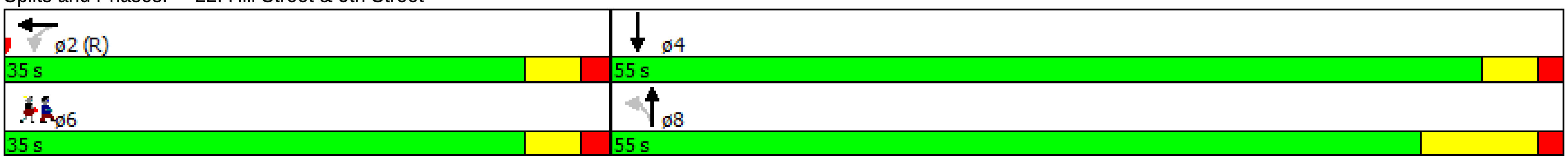
Maximum v/c Ratio: 0.55

Intersection Signal Delay: 15.6 Intersection LOS: B

Intersection Capacity Utilization 61.8% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 22: Hill Street & 5th Street

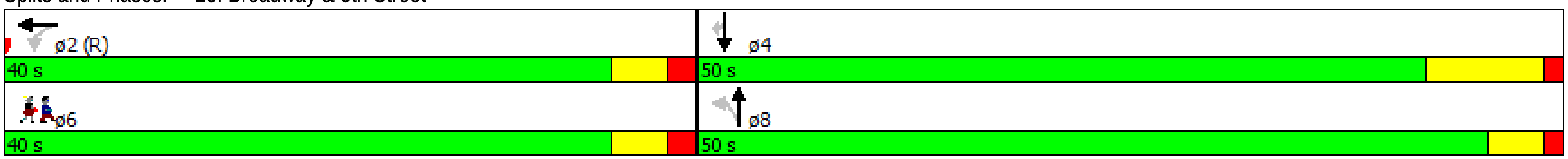


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	326	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.889					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2832	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	354	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.35			0.47	0.14	
Control Delay					11.1			16.9			30.0	18.9	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			16.9			30.0	18.9	
LOS					B			B			C	B	
Approach Delay					11.1			16.9			28.3		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 63.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Broadway & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	803	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.32		
Control Delay		6.7						6.5	3.7	7.4	4.9		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.7						6.5	3.7	7.4	4.9		
LOS		A						A	A	A	A		
Approach Delay		6.7						6.2			5.2		
Approach LOS		A						A			A		

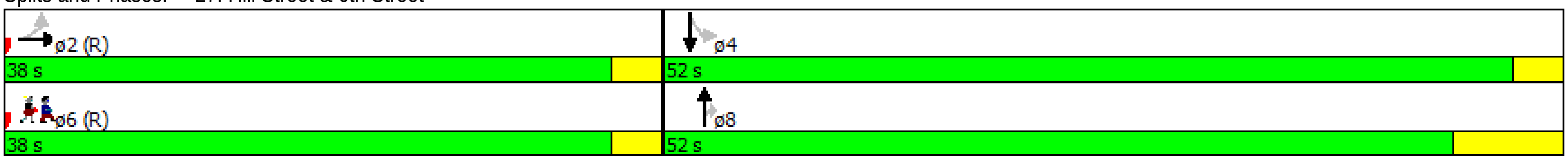
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55

Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 61.8%	ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

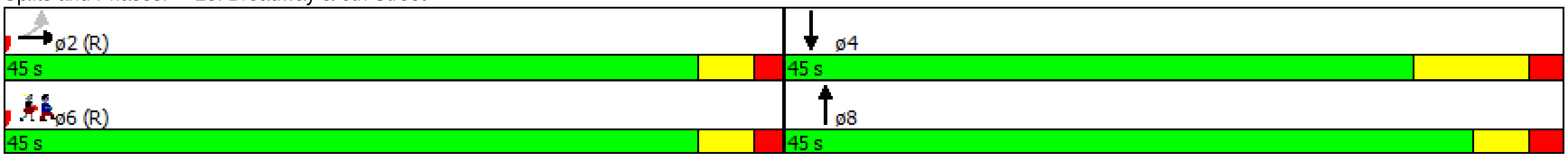


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	365	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	397	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.61		
Control Delay		6.2						23.9			24.9		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.2						23.9			24.9		
LOS		A						C			C		
Approach Delay		6.2						23.9			24.9		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 53.0% ICU Level of Service A
Analysis Period (min) 15

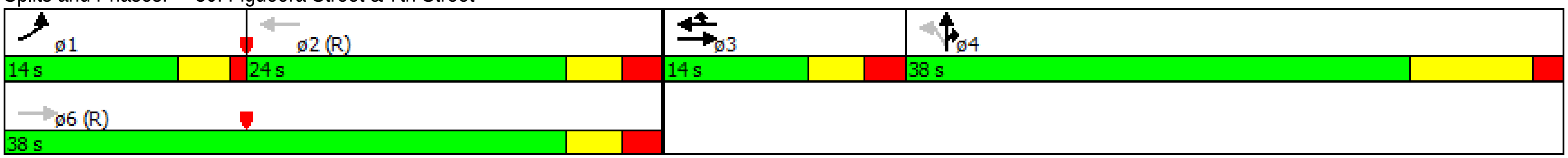
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

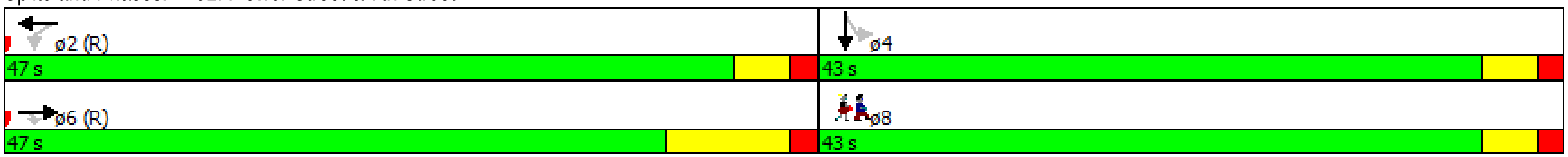


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Flower Street & 7th Street

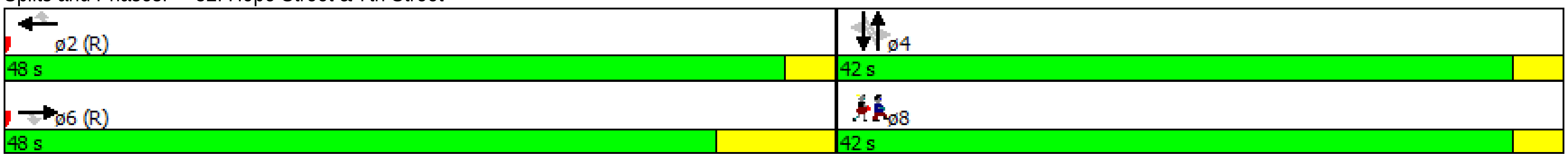


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.5		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.5		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.3			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 32: Hope Street & 7th Street

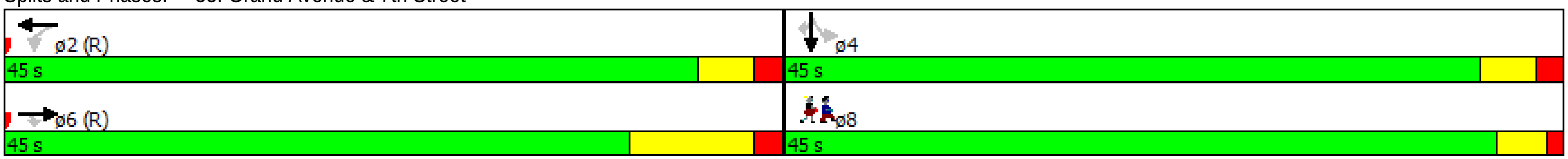


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	6.5	10.0					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	6.5	10.4					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			10.1						49.7		
Approach LOS		C			B						D		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: Grand Avenue & 7th Street

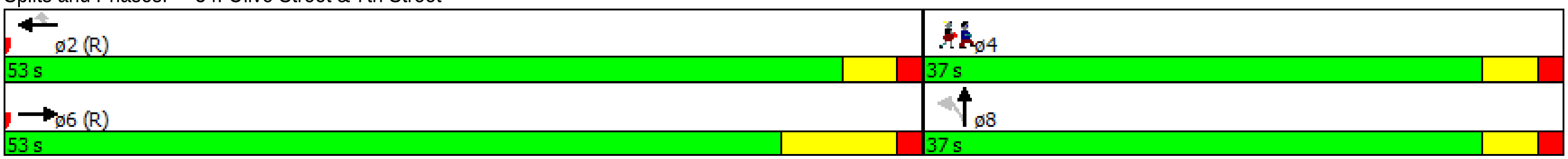


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.4			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 34: Olive Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	60.7	18.2		25.7			33.4	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	60.8	18.2		25.8			34.0	
LOS	C	C	A	C	E	B		C			C	
Approach Delay		21.9			51.6			25.8			34.0	
Approach LOS		C			D			C			C	

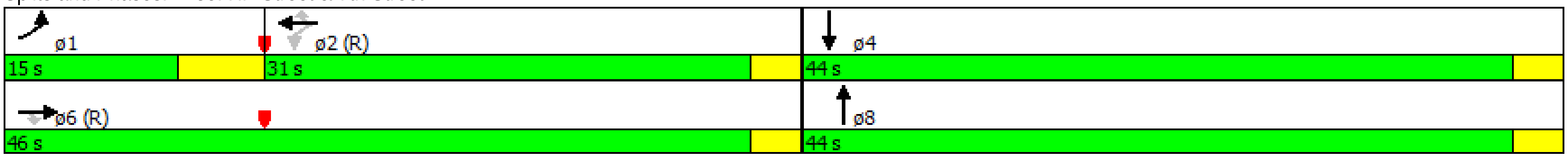
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88

Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 75.7%	ICU Level of Service D

Analysis Period (min) 15

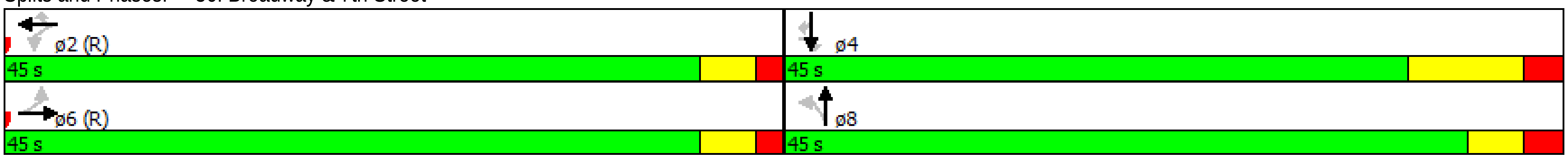
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱		↰↑↱			↑	↱
Volume (vph)	24	391	36	11	411	56	9	607	55	0	444	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.947				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2877	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	483	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.75	0.38
Control Delay	16.8	26.7	8.3	15.3	27.4	11.2		18.2			18.5	9.9
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.7	11.2		18.6			18.5	10.3
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.2			18.6			16.7	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

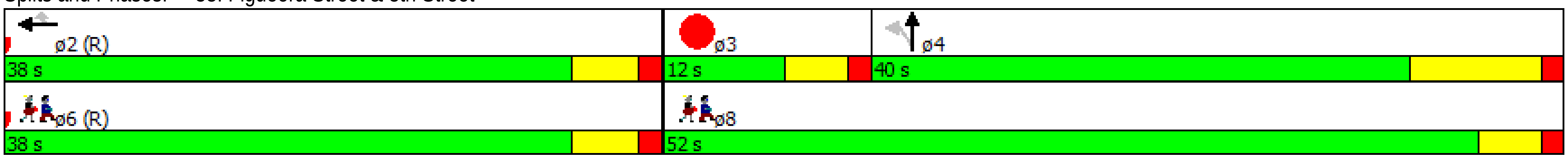


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

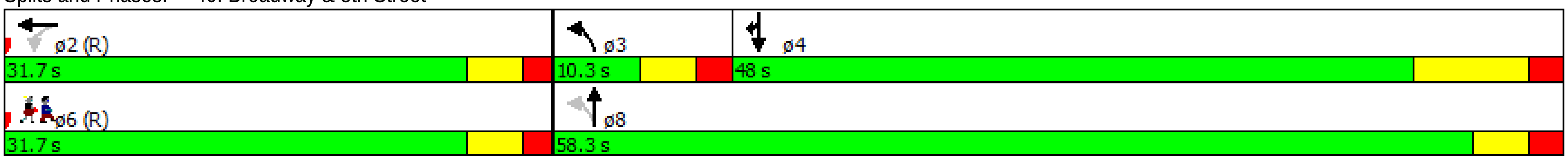
Splits and Phases: 38: Figueora Street & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	415	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.775					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2469	0	0	1616	1374	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					14							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	451	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Prot	
Protected Phases					2		3	8			4	4	6
Permitted Phases				2			8						
Total Split (s)				31.7	31.7		10.3	58.3			48.0	48.0	31.7
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					26.7			53.0			39.2	39.2	
Actuated g/C Ratio					0.30			0.59			0.44	0.44	
v/c Ratio					0.75			0.51			0.64	0.11	
Control Delay					41.0			19.7			29.1	10.5	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					41.0			19.7			29.1	10.5	
LOS					D			B			C	B	
Approach Delay					41.0			19.7			26.5		
Approach LOS					D			B			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 31.5	Intersection LOS: C
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 40: Broadway & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

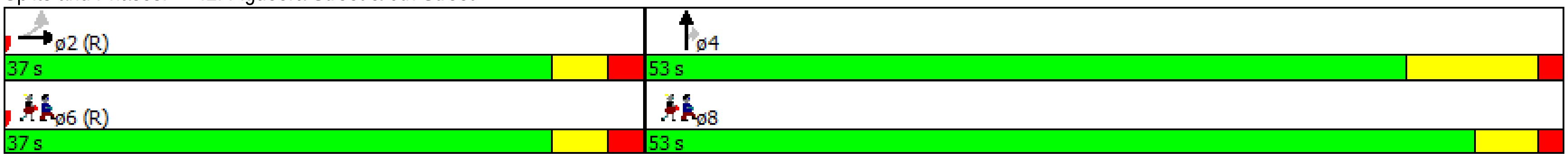
Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 42: Figueora Street & 9th Street

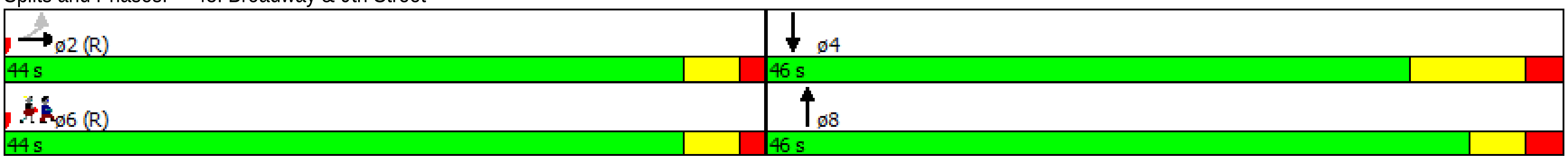


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	516	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	561	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.84		
Control Delay	11.3	14.6						14.6			25.3		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.3	15.2						14.6			25.3		
LOS	B	B						B			C		
Approach Delay		14.7						14.6			25.3		
Approach LOS		B						B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 67.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street

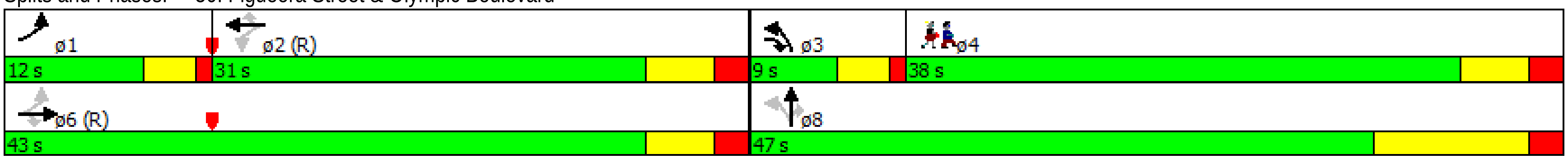


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15

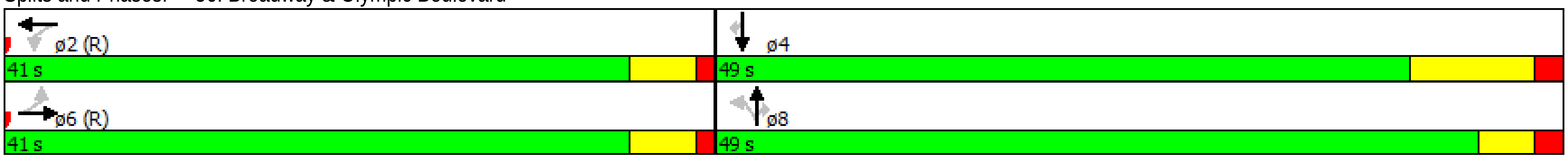
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	478	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3071	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.348			0.261				0.894				
Satd. Flow (perm)	553	3071	0	418	3067	0	0	2840	1253	0	1616	1197
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20				47			71
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	520	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0	49.0		49.0	49.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	36.0	36.0		36.0	36.0			44.0	44.0		40.0	40.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.49	0.49		0.44	0.44
v/c Ratio	0.33	0.61		0.50	0.48			0.46	0.12		0.72	0.22
Control Delay	24.9	26.0		37.2	27.1			9.3	2.7		25.3	9.3
Queue Delay	0.0	0.7		0.0	3.6			0.0	0.0		0.0	0.0
Total Delay	24.9	26.7		37.2	30.7			9.3	2.7		25.3	9.3
LOS	C	C		D	C			A	A		C	A
Approach Delay		26.6			31.5			8.6			22.1	
Approach LOS		C			C			A			C	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 22.2	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

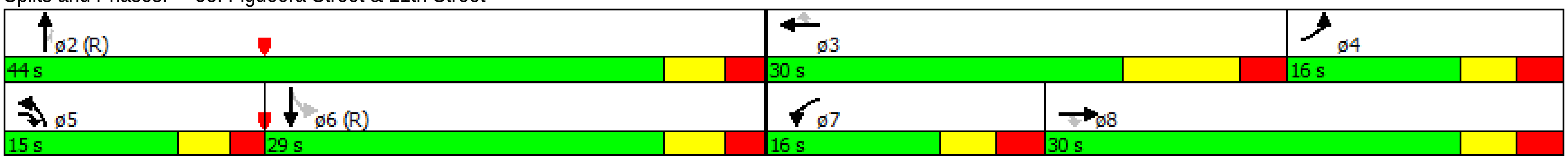


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 76.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green

Control Type: Actuated-Coordinated

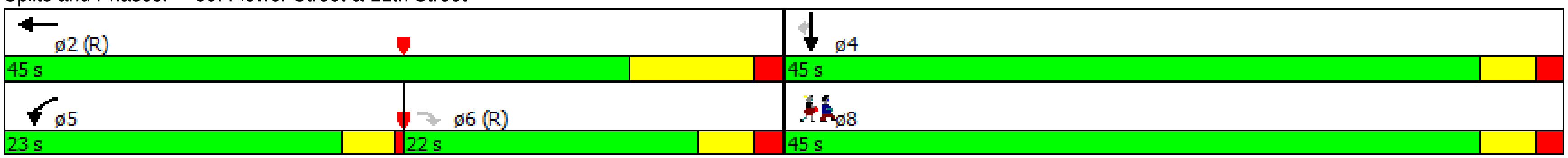
Maximum v/c Ratio: 0.56

Intersection Signal Delay: 14.1 Intersection LOS: B

Intersection Capacity Utilization 51.9% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 59: Flower Street & 11th Street

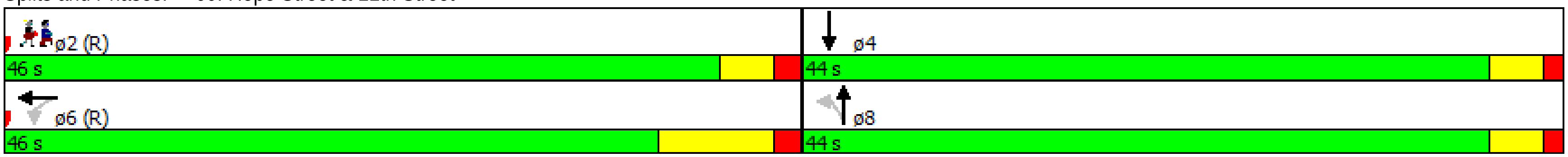


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 27.2 Intersection LOS: C
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

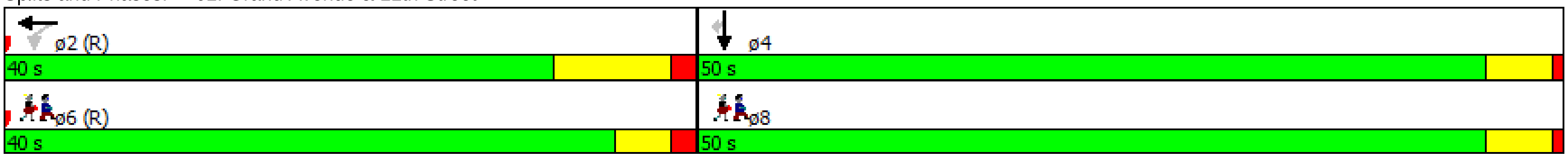


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.9	19.0						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.9	19.0						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.7						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Grand Avenue & 11th Street

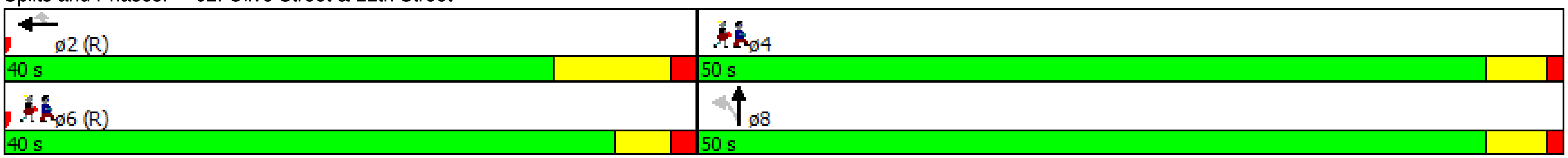


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					21.5	12.9		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					21.5	12.9		14.7						
LOS					C	B		B						
Approach Delay					19.9			14.7						
Approach LOS					B			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.191						
Satd. Flow (perm)	0	0	0	1593	3134	0	320	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					19							54	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.51		0.16	0.42			0.66	0.12	
Control Delay				20.8	24.2		19.8	19.5			35.3	19.5	
Queue Delay				0.0	1.5		0.0	0.0			0.0	0.0	
Total Delay				20.8	25.7		19.8	19.5			35.3	19.5	
LOS				C	C		B	B			D	B	
Approach Delay					25.1			19.5			34.1		
Approach LOS					C			B			C		

Intersection Summary	
Area Type:	CBD

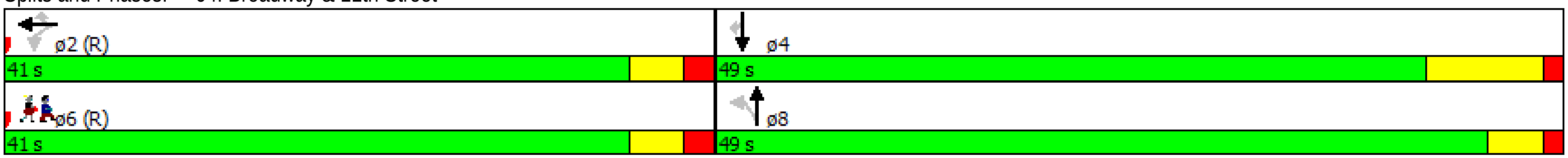
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 27.3	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 63: Hill Street & 11th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.205						
Satd. Flow (perm)	0	0	0	0	3093	998	344	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61						42	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	683	95	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.12	0.41	0.45			0.93	0.18	
Control Delay					13.9	1.8	23.8	16.0			34.7	8.7	
Queue Delay					0.4	0.0	0.3	0.0			0.0	0.0	
Total Delay					14.3	1.8	24.1	16.0			34.7	8.8	
LOS					B	A	C	B			C	A	
Approach Delay					13.3			16.7			31.6		
Approach LOS					B			B			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

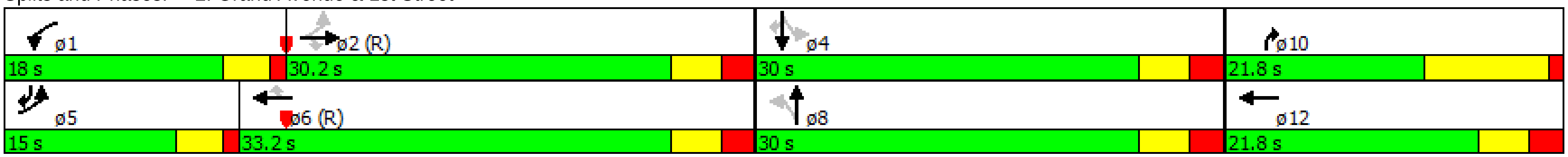


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.6	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.6	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

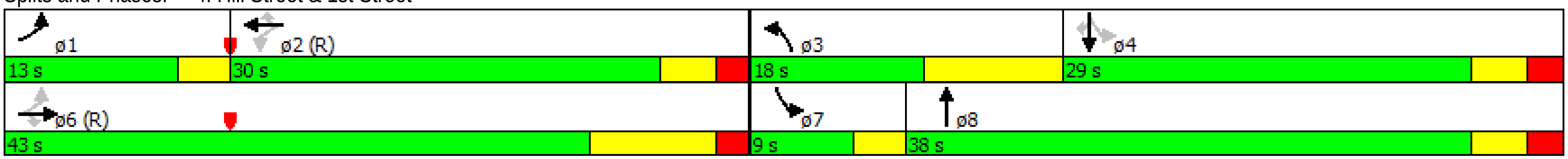
Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	33	607	61	110	557	43	84	779	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1441	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	36	660	66	120	652	0	91	847	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.35	0.75	0.14	0.71	0.54		0.30	0.99	0.35
Control Delay	57.1	36.9	0.1	33.8	35.1	3.8	46.3	37.8		16.3	64.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.0		0.2	0.0	0.2
Total Delay	57.1	55.8	0.1	33.8	35.1	3.8	67.8	37.8		16.5	64.0	2.8
LOS	E	E	A	C	D	A	E	D		B	E	A
Approach Delay		54.7			32.3			42.4			51.4	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 47.1 Intersection LOS: D
Intersection Capacity Utilization 92.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1031	70	43	672	75	58	539	121	77	401	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	4282	0	1593	2932	0
Flt Permitted	0.241			0.254			0.284			0.286		
Satd. Flow (perm)	382	3185	1071	404	3185	1050	457	4282	0	450	2932	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			76			82		32			73	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1121	76	47	730	82	63	718	0	84	615	0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6	2		2	8			4		
Total Split (s)	20.0	57.0	57.0	37.0	37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2	3.7	3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8	38.1	38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55	0.42	0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.64	0.12	0.28	0.54	0.17	0.43	0.51		0.58	0.62	
Control Delay	18.7	22.3	6.2	15.0	13.9	4.1	36.2	25.0		44.3	25.8	
Queue Delay	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	29.4	6.2	15.0	13.9	4.1	36.2	25.0		44.3	25.8	
LOS	B	C	A	B	B	A	D	C		D	C	
Approach Delay		26.3			13.0			25.9			28.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 23.5 | Intersection LOS: C
Intersection Capacity Utilization 84.2% | ICU Level of Service E
Analysis Period (min) 15

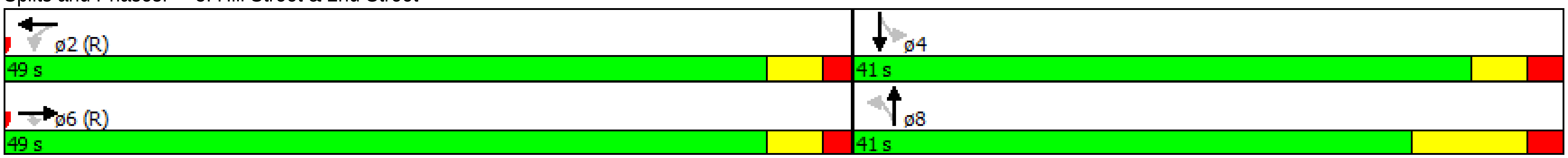
Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	297	12	79	649	43	31	862	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3155	0	1593	3140	0	1593	3163	0
Flt Permitted							0.146			0.290		
Satd. Flow (perm)	0	3185	1340	0	3155	0	243	3140	0	476	3163	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		6			8			5	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	336	0	86	752	0	34	971	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.22		1.00	0.67		0.18	0.77	
Control Delay		14.2	9.1		9.2		120.9	18.2		7.7	16.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.2	9.1		9.2		120.9	18.2		7.7	16.7	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			9.2			28.7			16.4	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 8: Hill Street & 2nd Street

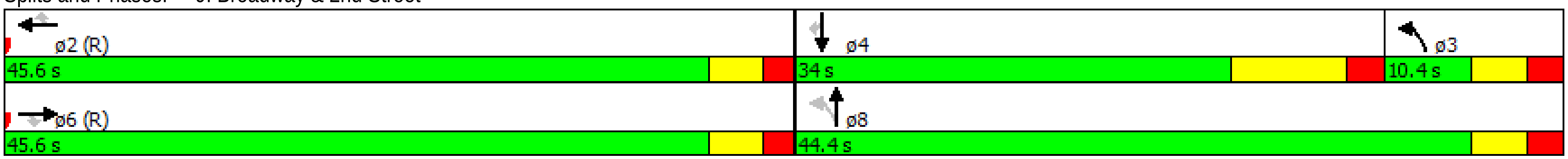


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	557	75	0	458	39	105	273	78	0	153	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		1	0		1	1		0	0		1
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	1425	0	1676	1425	1593	2945	0	0	1616	1374
Flt Permitted							0.652					
Satd. Flow (perm)	0	1676	1013	0	1676	1346	1093	2945	0	0	1616	1212
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			137		52				90
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	605	82	0	498	42	114	382	0	0	166	46
Turn Type		NA	Perm		NA	Perm	pm+pt	NA			NA	Perm
Protected Phases		6			2		3	8			4	
Permitted Phases			6			2	8					4
Total Split (s)		45.6	45.6		45.6	45.6	10.4	44.4			34.0	34.0
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.4	5.4			8.9	8.9
Act Effct Green (s)		52.3	52.3		52.3	52.3	28.4	27.3			15.0	15.0
Actuated g/C Ratio		0.58	0.58		0.58	0.58	0.32	0.30			0.17	0.17
v/c Ratio		0.62	0.13		0.51	0.05	0.30	0.41			0.61	0.17
Control Delay		12.9	0.4		3.0	0.1	28.9	29.0			58.8	10.3
Queue Delay		0.0	0.0		0.5	0.0	0.0	0.0			0.0	0.0
Total Delay		12.9	0.4		3.5	0.1	28.9	29.0			58.8	10.3
LOS		B	A		A	A	C	C			E	B
Approach Delay		11.4			3.3			29.0			48.3	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	95	1368	165	56	431	0	0	1054	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	103	1666	0	61	468	0	0	1146	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.13	0.95		0.82	0.45			0.98	0.49	
Control Delay				12.1	27.5		101.1	39.7			57.9	34.2	
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay				12.1	27.5		101.1	39.7			57.9	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					26.6			46.8			54.2		
Approach LOS					C			D			D		

Intersection Summary

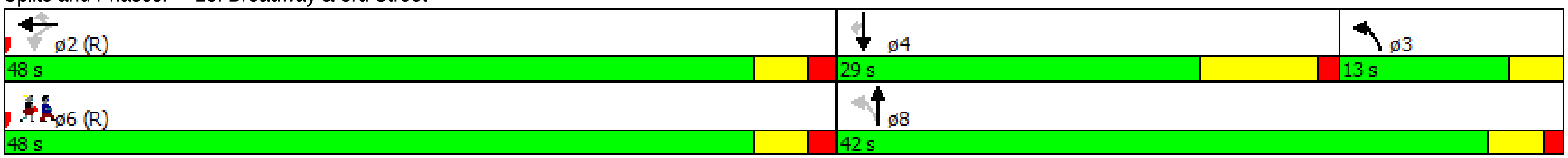
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.8	Intersection LOS: D
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	1174	78	133	418	0	0	143	85	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	1		1	0		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3185	1425	0	3147	0	0	1616	1374	
Flt Permitted				0.950				0.824					
Satd. Flow (perm)	0	0	0	1012	3185	1153	0	2467	0	0	1616	940	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						115						92	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	41	1276	85	0	599	0	0	155	92	
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	Perm	
Protected Phases					2		3	8			4		6
Permitted Phases				2		2	8					4	
Total Split (s)				48.0	48.0	48.0	13.0	42.0			29.0	29.0	48.0
Total Lost Time (s)				4.8	4.8	4.8		4.5			8.0	8.0	
Act Effct Green (s)				43.2	43.2	43.2		37.5			34.0	34.0	
Actuated g/C Ratio				0.48	0.48	0.48		0.42			0.38	0.38	
v/c Ratio				0.08	0.84	0.14		0.58			0.25	0.22	
Control Delay				12.8	29.3	5.3		7.8			12.0	3.2	
Queue Delay				0.0	28.9	0.0		0.1			0.0	0.1	
Total Delay				12.8	58.2	5.3		8.0			12.0	3.3	
LOS				B	E	A		A			B	A	
Approach Delay					53.7			8.0			8.7		
Approach LOS					D			A			A		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 13: Broadway & 3rd Street

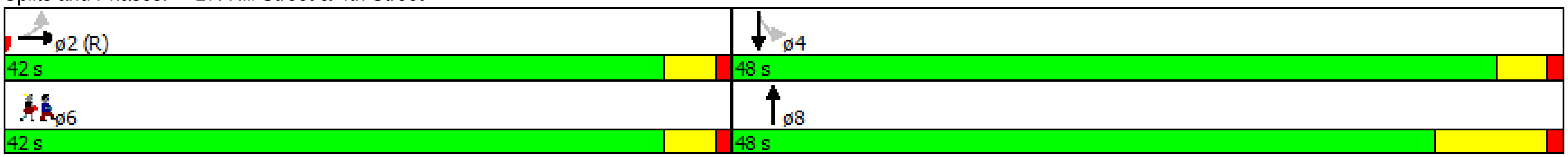


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	87	869	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	95	945	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.45	0.61		
Control Delay		17.3						12.4		5.1	2.7		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.4		5.1	2.7		
LOS		B						B		A	A		
Approach Delay		17.3						12.4			2.9		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

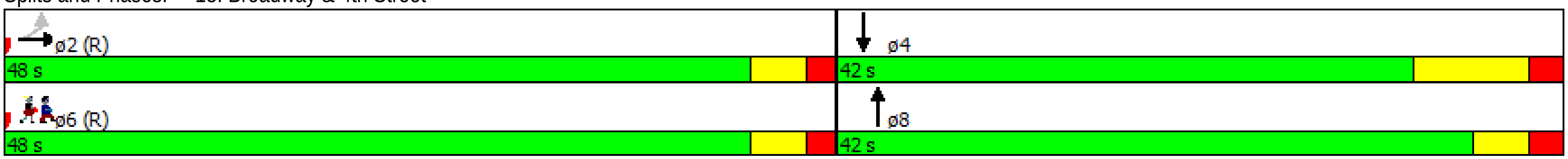


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1232	71	0	0	0	0	415	157	0	234	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5546	0	0	0	0	0	2737	0	0	1616	0	
Flt Permitted		0.995											
Satd. Flow (perm)	0	5375	0	0	0	0	0	2737	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		16						5					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1564	0	0	0	0	0	622	0	0	254	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.61						0.56			0.43		
Control Delay		7.0						21.7			27.6		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.0						21.7			27.6		
LOS		A						C			C		
Approach Delay		7.0						21.7			27.6		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Broadway & 4th Street

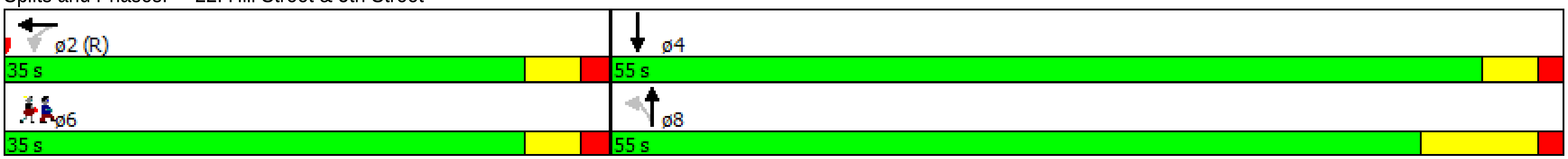


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	83	779	136	71	657	0	0	792	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5335	0	1593	3185	0	0	4249	0	
Flt Permitted				0.950			0.235						
Satd. Flow (perm)	0	0	0	993	5335	0	371	3185	0	0	4249	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					53						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	90	995	0	77	714	0	0	1024	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.27	0.55		0.40	0.43			0.43		
Control Delay				9.1	8.0		22.9	15.0			23.5		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				9.1	8.0		22.9	15.0			23.5		
LOS				A	A		C	B			C		
Approach Delay					8.1			15.8			23.5		
Approach LOS					A			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 15.6 Intersection LOS: B
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 22: Hill Street & 5th Street

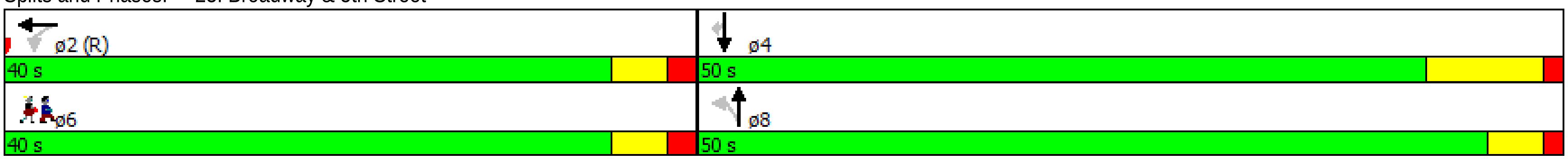


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	39	862	61	43	412	0	0	246	59	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5586	0	0	3169	0	0	1616	1374	
Flt Permitted					0.998			0.900					
Satd. Flow (perm)	0	0	0	0	5468	0	0	2867	0	0	1616	960	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					18							24	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1045	0	0	495	0	0	267	64	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				40.0	40.0		50.0	50.0			50.0	50.0	40.0
Total Lost Time (s)					5.0			4.5			8.0	8.0	
Act Effct Green (s)					35.0			45.5			42.0	42.0	
Actuated g/C Ratio					0.39			0.51			0.47	0.47	
v/c Ratio					0.49			0.34			0.35	0.14	
Control Delay					11.1			16.8			28.5	20.2	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					11.1			16.8			28.5	20.2	
LOS					B			B			C	C	
Approach Delay					11.1			16.8			26.9		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 52 (58%), Referenced to phase 2:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 23: Broadway & 5th Street

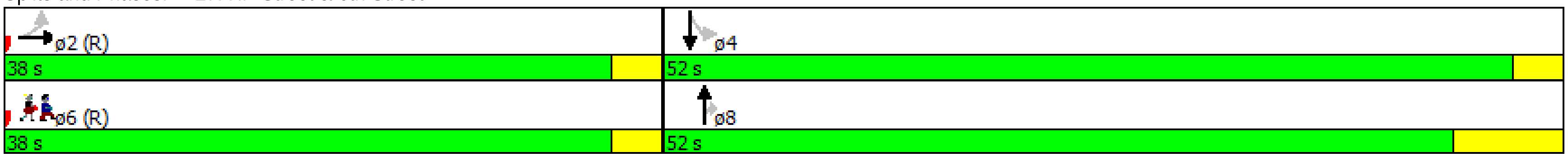


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	739	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	803	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.32		
Control Delay		6.7						6.5	3.8	7.4	4.9		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.7						6.5	3.8	7.4	4.9		
LOS		A						A	A	A	A		
Approach Delay		6.7						6.2			5.2		
Approach LOS		A						A			A		

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 6.1 Intersection LOS: A
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

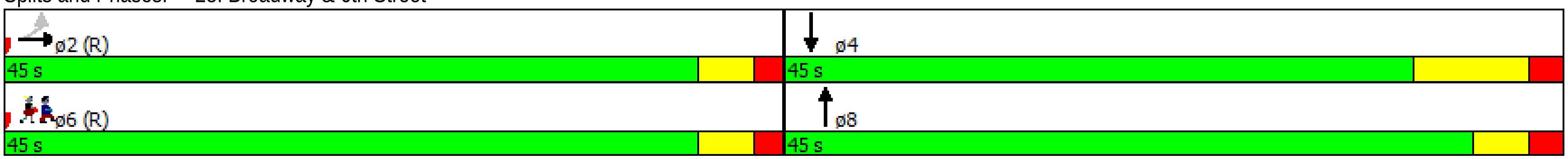


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	927	114	0	0	0	0	362	93	0	285	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5350	0	0	0	0	0	2848	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5148	0	0	0	0	0	2848	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		36						9					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	494	0	0	310	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.55						0.39			0.48		
Control Delay		6.2						23.8			23.0		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.2						23.8			23.0		
LOS		A						C			C		
Approach Delay		6.2						23.8			23.0		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15

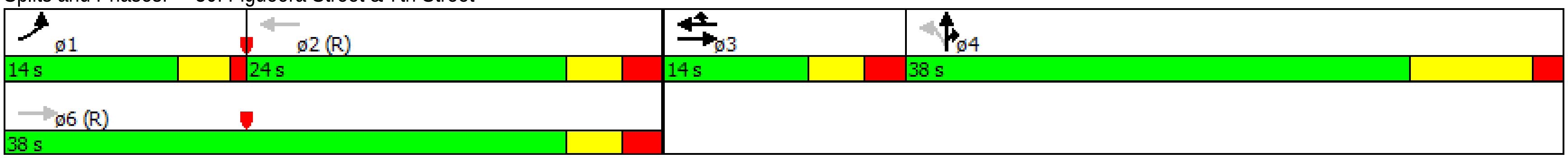
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

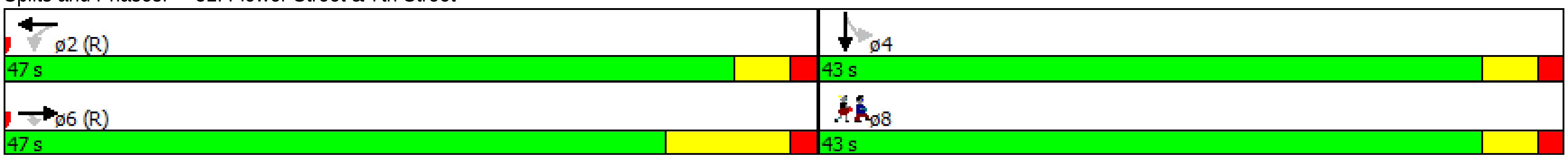


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.6						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.6						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.6						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Flower Street & 7th Street

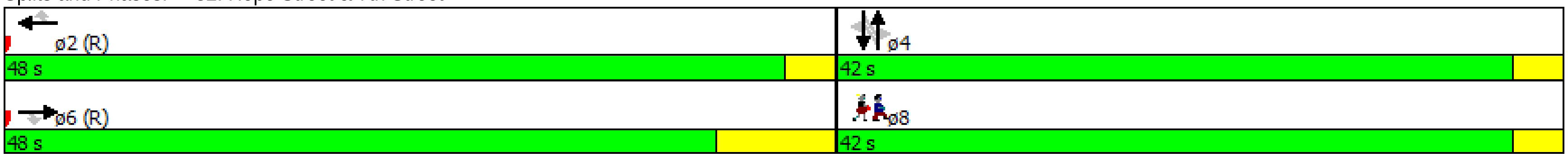


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.5		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.5		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.3			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 62.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: Hope Street & 7th Street

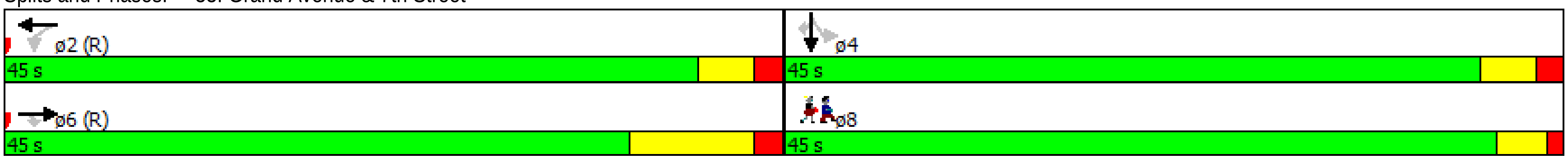


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	6.5	10.1					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	6.5	10.4					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			10.1						49.7		
Approach LOS		C			B						D		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 37.6 Intersection LOS: D
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 33: Grand Avenue & 7th Street

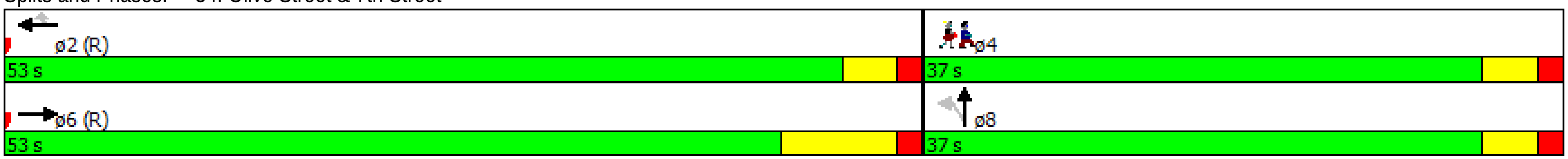


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			22.6	18.5	21.1	21.8					
Queue Delay		0.2			3.7	0.0	0.0	0.0					
Total Delay		11.1			26.3	18.5	21.1	21.8					
LOS		B			C	B	C	C					
Approach Delay		11.1			24.3			21.8					
Approach LOS		B			C			C					

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 34: Olive Street & 7th Street

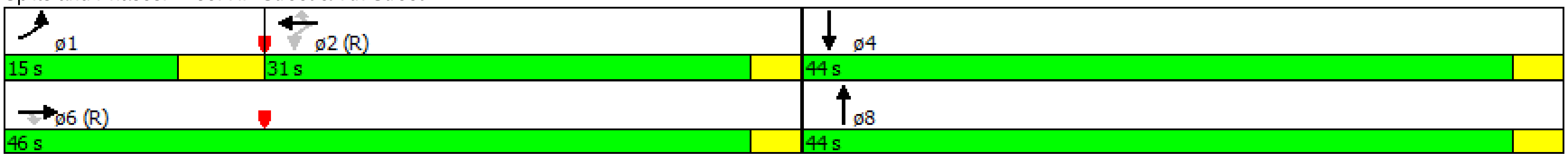


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	20	424	105	0	651	49	0	824	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3099	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64			114		11			38	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	22	461	114	0	761	0	0	1092	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.08	0.88	0.22		0.53			0.76	
Control Delay	30.7	20.1	4.0	33.2	61.1	18.3		25.7			33.4	
Queue Delay	0.0	2.9	0.0	0.0	0.1	0.0		0.1			0.6	
Total Delay	30.7	23.0	4.0	33.2	61.2	18.3		25.8			34.0	
LOS	C	C	A	C	E	B		C			C	
Approach Delay		21.9			52.0			25.8			34.0	
Approach LOS		C			D			C			C	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 33.2 | Intersection LOS: C
Intersection Capacity Utilization 75.7% | ICU Level of Service D
Analysis Period (min) 15

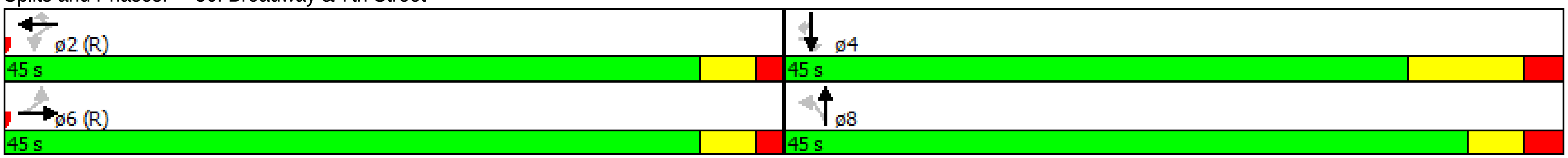
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	391	36	11	411	56	9	607	55	0	364	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3035	0	0	1616	1374
Flt Permitted	0.359			0.379				0.949				
Satd. Flow (perm)	602	1676	419	635	1676	827	0	2883	0	0	1616	837
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			74		8				23
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	425	39	12	447	61	0	730	0	0	396	132
Turn Type	Perm	NA	custom	Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6		4	2		2	8					4
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			45.0	45.0
Total Lost Time (s)	4.9	4.9	9.1	4.9	4.9	4.9		5.6			9.1	9.1
Act Effct Green (s)	40.1	40.1	35.9	40.1	40.1	40.1		39.4			35.9	35.9
Actuated g/C Ratio	0.45	0.45	0.40	0.45	0.45	0.45		0.44			0.40	0.40
v/c Ratio	0.10	0.57	0.21	0.04	0.60	0.15		0.58			0.61	0.38
Control Delay	16.8	26.7	8.3	15.3	27.4	11.2		18.4			15.7	10.6
Queue Delay	0.0	2.4	0.0	0.0	2.3	0.0		0.4			0.0	0.5
Total Delay	16.8	29.1	8.3	15.3	29.7	11.2		18.8			15.7	11.1
LOS	B	C	A	B	C	B		B			B	B
Approach Delay		26.8			27.2			18.8			14.6	
Approach LOS		C			C			B			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

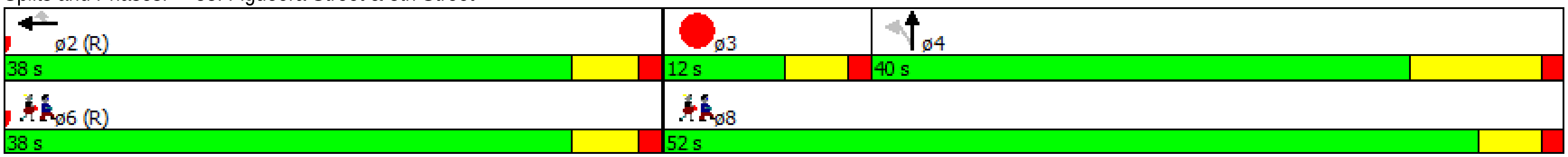


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street

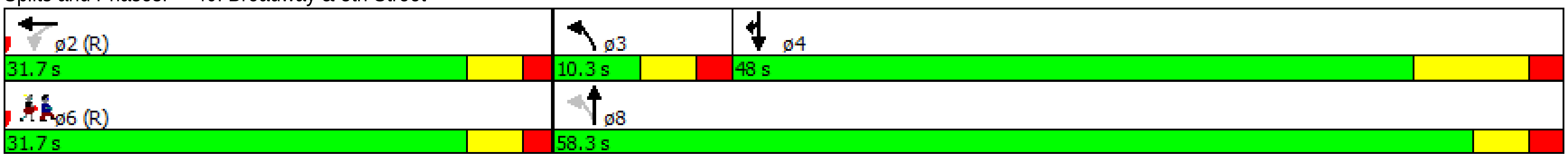


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	69	994	64	81	619	0	0	335	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5611	0	0	3166	0	0	1616	1374	
Flt Permitted					0.997			0.825					
Satd. Flow (perm)	0	0	0	0	5495	0	0	2628	0	0	1616	1374	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					14							88	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1225	0	0	761	0	0	364	74	
Turn Type				Perm	NA		pm+pt	NA			NA	Prot	
Protected Phases					2		3	8			4	4	6
Permitted Phases				2			8						
Total Split (s)				31.7	31.7		10.3	58.3			48.0	48.0	31.7
Total Lost Time (s)					5.0			5.3			8.8	8.8	
Act Effct Green (s)					26.7			53.0			39.2	39.2	
Actuated g/C Ratio					0.30			0.59			0.44	0.44	
v/c Ratio					0.75			0.48			0.52	0.11	
Control Delay					41.0			19.3			24.2	9.0	
Queue Delay					0.0			0.0			0.0	0.0	
Total Delay					41.0			19.3			24.2	9.0	
LOS					D			B			C	A	
Approach Delay					41.0			19.3			21.6		
Approach LOS					D			B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 1 (1%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 30.7	Intersection LOS: C
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 40: Broadway & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

Intersection Summary

Area Type: CBD

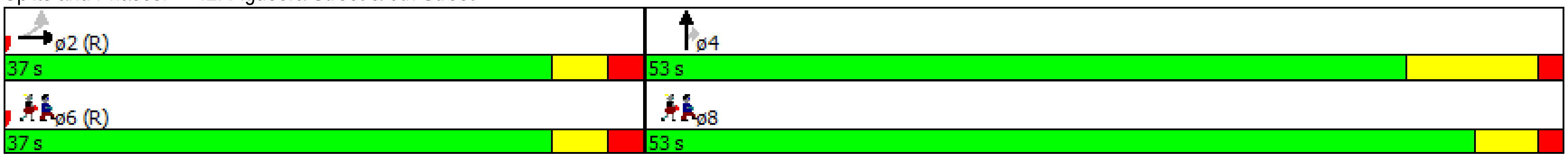
Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green

Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

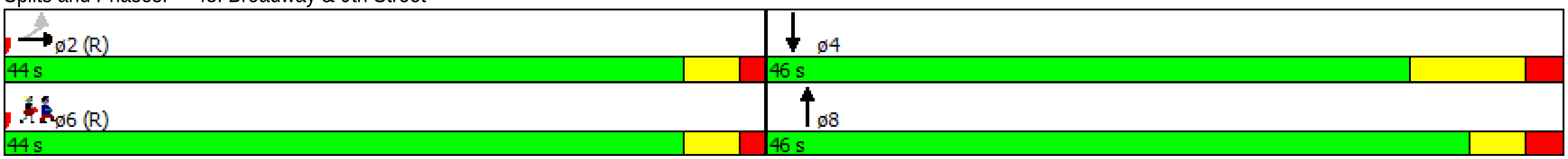


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	169	1057	98	0	0	0	0	605	80	0	436	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4315	0	0	0	0	0	3036	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4315	0	0	0	0	0	3036	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		21						6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	184	1256	0	0	0	0	0	745	0	0	474	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.38	0.66						0.54			0.71		
Control Delay	11.3	14.6						14.6			20.3		
Queue Delay	0.0	0.6						0.0			0.0		
Total Delay	11.3	15.2						14.6			20.3		
LOS	B	B						B			C		
Approach Delay		14.7						14.6			20.3		
Approach LOS		B						B			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 48: Broadway & 9th Street

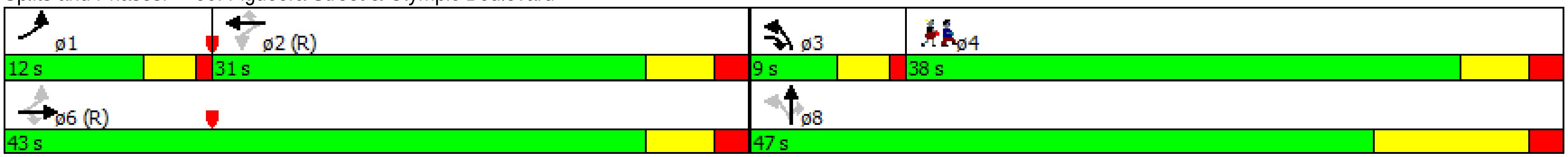


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 47.6	Intersection LOS: D
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

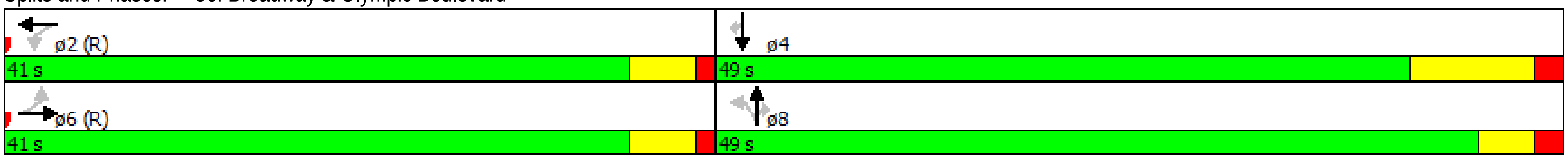
Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	618	75	76	485	67	38	551	70	0	398	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3071	0	1593	3067	0	0	3176	1425	0	1616	1374
Flt Permitted	0.348			0.261				0.902				
Satd. Flow (perm)	553	3071	0	418	3067	0	0	2864	1253	0	1616	1197
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20				47			85
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	754	0	83	600	0	0	640	76	0	433	128
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases		6			2			8			4	
Permitted Phases	6			2			8		8			4
Total Split (s)	41.0	41.0		41.0	41.0		49.0	49.0	49.0		49.0	49.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0	5.0		9.0	9.0
Act Effct Green (s)	36.0	36.0		36.0	36.0			44.0	44.0		40.0	40.0
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.49	0.49		0.44	0.44
v/c Ratio	0.33	0.61		0.50	0.48			0.46	0.12		0.60	0.22
Control Delay	24.9	26.0		37.2	27.1			9.2	2.7		22.4	9.0
Queue Delay	0.0	0.7		0.0	3.6			0.0	0.0		0.0	0.0
Total Delay	24.9	26.7		37.2	30.7			9.2	2.7		22.4	9.0
LOS	C	C		D	C			A	A		C	A
Approach Delay		26.6			31.5			8.5			19.3	
Approach LOS		C			C			A			B	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 56: Broadway & Olympic Boulevard

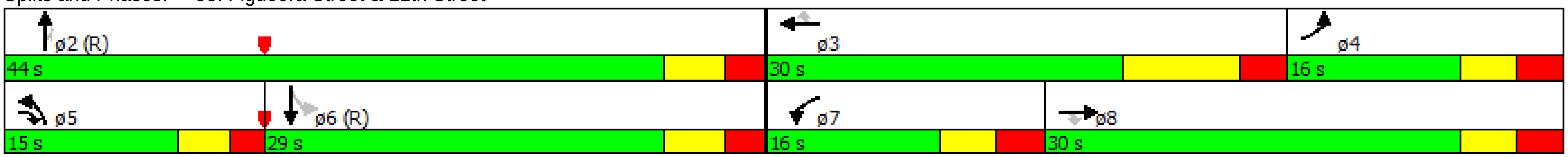


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.5 | Intersection LOS: C
Intersection Capacity Utilization 76.5% | ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

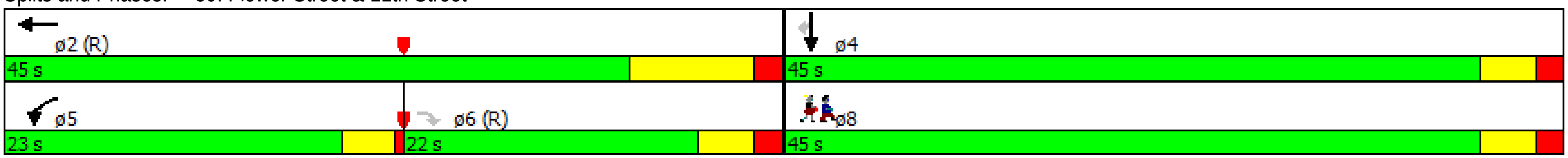


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street



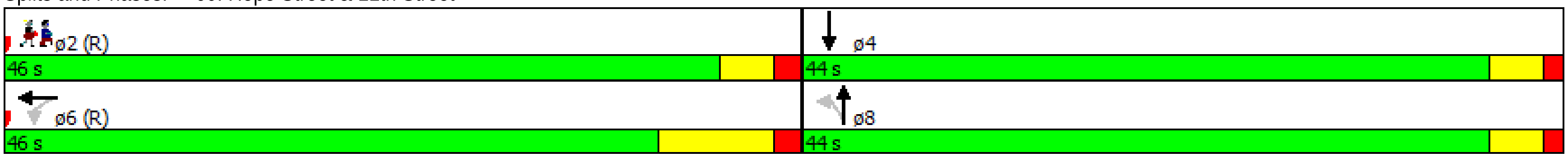
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 27.2 Intersection LOS: C
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15

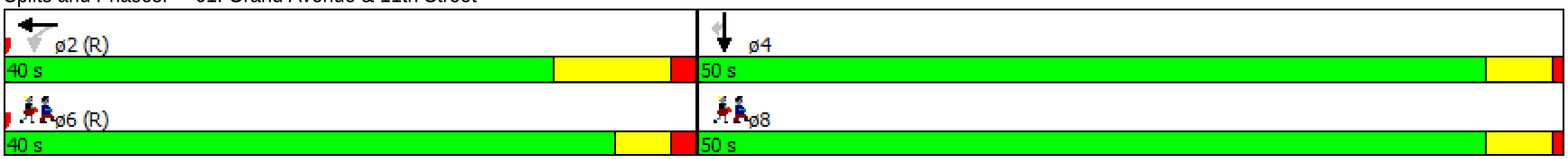
Splits and Phases: 60: Hope Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.9	19.0						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.9	19.0						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.7						17.2			
Approach LOS					B						B			

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 61: Grand Avenue & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					21.6	12.9		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					21.6	12.9		14.7						
LOS					C	B		B						
Approach Delay					20.0			14.7						
Approach LOS					B			B						

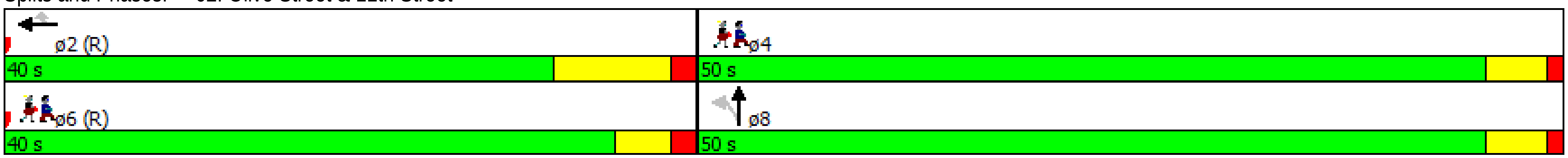
Intersection Summary

62: Olive Street & 11th Street

PM Peak Hour

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	619	73	19	520	0	0	818	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3134	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.191						
Satd. Flow (perm)	0	0	0	1593	3134	0	320	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					19							54	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	752	0	21	565	0	0	889	73	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.51		0.16	0.42			0.66	0.12	
Control Delay				20.8	24.2		19.8	19.5			35.3	19.4	
Queue Delay				0.0	1.5		0.0	0.0			0.0	0.0	
Total Delay				20.8	25.7		19.8	19.5			35.3	19.4	
LOS				C	C		B	B			D	B	
Approach Delay					25.2			19.5			34.1		
Approach LOS					C			B			C		

Intersection Summary

Area Type: CBD

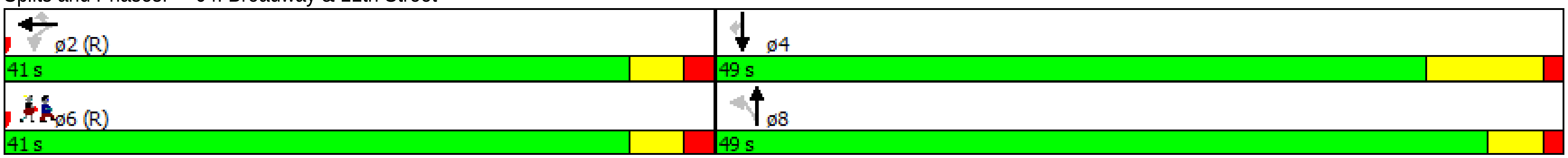
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 27.4 Intersection LOS: C
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 63: Hill Street & 11th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	50	64	658	0	0	628	87	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.205						
Satd. Flow (perm)	0	0	0	0	3093	998	344	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						61						42	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	54	70	715	0	0	683	95	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.12	0.41	0.45			0.93	0.18	
Control Delay					13.9	1.8	23.8	16.0			35.2	6.7	
Queue Delay					0.4	0.0	0.3	0.0			0.0	0.0	
Total Delay					14.3	1.8	24.1	16.0			35.2	6.7	
LOS					B	A	C	B			D	A	
Approach Delay					13.3			16.7			31.7		
Approach LOS					B			B			C		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street

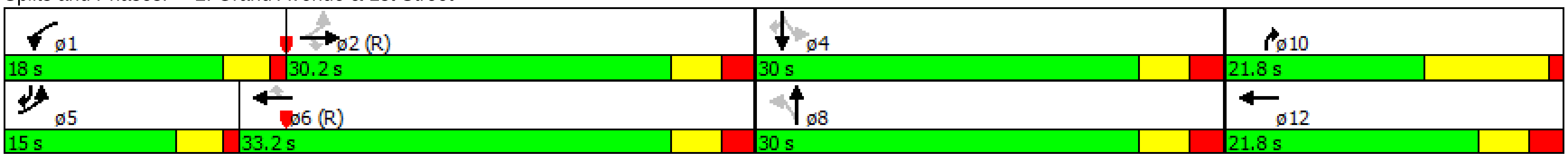


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø12
Lane Configurations													
Volume (vph)	238	673	127	220	834	457	27	544	112	48	665	131	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	170		0	190		0	230		150	220		200	
Storage Lanes	1		0	2		0	1		1	1		1	
Taper Length (ft)	25			25			25			25			
Satd. Flow (prot)	1593	3185	1425	3090	3185	1425	1593	3185	1425	1593	3185	1425	
Flt Permitted	0.155			0.950			0.163			0.249			
Satd. Flow (perm)	253	3185	1165	3090	3185	1230	252	3185	1425	403	3185	989	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			169			323			131			125	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		431			423			560			578		
Travel Time (s)		11.8			11.5			15.3			15.8		
Confl. Peds. (#/hr)	102		139			102	240		79	79		240	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	259	732	138	239	907	497	29	591	122	52	723	142	
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	Perm	NA	custom	Perm	NA	pm+ov	
Protected Phases	5	2		1	6 12			8	10		4	5	12
Permitted Phases	2		2			6	8			4		4	
Total Split (s)	15.0	30.2	30.2	18.0		33.2	30.0	30.0	21.8	30.0	30.0	15.0	21.8
Total Lost Time (s)	4.0	5.5	5.5	4.0		5.5	5.5	5.5	9.0	5.5	5.5	4.0	
Act Effct Green (s)	38.9	26.4	26.4	12.3	44.0	27.7	24.5	24.5	12.8	24.5	24.5	37.0	
Actuated g/C Ratio	0.39	0.26	0.26	0.12	0.44	0.28	0.24	0.24	0.13	0.24	0.24	0.37	
v/c Ratio	1.06	0.87	0.32	0.63	0.65	0.87	0.48	0.76	0.41	0.53	0.93	0.29	
Control Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	48.5	4.8	49.2	14.8	29.0	60.7	42.2	10.9	55.0	56.4	4.3	
LOS	F	D	A	D	B	C	E	D	B	D	E	A	
Approach Delay		54.9			24.1			37.8			48.3		
Approach LOS		D			C			D			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 54 (54%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay: 39.2	Intersection LOS: D
Intersection Capacity Utilization 86.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: Grand Avenue & 1st Street



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø8
Lane Configurations							
Volume (vph)	773	40	64	893	600	871	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0	200		260	0	
Storage Lanes		0	1		2	0	
Taper Length (ft)			25		25		
Satd. Flow (prot)	3185	1425	1593	3185	3090	2508	
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	3185	1049	1593	3185	3014	2302	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		43				17	
Link Speed (mph)	25			25	25		
Link Distance (ft)	423			400	520		
Travel Time (s)	11.5			10.9	14.2		
Confl. Peds. (#/hr)		116			21	61	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	840	43	70	971	652	947	
Turn Type	NA	Perm	Prot	NA	Prot	pm+ov	
Protected Phases	2		1	6	4	1	8
Permitted Phases		2				4	
Total Split (s)	37.0	37.0	18.0	55.0	35.0	18.0	35.0
Total Lost Time (s)	9.0	9.0	3.5	9.0	4.8	3.5	
Act Effct Green (s)	33.1	33.1	15.3	51.9	24.3	40.9	
Actuated g/C Ratio	0.37	0.37	0.17	0.58	0.27	0.45	
v/c Ratio	0.72	0.10	0.26	0.53	0.78	0.87	
Control Delay	30.3	8.0	21.5	22.3	37.1	28.7	
Queue Delay	1.5	0.0	0.0	1.7	0.0	0.0	
Total Delay	31.8	8.0	21.5	24.0	37.1	28.8	
LOS	C	A	C	C	D	C	
Approach Delay	30.7			23.8	32.1		
Approach LOS	C			C	C		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 29.3 Intersection LOS: C
Intersection Capacity Utilization 73.0% ICU Level of Service C
Analysis Period (min) 15

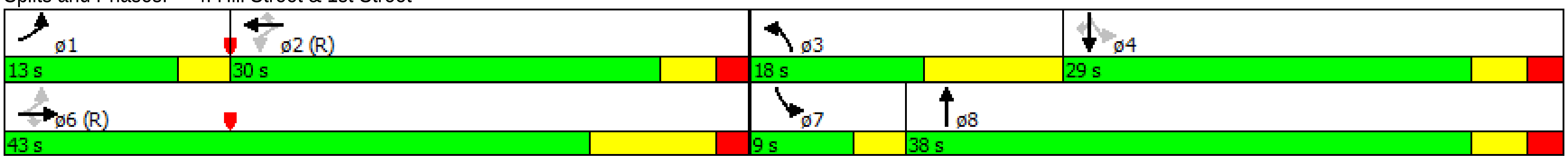
Splits and Phases: 3: Olive Street & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	237	974	31	75	607	61	110	557	43	84	884	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		0	100		0	130		0	125		200
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	1593	3185	1425	1593	3131	0	1593	3185	1425
Flt Permitted	0.172			0.234			0.950			0.404		
Satd. Flow (perm)	277	3185	1143	377	3185	1196	1463	3131	0	657	3185	975
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			162			199		10				245
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		400			410			560			530	
Travel Time (s)		10.9			11.2			15.3			14.5	
Confl. Peds. (#/hr)	106		140	140		106	292		58	58		292
Confl. Bikes (#/hr)			2			2			3			3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	1059	34	82	660	66	120	652	0	91	961	155
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	1	6			2		3	8		7	4	
Permitted Phases	6		6	2		2				4		4
Total Split (s)	13.0	43.0	43.0	30.0	30.0	30.0	18.0	38.0		9.0	29.0	29.0
Total Lost Time (s)	3.0	9.2	9.2	5.2	5.2	5.2	8.0	5.4		3.0	5.4	5.4
Act Effct Green (s)	40.0	33.8	33.8	24.8	24.8	24.8	9.5	34.4		32.5	24.1	24.1
Actuated g/C Ratio	0.44	0.38	0.38	0.28	0.28	0.28	0.11	0.38		0.36	0.27	0.27
v/c Ratio	0.96	0.89	0.06	0.80	0.75	0.14	0.71	0.54		0.30	1.13	0.35
Control Delay	57.1	36.9	0.1	78.1	37.3	3.7	46.3	37.7		16.3	105.0	2.6
Queue Delay	0.0	18.9	0.0	0.0	0.0	0.0	21.5	0.1		0.5	0.0	0.2
Total Delay	57.1	55.8	0.1	78.1	37.3	3.7	67.8	37.8		16.8	105.0	2.8
LOS	E	E	A	E	D	A	E	D		B	F	A
Approach Delay		54.7			38.7			42.4			85.2	
Approach LOS		D			D			D			F	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 58 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 58.2	Intersection LOS: E
Intersection Capacity Utilization 95.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Hill Street & 1st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	224	1071	30	0	672	75	100	539	121	77	50	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	158		0	75		0	60		0	95		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	1425	0	3185	1425	1593	4282	0	1593	2543	0
Flt Permitted	0.241						0.597			0.286		
Satd. Flow (perm)	382	3185	834	0	3185	1050	916	4282	0	450	2543	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			82		29			179	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		410			407			533			517	
Travel Time (s)		11.2			11.1			14.5			14.1	
Confl. Peds. (#/hr)	171		161	161		171	96		159	159		96
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	243	1164	33	0	730	82	109	718	0	84	233	0
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6		6			2	8			4		
Total Split (s)	20.0	57.0	57.0		37.0	37.0	33.0	33.0		33.0	33.0	
Total Lost Time (s)	3.0	7.2	7.2		3.7	3.7	4.0	4.0		4.0	4.0	
Act Effct Green (s)	54.0	49.8	49.8		38.1	38.1	29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.60	0.55	0.55		0.42	0.42	0.32	0.32		0.32	0.32	
v/c Ratio	0.62	0.66	0.07		0.54	0.17	0.37	0.51		0.58	0.25	
Control Delay	18.7	22.9	6.1		14.3	4.3	27.9	24.3		44.3	7.0	
Queue Delay	0.0	12.1	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	18.7	35.0	6.1		14.3	4.3	27.9	24.3		44.3	7.0	
LOS	B	D	A		B	A	C	C		D	A	
Approach Delay		31.6			13.3			24.8			16.9	
Approach LOS		C			B			C			B	

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 11 (12%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Broadway & 1st Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	397	167	0	255	12	79	649	43	31	908	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		68	0		0	100		0	195		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	3185	1425	0	3150	0	1593	3130	0	1593	3136	0
Flt Permitted							0.125			0.290		
Satd. Flow (perm)	0	3185	1340	0	3150	0	208	3130	0	469	3136	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			72		7			8			11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		399			405			660			560	
Travel Time (s)		10.9			11.0			18.0			15.3	
Confl. Peds. (#/hr)			38	38		63	49		69	69		49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	182	0	290	0	86	752	0	34	1066	0
Turn Type		NA	Perm		NA		Perm	NA		Perm	NA	
Protected Phases		6			2			8			4	
Permitted Phases			6	2			8			4		
Total Split (s)		49.0	49.0	49.0	49.0		41.0	41.0		41.0	41.0	
Total Lost Time (s)		5.0	5.0		5.0		8.9	8.9		5.4	5.4	
Act Effct Green (s)		44.0	44.0		44.0		32.1	32.1		35.6	35.6	
Actuated g/C Ratio		0.49	0.49		0.49		0.36	0.36		0.40	0.40	
v/c Ratio		0.28	0.26		0.19		1.16	0.67		0.18	0.85	
Control Delay		14.2	9.1		7.8		177.7	18.3		7.5	16.9	
Queue Delay		0.1	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.3	9.1		7.8		177.7	18.3		7.5	16.9	
LOS		B	A		A		F	B		A	B	
Approach Delay		12.7			7.8			34.6			16.6	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 81 (90%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Control Type: Pretimed

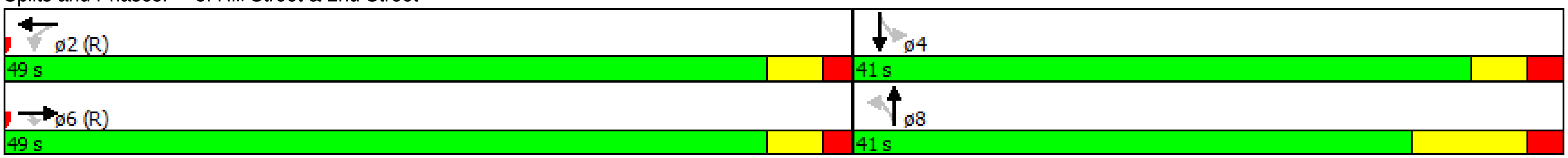
Maximum v/c Ratio: 1.16

Intersection Signal Delay: 20.2 Intersection LOS: C

Intersection Capacity Utilization 78.6% ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Hill Street & 2nd Street

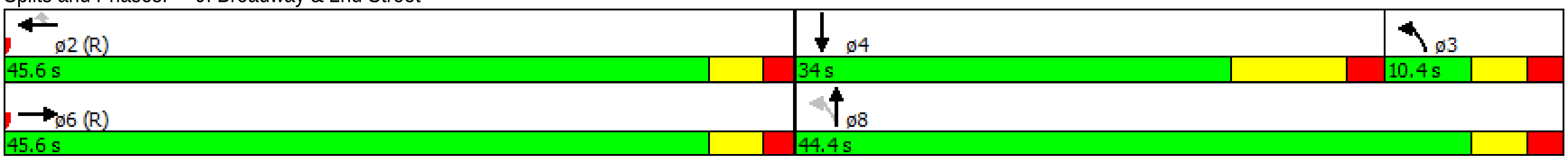


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	632	0	0	458	209	105	273	163	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		90	60		0	0		0
Storage Lanes	0		0	0		1	1		0	0		0
Taper Length (ft)	0			0			25			25		
Satd. Flow (prot)	0	1676	0	0	1676	1425	1593	2785	0	0	1616	0
Flt Permitted							0.701					
Satd. Flow (perm)	0	1676	0	0	1676	1346	1175	2785	0	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						153		70				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		405			409			660			533	
Travel Time (s)		11.0			11.2			18.0			14.5	
Confl. Peds. (#/hr)			122			33			112	112		64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	687	0	0	498	227	114	474	0	0	87	0
Turn Type		NA			NA	Perm	pm+pt	NA			NA	
Protected Phases		6			2		3	8			4	
Permitted Phases						2	8					
Total Split (s)		45.6			45.6	45.6	10.4	44.4			34.0	
Total Lost Time (s)		5.0			5.0	5.0	5.4	5.4			8.9	
Act Effct Green (s)		53.8			53.8	53.8	25.8	25.8			13.6	
Actuated g/C Ratio		0.60			0.60	0.60	0.29	0.29			0.15	
v/c Ratio		0.69			0.50	0.26	0.31	0.56			0.36	
Control Delay		13.8			6.9	1.0	30.1	30.1			40.3	
Queue Delay		0.0			0.5	0.0	0.0	0.0			0.0	
Total Delay		13.8			7.4	1.0	30.1	30.1			40.3	
LOS		B			A	A	C	C			D	
Approach Delay		13.8			5.4			30.1			40.3	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 4 (4%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 62.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 9: Broadway & 2nd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	192	1368	165	56	431	0	0	1132	198	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	140		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3092	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.136						
Satd. Flow (perm)	0	0	0	1406	3092	0	228	3185	0	0	3185	1162	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					24							20	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		121			407			315			660		
Travel Time (s)		3.3			11.1			8.6			18.0		
Confl. Peds. (#/hr)				87		85	11					111	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	209	1666	0	61	468	0	0	1230	215	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				54.0	54.0		36.0	36.0			36.0	36.0	54.0
Total Lost Time (s)				3.0	3.0		6.5	6.5			3.0	3.0	
Act Effct Green (s)				51.0	51.0		29.5	29.5			33.0	33.0	
Actuated g/C Ratio				0.57	0.57		0.33	0.33			0.37	0.37	
v/c Ratio				0.26	0.95		0.82	0.45			1.05	0.49	
Control Delay				13.8	26.5		101.1	39.7			76.3	34.2	
Queue Delay				0.0	0.3		0.0	0.0			0.0	0.0	
Total Delay				13.8	26.8		101.1	39.7			76.3	34.2	
LOS				B	C		F	D			E	C	
Approach Delay					25.4			46.8			70.1		
Approach LOS					C			D			E		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 45.1	Intersection LOS: D
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 12: Hill Street & 3rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	1297	191	192	418	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	107		133	60		0	0		75	
Storage Lanes	0		0	0		1	0		0	0		0	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	0	3185	1425	0	3134	0	0	1616	0	
Flt Permitted								0.821					
Satd. Flow (perm)	0	0	0	0	3185	1153	0	2391	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						136							
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		407			411			660			660		
Travel Time (s)		11.1			11.2			18.0			18.0		
Confl. Peds. (#/hr)				154		128	186					186	
Confl. Bikes (#/hr)						2						7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1410	208	0	663	0	0	87	0	
Turn Type					NA	Perm	pm+pt	NA			NA		
Protected Phases					2		3	8			4		6
Permitted Phases						2	8						
Total Split (s)					48.0	48.0	13.0	42.0			29.0		48.0
Total Lost Time (s)					4.8	4.8		4.5			8.0		
Act Effct Green (s)					43.2	43.2		37.5			34.0		
Actuated g/C Ratio					0.48	0.48		0.42			0.38		
v/c Ratio					0.92	0.33		0.67			0.14		
Control Delay					33.0	8.7		10.7			8.0		
Queue Delay					45.6	0.0		0.3			0.0		
Total Delay					78.7	8.7		11.0			8.0		
LOS					E	A		B			A		
Approach Delay					69.7			11.0			8.0		
Approach LOS					E			B			A		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 87 (97%), Referenced to phase 2:WBT and 6:Ped, Start of Green

Control Type: Actuated-Coordinated

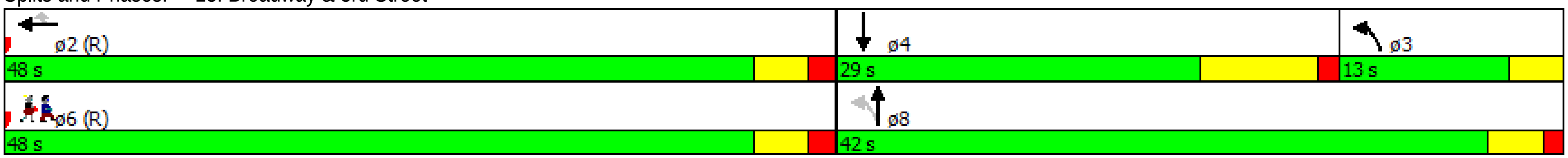
Maximum v/c Ratio: 0.92

Intersection Signal Delay: 51.0 — Intersection LOS: D

Intersection Capacity Utilization 69.9% — ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 13: Broadway & 3rd Street

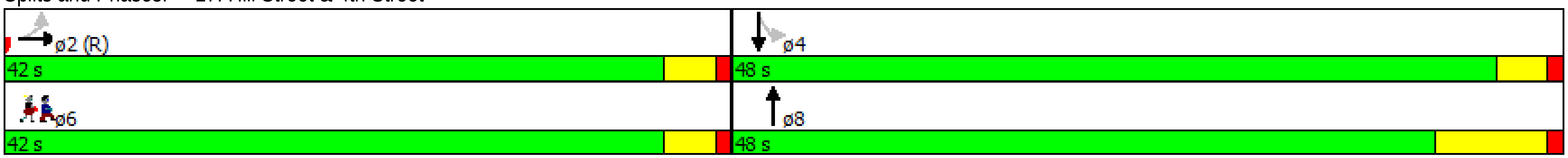


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	26	1292	111	0	0	0	0	686	89	125	1033	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	150		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5652	0	0	0	0	0	3058	0	1593	3185	0	
Flt Permitted		0.999								0.269			
Satd. Flow (perm)	0	5652	0	0	0	0	0	3058	0	430	3185	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		25						7					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		418			415			278			349		
Travel Time (s)		11.4			11.3			7.6			9.5		
Confl. Peds. (#/hr)			66						137	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1553	0	0	0	0	0	843	0	136	1123	0	
Turn Type	Perm	NA						NA		Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2									4			
Total Split (s)	42.0	42.0						48.0		48.0	48.0		42.0
Total Lost Time (s)		4.0						7.5		4.0	4.0		
Act Effct Green (s)		38.0						40.5		44.0	44.0		
Actuated g/C Ratio		0.42						0.45		0.49	0.49		
v/c Ratio		0.65						0.61		0.65	0.72		
Control Delay		17.3						12.5		13.0	5.0		
Queue Delay		0.0						0.0		0.0	0.0		
Total Delay		17.3						12.5		13.0	5.0		
LOS		B						B		B	A		
Approach Delay		17.3						12.5			5.9		
Approach LOS		B						B			A		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 17: Hill Street & 4th Street

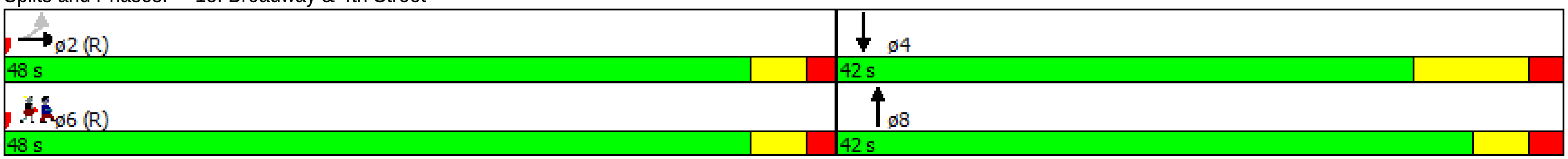


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	209	1303	0	0	0	0	0	474	157	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5727	0	0	0	0	0	2778	0	0	1616	0	
Flt Permitted		0.993											
Satd. Flow (perm)	0	5468	0	0	0	0	0	2778	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								4					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			660		
Travel Time (s)		11.3			11.2			18.0			18.0		
Confl. Peds. (#/hr)	288		266						373	373			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1643	0	0	0	0	0	686	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	48.0	48.0						42.0			42.0		48.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		43.0						36.7			33.2		
Actuated g/C Ratio		0.48						0.41			0.37		
v/c Ratio		0.63						0.60			0.15		
Control Delay		7.5						25.9			36.5		
Queue Delay		0.0						0.0			0.0		
Total Delay		7.5						25.9			36.5		
LOS		A						C			D		
Approach Delay		7.5						25.9			36.5		
Approach LOS		A						C			D		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 79 (88%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: Broadway & 4th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	204	720	136	71	657	0	0	927	209	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	190		0	0		0	
Storage Lanes	0		0	0		0	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	1593	5304	0	1593	3185	0	0	4198	0	
Flt Permitted				0.950			0.175						
Satd. Flow (perm)	0	0	0	993	5304	0	282	3185	0	0	4198	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					57						1		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		419			410			325			407		
Travel Time (s)		11.4			11.2			8.9			11.1		
Confl. Peds. (#/hr)				480		409	178					178	
Confl. Bikes (#/hr)						8						5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	222	931	0	77	714	0	0	1235	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases				2			8						
Total Split (s)				35.0	35.0		55.0	55.0			55.0		35.0
Total Lost Time (s)				5.0	5.0		8.3	8.3			4.8		
Act Effct Green (s)				30.0	30.0		46.7	46.7			50.2		
Actuated g/C Ratio				0.33	0.33		0.52	0.52			0.56		
v/c Ratio				0.67	0.52		0.53	0.43			0.53		
Control Delay				24.2	11.3		35.3	15.0			23.8		
Queue Delay				0.0	0.0		0.0	0.0			0.0		
Total Delay				24.2	11.3		35.3	15.0			23.8		
LOS				C	B		D	B			C		
Approach Delay					13.8			17.0			23.8		
Approach LOS					B			B			C		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 69 (77%), Referenced to phase 2:WBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 18.5 Intersection LOS: B

Intersection Capacity Utilization 65.7% ICU Level of Service C

Analysis Period (min) 15

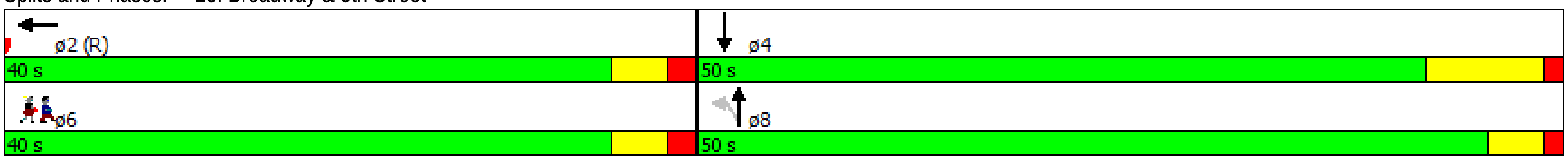
Splits and Phases: 22: Hill Street & 5th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	862	190	164	412	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		80	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	0	0	0	5279	0	0	3141	0	0	1616	0	
Flt Permitted								0.829					
Satd. Flow (perm)	0	0	0	0	5279	0	0	2641	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					72								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			416			660			660		
Travel Time (s)		11.2			11.3			18.0			18.0		
Confl. Peds. (#/hr)				266		288						186	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1144	0	0	626	0	0	87	0	
Turn Type					NA		Perm	NA			NA		
Protected Phases					2			8			4		6
Permitted Phases							8						
Total Split (s)					40.0		50.0	50.0			50.0		40.0
Total Lost Time (s)					5.0			4.5			8.0		
Act Effct Green (s)					35.0			45.5			42.0		
Actuated g/C Ratio					0.39			0.51			0.47		
v/c Ratio					0.55			0.47			0.12		
Control Delay					12.0			23.6			34.8		
Queue Delay					0.0			0.0			0.0		
Total Delay					12.0			23.6			34.8		
LOS					B			C			C		
Approach Delay					12.0			23.6			34.8		
Approach LOS					B			C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 52 (58%), Referenced to phase 2:WBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 48.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 23: Broadway & 5th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	1003	135	0	0	0	0	708	100	86	945	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	190		0	
Storage Lanes	0		0	0		0	0		1	1		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5663	0	0	0	0	0	3185	1425	1593	4577	0	
Flt Permitted										0.313			
Satd. Flow (perm)	0	5663	0	0	0	0	0	3185	1425	525	4577	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)		44							24				
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		420			411			380			328		
Travel Time (s)		11.5			11.2			10.4			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1237	0	0	0	0	0	770	109	93	1027	0	
Turn Type		NA						NA	Perm	Perm	NA		
Protected Phases		2						8			4		6
Permitted Phases	2								8	4			
Total Split (s)	38.0	38.0						52.0	52.0	52.0	52.0		38.0
Total Lost Time (s)		3.0						6.5	6.5	3.0	3.0		
Act Effct Green (s)		35.0						45.5	45.5	49.0	49.0		
Actuated g/C Ratio		0.39						0.51	0.51	0.54	0.54		
v/c Ratio		0.55						0.48	0.15	0.33	0.41		
Control Delay		6.8						6.6	3.8	10.1	8.1		
Queue Delay		0.0						0.0	0.0	0.0	0.0		
Total Delay		6.8						6.6	3.8	10.1	8.1		
LOS		A						A	A	B	A		
Approach Delay		6.8						6.2			8.3		
Approach LOS		A						A			A		

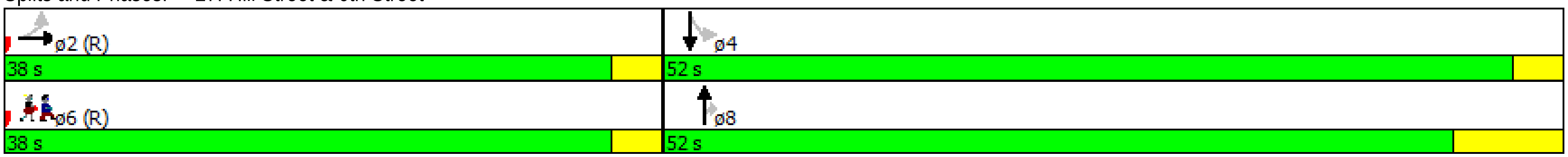
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.55

Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 65.7%	ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 27: Hill Street & 6th Street

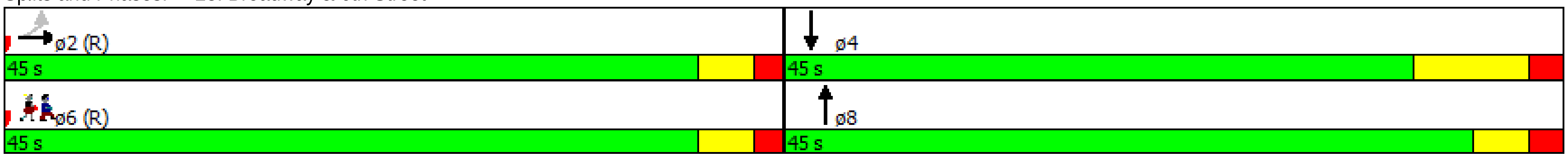


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	136	1041	0	0	0	0	0	583	93	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	60		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	5732	0	0	0	0	0	2956	0	0	1616	0	
Flt Permitted		0.994											
Satd. Flow (perm)	0	5516	0	0	0	0	0	2956	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								6					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		411			419			665			660		
Travel Time (s)		11.2			11.4			18.1			18.0		
Confl. Peds. (#/hr)	288		266						373				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1280	0	0	0	0	0	735	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	45.0	45.0						45.0			45.0		45.0
Total Lost Time (s)		5.0						5.3			8.8		
Act Effct Green (s)		40.0						39.7			36.2		
Actuated g/C Ratio		0.44						0.44			0.40		
v/c Ratio		0.52						0.56			0.13		
Control Delay		6.4						22.4			20.6		
Queue Delay		0.0						0.0			0.0		
Total Delay		6.4						22.4			20.6		
LOS		A						C			C		
Approach Delay		6.4						22.4			20.6		
Approach LOS		A						C			C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 50.1%	ICU Level of Service A
Analysis Period (min) 15	

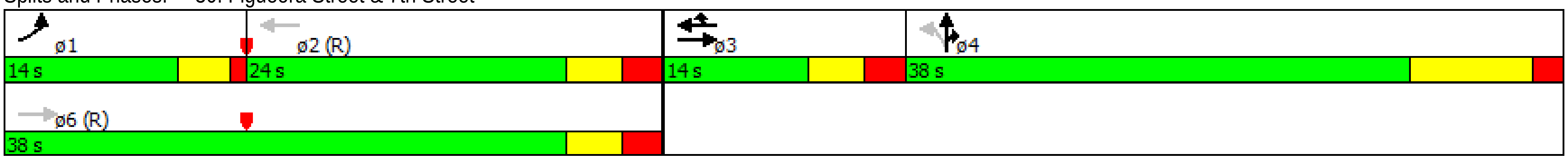
Splits and Phases: 28: Broadway & 6th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2	ø6
Lane Configurations														
Volume (vph)	94	246	0	0	420	133	259	1322	97	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	173		0	0		80	0		0	0		0		
Storage Lanes	2		0	0		1	1		1	0		0		
Taper Length (ft)	25			0			25			0				
Satd. Flow (prot)	3090	1616	0	0	3185	1425	1593	4577	1374	0	0	0		
Flt Permitted	0.950						0.950							
Satd. Flow (perm)	3090	1616	0	0	3185	1425	828	4577	1374	0	0	0		
Right Turn on Red			No			Yes			Yes			No		
Satd. Flow (RTOR)						189			148					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		515			415			660			310			
Travel Time (s)		14.0			11.3			15.0			7.0			
Confl. Peds. (#/hr)							934		997					
Confl. Bikes (#/hr)									24					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	102	267	0	0	457	145	282	1437	105	0	0	0		
Turn Type	Prot	NA			NA	Prot	Perm	NA	Prot					
Protected Phases	1	3			3	3		4	4				2	6
Permitted Phases		6			2		4							
Total Split (s)	14.0	14.0			14.0	14.0	38.0	38.0	38.0				24.0	38.0
Total Lost Time (s)	4.0	5.6			5.6	5.6	9.0	9.0	9.0					
Act Effct Green (s)	8.2	46.1			35.9	8.1	29.3	29.3	29.3					
Actuated g/C Ratio	0.09	0.51			0.40	0.09	0.33	0.33	0.33					
v/c Ratio	0.36	0.32			0.36	0.48	1.05	0.97	0.19					
Control Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0					
Total Delay	41.7	14.1			8.7	11.1	79.3	37.5	5.5					
LOS	D	B			A	B	E	D	A					
Approach Delay		21.7			9.3			42.1						
Approach LOS		C			A			D						

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 80 (89%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 60.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 30: Figueora Street & 7th Street

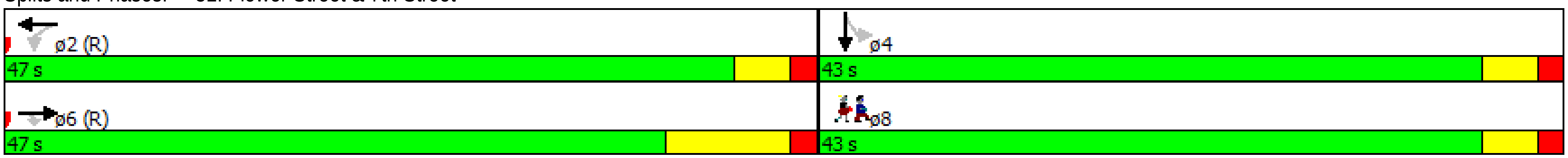


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	274	177	71	396	0	0	0	0	41	1248	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		120	0		0	0		0	0		0	
Storage Lanes	0		1	0		0	0		0	0		0	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	0	3160	0	0	0	0	0	5618	0	
Flt Permitted					0.848						0.998		
Satd. Flow (perm)	0	1676	856	0	2597	0	0	0	0	0	5500	0	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			22								15		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			410			660			310		
Travel Time (s)		11.3			11.2			18.0			8.5		
Confl. Peds. (#/hr)			604	604						776		289	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	298	192	0	507	0	0	0	0	0	1478	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		6			2						4		8
Permitted Phases			6	2						4			
Total Split (s)		47.0	47.0	47.0	47.0					43.0	43.0		43.0
Total Lost Time (s)		8.9	8.9		4.9						4.8		
Act Effct Green (s)		38.1	38.1		42.1						38.2		
Actuated g/C Ratio		0.42	0.42		0.47						0.42		
v/c Ratio		0.42	0.51		0.42						0.63		
Control Delay		14.0	15.4		5.5						21.6		
Queue Delay		0.0	0.0		0.0						0.0		
Total Delay		14.0	15.4		5.5						21.6		
LOS		B	B		A						C		
Approach Delay		14.5			5.5						21.6		
Approach LOS		B			A						C		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 31: Flower Street & 7th Street

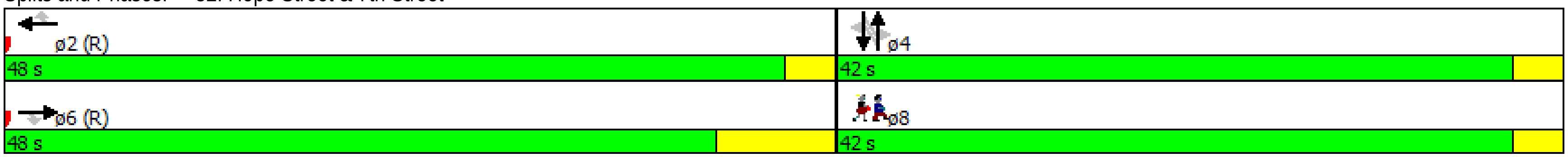


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	307	57	0	424	75	66	301	64	37	314	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		100	0		100	0		0	0		0	
Storage Lanes	0		1	0		1	0		0	0		0	
Taper Length (ft)	0			0			0			0			
Satd. Flow (prot)	0	1616	1425	0	3185	1425	0	2799	0	0	3107	0	
Flt Permitted								0.834			0.877		
Satd. Flow (perm)	0	1616	745	0	3185	694	0	2275	0	0	2660	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			7			20		3			2		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		410			415			660			310		
Travel Time (s)		11.2			11.3			18.0			8.5		
Confl. Peds. (#/hr)			783			904	612		472	472		612	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	9	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	334	62	0	461	82	0	469	0	0	395	0	
Turn Type		NA	Perm		NA	Perm	Perm	NA		Perm	NA		
Protected Phases		6			2			4			4		8
Permitted Phases			6			2	4			4			
Total Split (s)		48.0	48.0		48.0	48.0	42.0	42.0		42.0	42.0		42.0
Total Lost Time (s)		7.0	7.0		3.0	3.0		3.0			3.0		
Act Effct Green (s)		41.0	41.0		45.0	45.0		39.0			39.0		
Actuated g/C Ratio		0.46	0.46		0.50	0.50		0.43			0.43		
v/c Ratio		0.45	0.18		0.29	0.23		0.48			0.34		
Control Delay		9.3	6.9		16.7	14.7		20.5			17.9		
Queue Delay		0.1	0.0		0.0	0.0		0.0			0.0		
Total Delay		9.5	6.9		16.7	14.7		20.5			17.9		
LOS		A	A		B	B		C			B		
Approach Delay		9.1			16.4			20.5			17.9		
Approach LOS		A			B			C			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

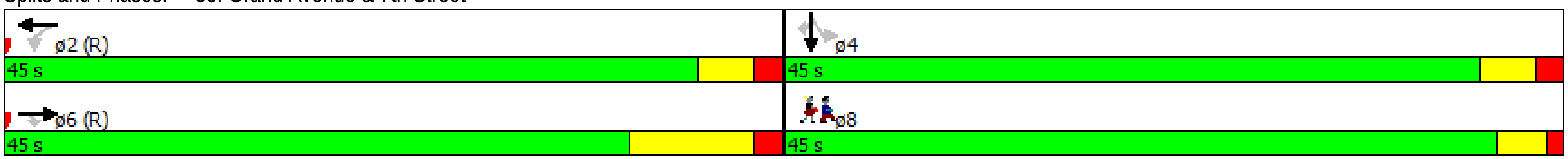
Splits and Phases: 32: Hope Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	328	68	38	432	0	0	0	0	191	1147	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		136	95		0	0		0	100		73	
Storage Lanes	0		1	1		0	0		0	1		1	
Taper Length (ft)	0			0			0			25			
Satd. Flow (prot)	0	1676	1425	1593	1676	0	0	0	0	1593	3185	1425	
Flt Permitted				0.488						0.950			
Satd. Flow (perm)	0	1676	817	818	1676	0	0	0	0	787	3185	933	
Right Turn on Red			Yes			No			No			Yes	
Satd. Flow (RTOR)			23									73	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		415			412			664			311		
Travel Time (s)		11.3			11.2			18.1			8.5		
Confl. Peds. (#/hr)			554							223		342	
Confl. Bikes (#/hr)			40									13	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	357	74	41	470	0	0	0	0	208	1247	49	
Turn Type		NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		6			2						4		8
Permitted Phases			6	2						4		4	
Total Split (s)		45.0	45.0	45.0	45.0					45.0	45.0	45.0	45.0
Total Lost Time (s)		9.0	9.0	5.0	5.0					4.9	4.9	4.9	
Act Effct Green (s)		36.0	36.0	40.0	40.0					40.1	40.1	40.1	
Actuated g/C Ratio		0.40	0.40	0.44	0.44					0.45	0.45	0.45	
v/c Ratio		0.53	0.22	0.11	0.63					0.59	0.88	0.11	
Control Delay		28.9	19.1	8.2	12.2					46.7	51.5	15.0	
Queue Delay		0.8	0.0	0.0	0.4					0.0	0.0	0.0	
Total Delay		29.7	19.1	8.2	12.5					46.7	51.5	15.0	
LOS		C	B	A	B					D	D	B	
Approach Delay		27.9			12.2						49.7		
Approach LOS		C			B						D		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 26 (29%), Referenced to phase 2:WBTL and 6:EBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 33: Grand Avenue & 7th Street

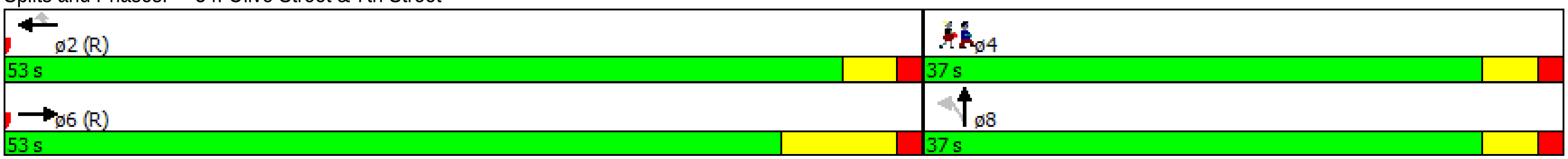


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	0	445	0	0	453	151	105	1138	91	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		100	0		50	0		0	
Storage Lanes	0		0	0		1	1		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	1616	0	0	1676	1425	1593	4412	0	0	0	0	
Flt Permitted							0.950						
Satd. Flow (perm)	0	1616	0	0	1676	803	732	4412	0	0	0	0	
Right Turn on Red			No			Yes			Yes			No	
Satd. Flow (RTOR)						22		16					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		412			413			664			662		
Travel Time (s)		11.2			11.3			18.1			18.1		
Confl. Peds. (#/hr)						608	265		302				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	9	0	0	0	0	0	0	0	0	0	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	484	0	0	492	164	114	1336	0	0	0	0	
Turn Type		NA			NA	Perm	Perm	NA					
Protected Phases		6			2			8					4
Permitted Phases						2	8						
Total Split (s)		53.0			53.0	53.0	37.0	37.0					37.0
Total Lost Time (s)		8.2			4.7	4.7	4.8	4.8					
Act Effct Green (s)		44.8			48.3	48.3	32.2	32.2					
Actuated g/C Ratio		0.50			0.54	0.54	0.36	0.36					
v/c Ratio		0.60			0.55	0.37	0.44	0.84					
Control Delay		10.9			17.1	13.9	21.0	21.8					
Queue Delay		0.2			2.9	0.0	0.0	0.0					
Total Delay		11.1			20.0	13.9	21.0	21.8					
LOS		B			B	B	C	C					
Approach Delay		11.1			18.4			21.8					
Approach LOS		B			B			C					

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 34: Olive Street & 7th Street

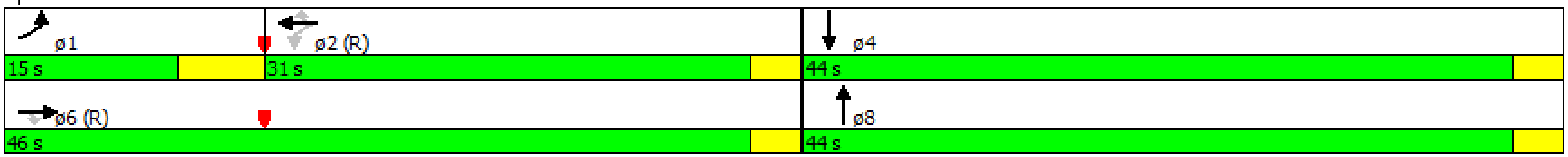


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	67	410	59	88	303	105	0	651	49	0	1024	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		120	100		126	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	1425	1593	1676	1425	0	3153	0	0	3077	0
Flt Permitted	0.950			0.505								
Satd. Flow (perm)	1593	1676	1425	847	1676	1425	0	3153	0	0	3077	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41			114		11			56	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		413			415			387			291	
Travel Time (s)		11.3			11.3			10.6			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	446	64	96	329	114	0	761	0	0	1440	0
Turn Type	Prot	NA	Perm	Perm	NA	Perm		NA			NA	
Protected Phases	1	6			2			8			4	
Permitted Phases			6	2		2						
Total Split (s)	15.0	46.0	46.0	31.0	31.0	31.0		44.0			44.0	
Total Lost Time (s)	5.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Act Effct Green (s)	10.0	43.0	43.0	28.0	28.0	28.0		41.0			41.0	
Actuated g/C Ratio	0.11	0.48	0.48	0.31	0.31	0.31		0.46			0.46	
v/c Ratio	0.41	0.56	0.09	0.37	0.63	0.22		0.53			1.01	
Control Delay	30.7	20.1	5.3	41.6	46.3	19.8		25.8			56.2	
Queue Delay	0.0	2.9	0.0	0.0	0.0	0.0		0.1			5.4	
Total Delay	30.7	23.0	5.3	41.6	46.3	19.8		25.9			61.6	
LOS	C	C	A	D	D	B		C			E	
Approach Delay		22.0			39.8			25.9			61.6	
Approach LOS		C			D			C			E	

Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 43.0 Intersection LOS: D
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15

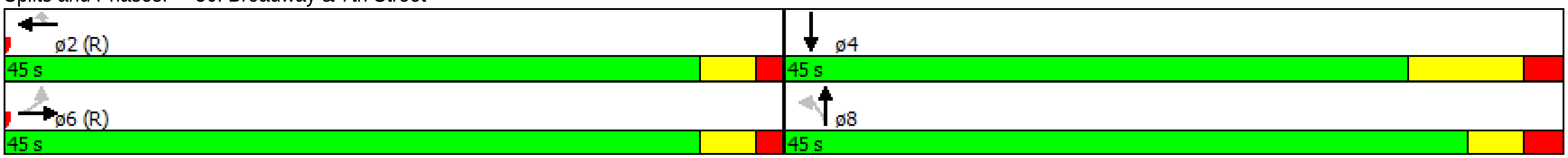
Splits and Phases: 35: Hill Street & 7th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	427	0	0	411	341	77	607	55	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	136		0	160		0	0		0	0		40
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	1593	1676	0	0	1676	1425	0	3036	0	0	1616	0
Flt Permitted	0.359							0.906				
Satd. Flow (perm)	602	1676	0	0	1676	827	0	2764	0	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						74		7				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			415			660			665	
Travel Time (s)		11.3			11.3			18.0			18.1	
Confl. Peds. (#/hr)			591			596			586			475
Confl. Bikes (#/hr)			16			41			14			18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	464	0	0	447	371	0	804	0	0	87	0
Turn Type	Perm	NA			NA	Perm	Perm	NA			NA	
Protected Phases		6			2			8			4	
Permitted Phases	6					2	8					
Total Split (s)	45.0	45.0			45.0	45.0	45.0	45.0			45.0	
Total Lost Time (s)	4.9	4.9			4.9	4.9		5.6			9.1	
Act Effct Green (s)	40.1	40.1			40.1	40.1		39.4			35.9	
Actuated g/C Ratio	0.45	0.45			0.45	0.45		0.44			0.40	
v/c Ratio	0.10	0.62			0.60	0.91		0.66			0.14	
Control Delay	16.8	28.2			21.6	44.2		15.3			0.4	
Queue Delay	0.0	4.0			1.4	0.0		0.0			0.0	
Total Delay	16.8	32.2			23.0	44.2		15.3			0.4	
LOS	B	C			C	D		B			A	
Approach Delay		31.4			32.7			15.3			0.4	
Approach LOS		C			C			B			A	

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 5 (6%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 36: Broadway & 7th Street

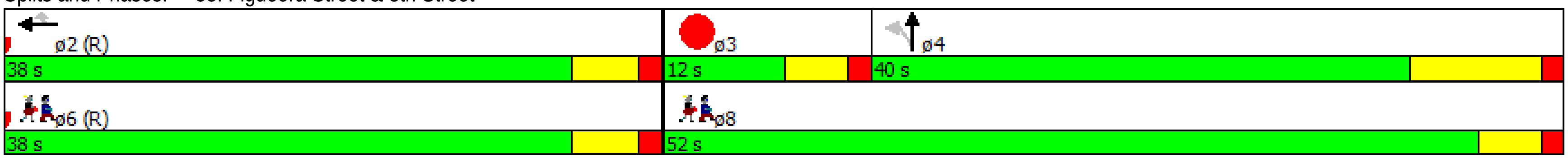


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø3	ø6	ø8
Lane Configurations															
Volume (vph)	0	0	0	0	1781	329	0	2064	0	0	0	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		113	200		0	0		0			
Storage Lanes	0		0	0		1	1		0	0		0			
Taper Length (ft)	0			0			25			0					
Satd. Flow (prot)	0	0	0	0	5767	1425	1676	6790	0	0	0	0			
Flt Permitted															
Satd. Flow (perm)	0	0	0	0	5767	1118	1676	6790	0	0	0	0			
Right Turn on Red			No			Yes	Yes		No			No			
Satd. Flow (RTOR)						201									
Link Speed (mph)		25			25			30			30				
Link Distance (ft)		538			420			813			660				
Travel Time (s)		14.7			11.5			18.5			15.0				
Confl. Peds. (#/hr)						192									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Shared Lane Traffic (%)															
Lane Group Flow (vph)	0	0	0	0	1936	358	0	2243	0	0	0	0			
Turn Type					NA	Perm	Perm	NA							
Protected Phases					2			4					3	6	8
Permitted Phases						2	4								
Total Split (s)					38.0	38.0	40.0	40.0					12.0	38.0	52.0
Total Lost Time (s)					5.3	5.3	9.0	9.0							
Act Effct Green (s)					32.7	32.7		31.0							
Actuated g/C Ratio					0.36	0.36		0.34							
v/c Ratio					0.92	0.67		0.96							
Control Delay					36.4	17.3		36.3							
Queue Delay					0.0	0.0		0.0							
Total Delay					36.4	17.3		36.3							
LOS					D	B		D							
Approach Delay					33.4			36.3							
Approach LOS					C			D							

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 66 (73%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 38: Figueora Street & 8th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	0	994	111	199	710	0	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	80		0	0		55	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	5528	0	0	3150	0	0	1616	0	
Flt Permitted								0.804					
Satd. Flow (perm)	0	0	0	0	5528	0	0	2561	0	0	1616	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					30								
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		413			410			665			660		
Travel Time (s)		11.3			11.2			18.1			18.0		
Confl. Peds. (#/hr)				135		173						212	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1201	0	0	988	0	0	87	0	
Turn Type					NA		pm+pt	NA			NA		
Protected Phases					2		3	8			4		6
Permitted Phases							8						
Total Split (s)					31.7		10.3	58.3			48.0		31.7
Total Lost Time (s)					5.0			5.3			8.8		
Act Effct Green (s)					26.7			53.0			39.2		
Actuated g/C Ratio					0.30			0.59			0.44		
v/c Ratio					0.72			0.64			0.12		
Control Delay					38.4			19.5			7.7		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.4			19.5			7.7		
LOS					D			B			A		
Approach Delay					38.4			19.5			7.7		
Approach LOS					D			B			A		

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 1 (1%), Referenced to phase 2:WBT and 6:Ped, Start of Green

Control Type: Pretimed

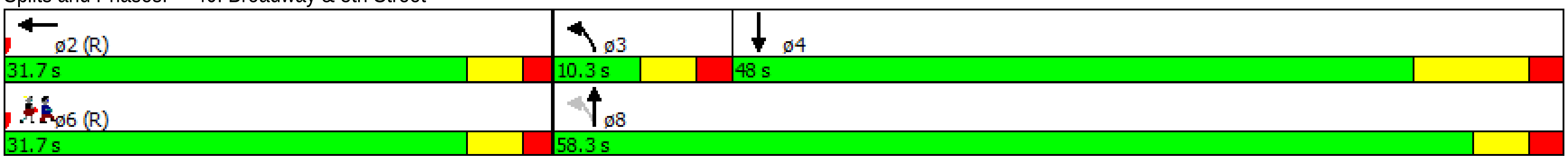
Maximum v/c Ratio: 0.72

Intersection Signal Delay: 29.0 Intersection LOS: C

Intersection Capacity Utilization 58.9% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 40: Broadway & 8th Street

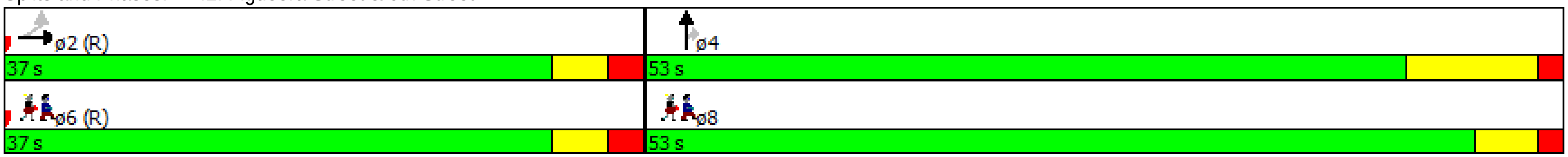


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	217	1125	0	0	0	0	0	1354	163	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Satd. Flow (prot)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Flt Permitted	0.950	0.999												
Satd. Flow (perm)	1290	5426	0	0	0	0	0	4577	1425	0	0	0		
Right Turn on Red	Yes		No			No			Yes			No		
Satd. Flow (RTOR)	75	75							29					
Link Speed (mph)		25			25			30			30			
Link Distance (ft)		550			456			550			813			
Travel Time (s)		15.0			12.4			12.5			18.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)	10%													
Lane Group Flow (vph)	212	1247	0	0	0	0	0	1472	177	0	0	0		
Turn Type	Perm	NA						NA	Perm					
Protected Phases		2						4					6	8
Permitted Phases	2								4					
Total Split (s)	37.0	37.0						53.0	53.0				37.0	53.0
Total Lost Time (s)	5.4	5.4						9.2	9.2					
Act Effct Green (s)	31.6	31.6						43.8	43.8					
Actuated g/C Ratio	0.35	0.35						0.49	0.49					
v/c Ratio	0.42	0.64						0.66	0.25					
Control Delay	17.1	24.6						27.5	21.1					
Queue Delay	0.0	0.0						0.0	0.0					
Total Delay	17.1	24.6						27.5	21.1					
LOS	B	C						C	C					
Approach Delay		23.5						26.9						
Approach LOS		C						C						

Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 60 (67%), Referenced to phase 2:EBTL and 6:Ped, Start of Green	

Control Type: Pretimed	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 42: Figueora Street & 9th Street

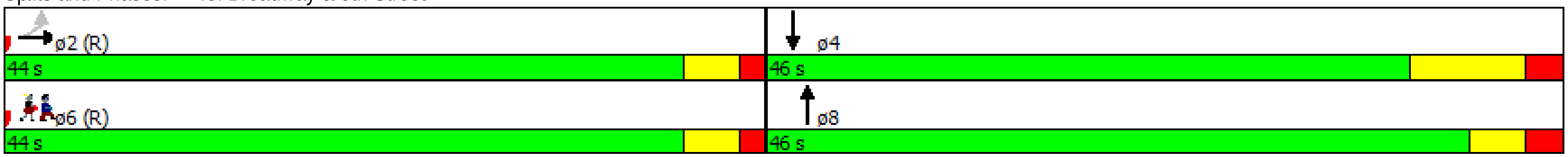


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	343	1155	0	0	0	0	0	792	80	0	80	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	120		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			0			0			25			
Satd. Flow (prot)	1593	4577	0	0	0	0	0	3068	0	0	1616	0	
Flt Permitted	0.950												
Satd. Flow (perm)	1108	4577	0	0	0	0	0	3068	0	0	1616	0	
Right Turn on Red			Yes			No			Yes			No	
Satd. Flow (RTOR)								4					
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		408			430			665			665		
Travel Time (s)		11.1			11.7			18.1			18.1		
Confl. Peds. (#/hr)	226		247						136	136			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	373	1255	0	0	0	0	0	948	0	0	87	0	
Turn Type	Perm	NA						NA			NA		
Protected Phases		2						8			4		6
Permitted Phases	2												
Total Split (s)	44.0	44.0						46.0			46.0		44.0
Total Lost Time (s)	4.8	4.8						5.5			9.0		
Act Effct Green (s)	39.2	39.2						40.5			37.0		
Actuated g/C Ratio	0.44	0.44						0.45			0.41		
v/c Ratio	0.77	0.63						0.69			0.13		
Control Delay	24.7	15.8						19.2			16.9		
Queue Delay	0.0	0.7						0.0			0.0		
Total Delay	24.7	16.5						19.2			16.9		
LOS	C	B						B			B		
Approach Delay		18.3						19.2			16.9		
Approach LOS		B						B			B		

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 61.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 48: Broadway & 9th Street

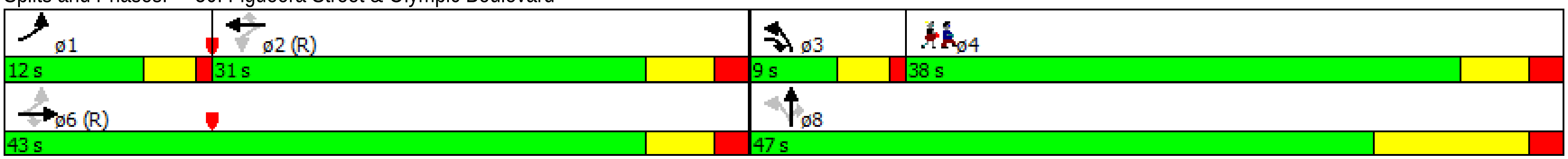


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4
Lane Configurations													
Volume (vph)	166	825	199	94	1370	208	239	1279	170	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	340		195	194		116	200		109	0		0	
Storage Lanes	1		1	1		1	1		1	0		0	
Taper Length (ft)	25			25			25			0			
Satd. Flow (prot)	1593	4577	1425	1593	4577	1425	1593	4577	1425	0	0	0	
Flt Permitted	0.150			0.305			0.950						
Satd. Flow (perm)	251	4577	1094	479	4577	951	1140	4577	1244	0	0	0	
Right Turn on Red			Yes			Yes			Yes			No	
Satd. Flow (RTOR)			216			194			85				
Link Speed (mph)		25			25			30			30		
Link Distance (ft)		572			411			617			550		
Travel Time (s)		15.6			11.2			14.0			12.5		
Confl. Peds. (#/hr)			212	212		237	263		102				
Confl. Bikes (#/hr)			16			19			15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	897	216	102	1489	226	260	1390	185	0	0	0	
Turn Type	pm+pt	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm				
Protected Phases	1	6	3		2		3	8					4
Permitted Phases	6		6	2		2	8		8				
Total Split (s)	12.0	43.0	9.0	31.0	31.0	31.0	9.0	47.0	47.0				38.0
Total Lost Time (s)	4.0	6.0	4.0	6.0	6.0	6.0	4.0	11.0	11.0				
Act Effct Green (s)	39.0	37.0	59.2	25.0	25.0	25.0	43.0	36.0	36.0				
Actuated g/C Ratio	0.43	0.41	0.66	0.28	0.28	0.28	0.48	0.40	0.40				
v/c Ratio	0.79	0.48	0.25	0.77	1.17	0.56	0.40	0.76	0.34				
Control Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	43.2	20.5	2.4	61.2	114.7	13.1	9.9	18.2	4.1				
LOS	D	C	A	E	F	B	A	B	A				
Approach Delay		20.6			99.1			15.6					
Approach LOS		C			F			B					

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 88 (98%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 47.6	Intersection LOS: D
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 50: Figueora Street & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	693	0	0	485	234	95	551	70	0	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	117		0	70		0	150		0	0		75
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1593	3185	0	0	2870	0	0	3163	1425	0	1616	0
Flt Permitted	0.247							0.887				
Satd. Flow (perm)	400	3185	0	0	2870	0	0	2783	1253	0	1616	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					108				35			
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		415			260			667			660	
Travel Time (s)		11.3			7.1			18.2			18.0	
Confl. Peds. (#/hr)	99		133	133		99	81		94	94		81
Confl. Bikes (#/hr)			12			9			14			10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	753	0	0	781	0	0	702	76	0	87	0
Turn Type	Perm	NA			NA		Perm	NA	Perm		NA	
Protected Phases		6			2			8			4	
Permitted Phases	6						8		8			
Total Split (s)	41.0	41.0			41.0		49.0	49.0	49.0		49.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0	5.0		9.0	
Act Effct Green (s)	36.0	36.0			36.0			44.0	44.0		40.0	
Actuated g/C Ratio	0.40	0.40			0.40			0.49	0.49		0.44	
v/c Ratio	1.20	0.59			0.64			0.52	0.12		0.12	
Control Delay	162.8	28.1			25.0			11.0	4.4		13.3	
Queue Delay	0.0	49.0			5.4			0.0	0.0		0.0	
Total Delay	162.8	77.1			30.4			11.0	4.4		13.3	
LOS	F	E			C			B	A		B	
Approach Delay		94.5			30.4			10.4			13.3	
Approach LOS		F			C			B			B	

Intersection Summary

Area Type: CBD

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 64 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Green

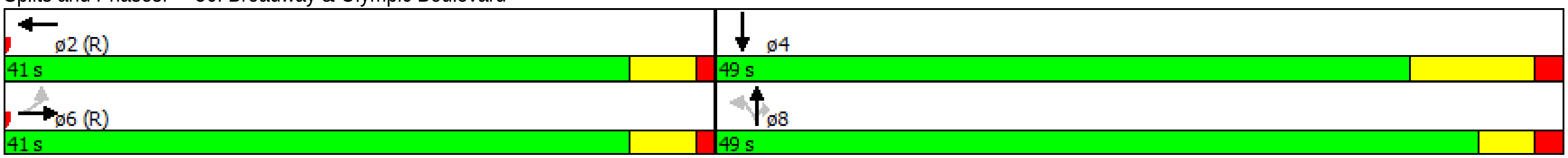
Control Type: Pretimed

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 47.2	Intersection LOS: D
Intersection Capacity Utilization 71.8%	ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 56: Broadway & Olympic Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	33	48	187	386	306	6	1554	0	8	272	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		235	230		215	205		0	190		0
Storage Lanes	2		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	3090	1676	1425	1593	3185	1425	1593	4577	1676	1593	3138	0
Flt Permitted	0.950			0.950			0.950			0.118		
Satd. Flow (perm)	3090	1676	1425	1593	3185	1425	1593	4577	1676	198	3138	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			170					13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		896			425			876			617	
Travel Time (s)		24.4			11.6			19.9			14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	36	52	203	420	333	7	1689	0	9	330	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	4	8	5	7	3		5	2			6	
Permitted Phases			8			3			2	6		
Total Split (s)	16.0	30.0	15.0	16.0	30.0	30.0	15.0	44.0	44.0	29.0	29.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	9.5	9.5	5.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	8.1	18.4	28.1	12.0	18.9	18.9	6.0	43.9		37.1	37.1	
Actuated g/C Ratio	0.09	0.20	0.31	0.13	0.21	0.21	0.07	0.49		0.41	0.41	
v/c Ratio	0.27	0.10	0.10	0.96	0.63	0.77	0.07	0.76		0.11	0.25	
Control Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.1	26.7	0.4	87.0	31.2	24.8	40.3	23.1		19.4	13.4	
LOS	D	C	A	F	C	C	D	C		B	B	
Approach Delay		24.5			40.8			23.2			13.6	
Approach LOS		C			D			C			B	

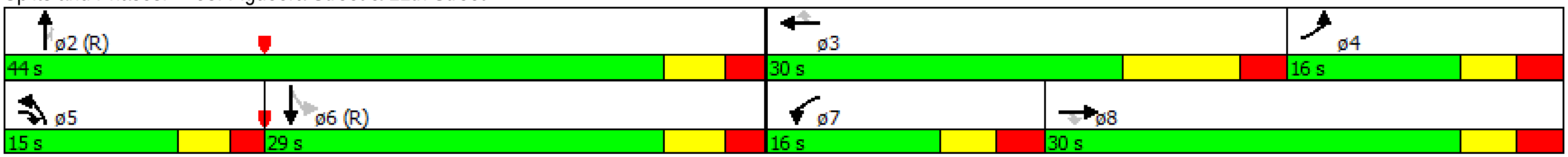
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96

Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 58: Figueora Street & 11th Street

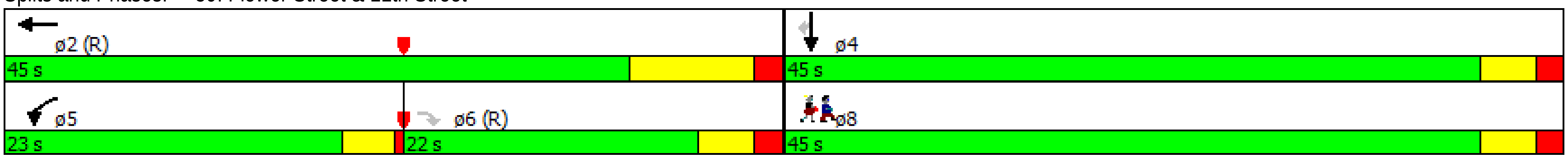


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø8
Lane Configurations													
Volume (vph)	0	0	45	73	463	0	0	0	0	0	1051	203	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	120		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	0			25			0			0			
Satd. Flow (prot)	0	0	1450	1593	3185	0	0	0	0	0	4577	1425	
Flt Permitted				0.950									
Satd. Flow (perm)	0	0	1274	1593	3185	0	0	0	0	0	4577	1338	
Right Turn on Red			Yes	No		No			No			Yes	
Satd. Flow (RTOR)			242									211	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		425			422			660			660		
Travel Time (s)		11.6			11.5			18.0			18.0		
Confl. Peds. (#/hr)			66									39	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	49	79	503	0	0	0	0	0	1142	221	
Turn Type			Perm	Prot	NA						NA	Perm	
Protected Phases				5	2						4		8
Permitted Phases			6									4	
Total Split (s)			22.0	23.0	45.0						45.0	45.0	45.0
Total Lost Time (s)			5.0	3.5	9.0						4.9	4.9	
Act Effct Green (s)			28.6	9.8	36.0						40.1	40.1	
Actuated g/C Ratio			0.32	0.11	0.40						0.45	0.45	
v/c Ratio			0.09	0.45	0.39						0.56	0.31	
Control Delay			5.7	35.5	19.5						12.4	4.2	
Queue Delay			0.0	0.0	0.0						0.0	0.0	
Total Delay			5.7	35.5	19.5						12.4	4.2	
LOS			A	D	B						B	A	
Approach Delay					21.7						11.1		
Approach LOS					C						B		

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 47 (52%), Referenced to phase 2:WBT and 6:EBR, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 51.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 59: Flower Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø2
Lane Configurations													
Volume (vph)	0	0	0	41	451	127	25	204	0	0	279	58	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Satd. Flow (prot)	0	0	0	0	3068	0	0	3169	0	0	3089	0	
Flt Permitted					0.997			0.894					
Satd. Flow (perm)	0	0	0	0	3067	0	0	2845	0	0	3089	0	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					44						35		
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		422			415			650			650		
Travel Time (s)		11.5			11.3			17.7			17.7		
Confl. Peds. (#/hr)				1		2	11					11	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	673	0	0	249	0	0	366	0	
Turn Type				Perm	NA		Perm	NA			NA		
Protected Phases					6			8			4		2
Permitted Phases				6			8						
Total Split (s)				46.0	46.0		44.0	44.0			44.0		46.0
Total Lost Time (s)					8.3			4.4			4.4		
Act Effct Green (s)					37.7			39.6			39.6		
Actuated g/C Ratio					0.42			0.44			0.44		
v/c Ratio					0.51			0.20			0.27		
Control Delay					38.0			16.0			15.0		
Queue Delay					0.0			0.0			0.0		
Total Delay					38.0			16.0			15.0		
LOS					D			B			B		
Approach Delay					38.0			16.0			15.0		
Approach LOS					D			B			B		

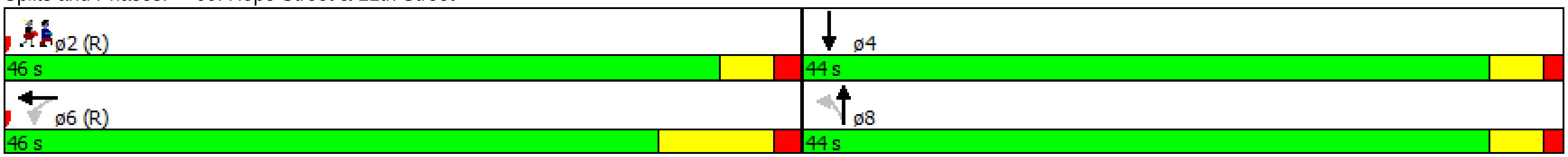
Intersection Summary	
Area Type:	CBD
Cycle Length: 90	
Actuated Cycle Length: 90	

Offset: 77 (86%), Referenced to phase 2:Ped and 6:WBTL, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.51

Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 60: Hope Street & 11th Street

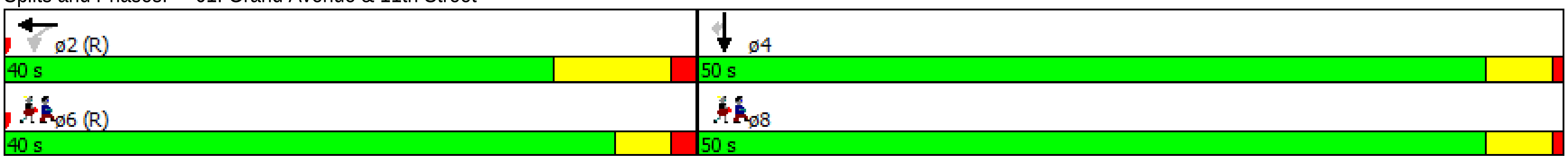


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6	ø8
Lane Configurations														
Volume (vph)	0	0	0	154	475	0	0	0	0	0	1453	169		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	50		0	0		0	0		0		
Storage Lanes	0		0	1		0	0		0	0		1		
Taper Length (ft)	0			25			0			0				
Satd. Flow (prot)	0	0	0	1593	3185	0	0	0	0	0	4577	1425		
Flt Permitted				0.950										
Satd. Flow (perm)	0	0	0	1433	3185	0	0	0	0	0	4577	1279		
Right Turn on Red			No	No		No			No			Yes		
Satd. Flow (RTOR)												159		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		415			418			708			687			
Travel Time (s)		11.3			11.4			19.3			18.7			
Confl. Peds. (#/hr)				63								51		
Confl. Bikes (#/hr)												2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	167	516	0	0	0	0	0	1579	184		
Turn Type				Perm	NA						NA	Perm		
Protected Phases					2						4		6	8
Permitted Phases				2								4		
Total Split (s)				40.0	40.0						50.0	50.0	40.0	50.0
Total Lost Time (s)				8.3	8.3						4.6	4.6		
Act Effct Green (s)				31.7	31.7						45.4	45.4		
Actuated g/C Ratio				0.35	0.35						0.50	0.50		
v/c Ratio				0.33	0.46						0.68	0.25		
Control Delay				17.5	18.7						18.8	3.9		
Queue Delay				0.0	0.0						0.0	0.0		
Total Delay				17.5	18.7						18.8	3.9		
LOS				B	B						B	A		
Approach Delay					18.4						17.2			
Approach LOS					B						B			

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 11 (12%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 17.6 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 61: Grand Avenue & 11th Street

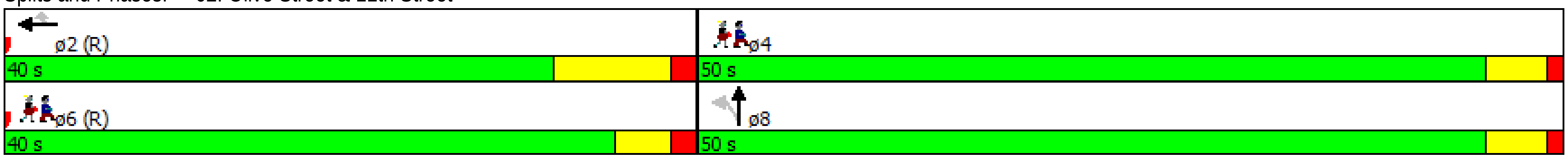


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø4	ø6
Lane Configurations														
Volume (vph)	0	0	0	0	520	120	129	925	0	0	0	0		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	0		0	0		50	0		0	0		0		
Storage Lanes	0		0	0		1	0		0	0		0		
Taper Length (ft)	0			0			0			0				
Satd. Flow (prot)	0	0	0	0	3185	1425	0	4549	0	0	0	0		
Flt Permitted								0.994						
Satd. Flow (perm)	0	0	0	0	3185	1313	0	4539	0	0	0	0		
Right Turn on Red			No			Yes	Yes		No			No		
Satd. Flow (RTOR)						77		64						
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		418			409			658			661			
Travel Time (s)		11.4			11.2			17.9			18.0			
Confl. Peds. (#/hr)						43	10							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	0	0	0	565	130	0	1145	0	0	0	0		
Turn Type					NA	Perm	Perm	NA						
Protected Phases					2			8					4	6
Permitted Phases						2	8							
Total Split (s)					40.0	40.0	50.0	50.0					50.0	40.0
Total Lost Time (s)					8.3	8.3		4.6						
Act Effct Green (s)					31.7	31.7		45.4						
Actuated g/C Ratio					0.35	0.35		0.50						
v/c Ratio					0.50	0.25		0.49						
Control Delay					20.8	11.7		14.7						
Queue Delay					0.0	0.0		0.0						
Total Delay					20.8	11.7		14.7						
LOS					C	B		B						
Approach Delay					19.1			14.7						
Approach LOS					B			B						

Intersection Summary

Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 75 (83%), Referenced to phase 2:WBT and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 56.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 62: Olive Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	86	562	73	19	520	0	0	1006	124	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	80		0	70		0	0		100	
Storage Lanes	0		0	1		0	1		0	0		1	
Taper Length (ft)	0			25			25			0			
Satd. Flow (prot)	0	0	0	1593	3131	0	1593	3185	0	0	3185	1425	
Flt Permitted				0.950			0.114						
Satd. Flow (perm)	0	0	0	1593	3131	0	191	3185	0	0	3185	1425	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)					21							81	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		409			321			658			663		
Travel Time (s)		11.2			8.8			17.9			18.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	93	690	0	21	565	0	0	1093	135	
Turn Type				Perm	NA		Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2			8					4	
Total Split (s)				49.0	49.0		41.0	41.0			41.0	41.0	49.0
Total Lost Time (s)				6.5	6.5		3.0	3.0			3.0	3.0	
Act Effct Green (s)				42.5	42.5		38.0	38.0			38.0	38.0	
Actuated g/C Ratio				0.47	0.47		0.42	0.42			0.42	0.42	
v/c Ratio				0.12	0.46		0.26	0.42			0.81	0.21	
Control Delay				22.9	25.4		27.4	19.5			37.8	19.8	
Queue Delay				0.0	1.2		0.0	0.0			0.0	0.0	
Total Delay				22.9	26.5		27.4	19.5			37.8	19.8	
LOS				C	C		C	B			D	B	
Approach Delay					26.1			19.8			35.8		
Approach LOS					C			B			D		

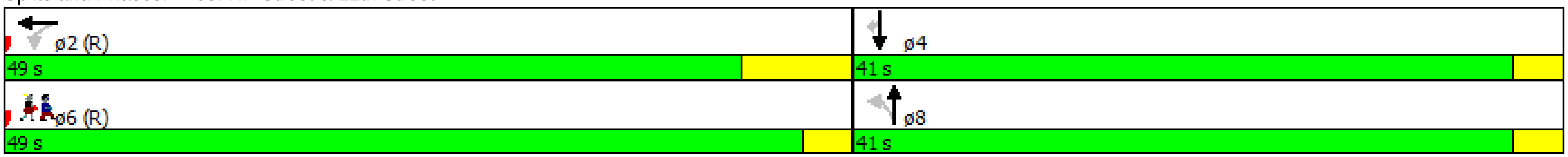
Intersection Summary	
Area Type:	CBD

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 36 (40%), Referenced to phase 2:WBTL and 6:Ped, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.81

Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 59.5%	ICU Level of Service B

Analysis Period (min) 15

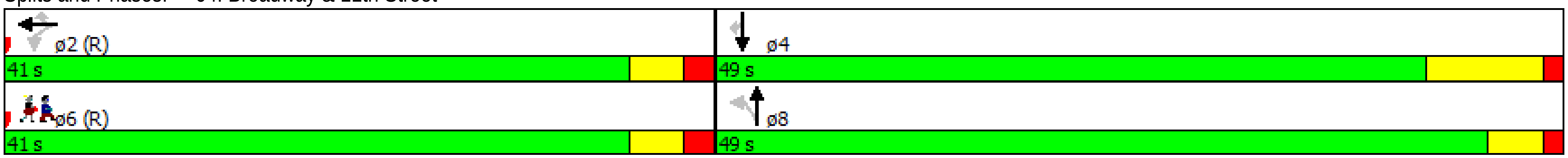
Splits and Phases: 63: Hill Street & 11th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	ø6
Lane Configurations													
Volume (vph)	0	0	0	38	511	259	64	815	0	0	50	30	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		70	95		0	0		0	
Storage Lanes	0		0	0		1	1		0	0		1	
Taper Length (ft)	0			0			25			0			
Satd. Flow (prot)	0	0	0	0	3176	1425	1593	3185	0	0	1616	1374	
Flt Permitted					0.997		0.722						
Satd. Flow (perm)	0	0	0	0	3093	998	1028	3185	0	0	1616	1132	
Right Turn on Red			No			Yes			No			Yes	
Satd. Flow (RTOR)						101						33	
Link Speed (mph)		25			25			25			25		
Link Distance (ft)		321			317			652			667		
Travel Time (s)		8.8			8.6			17.8			18.2		
Confl. Peds. (#/hr)				159		205	90					90	
Confl. Bikes (#/hr)						7						14	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	9	9	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	596	282	70	886	0	0	54	33	
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm	
Protected Phases					2			8			4		6
Permitted Phases				2	2	2	8					4	
Total Split (s)				41.0	41.0	41.0	49.0	49.0			49.0	49.0	41.0
Total Lost Time (s)					5.0	5.0	4.5	4.5			8.0	8.0	
Act Effct Green (s)					36.0	36.0	44.5	44.5			41.0	41.0	
Actuated g/C Ratio					0.40	0.40	0.49	0.49			0.46	0.46	
v/c Ratio					0.48	0.61	0.14	0.56			0.07	0.06	
Control Delay					18.8	15.8	13.3	17.7			0.2	0.2	
Queue Delay					0.6	0.5	0.0	0.0			0.0	0.0	
Total Delay					19.4	16.3	13.3	17.7			0.2	0.2	
LOS					B	B	B	B			A	A	
Approach Delay					18.4			17.4			0.2		
Approach LOS					B			B			A		

Intersection Summary	
Area Type: CBD	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 64 (71%), Referenced to phase 2:WBTL and 6:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 58.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 64: Broadway & 11th Street



ATTACHMENT 2 – STREETCAR RUN TIME WORKSHEETS

LA Streetcar
Streetcar Run Times
Original Assumptions - 20 sec. delay per intersection

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:20		
TS (R=80.00')				0.29			00:00:00	00:02:12
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:19
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:00
	30	660	0.13		00:00:27	00:00:20		
3rd and Broadway				0.54			00:00:20	00:04:07
	30	660	0.13		00:00:27	00:00:30		
4th and Broadway				0.66			00:00:20	00:05:24
	30	664	0.13		00:00:27	00:00:30		
5th and Broadway				0.79			00:00:20	00:06:41
	30	660	0.13		00:00:27	00:00:30		
6th and Broadway				0.91			00:00:20	00:07:58
	30	670	0.13		00:00:27	00:00:30		
7th and Broadway				1.04			00:00:20	00:09:15
	30	655	0.12		00:00:27	00:00:30		
8th and Broadway				1.16			00:00:20	00:10:32
	30	670	0.13		00:00:27	00:00:30		
9th and Broadway				1.29			00:00:20	00:11:49
	30	660	0.13		00:00:27	00:00:30		
Olympic and Broadway				1.41			00:00:20	00:13:06
	25	680	0.13		00:00:25	00:00:20		
11th and Broadway				1.54			00:00:20	00:14:11
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:14:18
	30	590	0.11		00:00:22	00:00:20		
Olive and 11th				1.67			00:00:20	00:15:20
	30	820	0.16		00:00:31	00:00:40		
Hope and 11th				1.83			00:00:20	00:16:51
	30	790	0.15		00:00:30	00:01:00		
TS (R=80.00')				1.98			00:00:00	00:18:21
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:18:48
	30	610	0.12		00:00:26	00:00:20		
Olympic and Figueroa				2.11			00:00:20	00:19:54
	30	550	0.10		00:00:25	00:00:20		
9th and Figueroa				2.22			00:00:20	00:20:59
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:21:45
	30	650	0.12		00:00:23	00:00:40		
TS (R=80.00')				2.46			00:00:00	00:22:48
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:23:17
	30	825	0.16		00:00:31	00:00:40		
Hope and 7th				2.63			00:00:20	00:24:48
	30	680	0.13		00:00:27	00:00:20		
Olive and 7th				2.76			00:00:20	00:25:55
	25	420	0.08		00:00:18	00:00:40		
TS (R=80.00')				2.84			00:00:00	00:26:53
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:27:22
	30	1190	0.23		00:00:39	00:00:40		
5th and Hill				3.09			00:00:20	00:29:01
	35	1115	0.21		00:00:36	00:01:00		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:30:57
	35	890	0.17		00:00:32	00:00:20		
2nd and Hill				3.47			00:00:20	00:32:09
	30	555	0.11		00:00:25	00:00:40		
TS (R=80.00')				3.57			00:00:00	00:33:14
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:33:21
	30	650	0.12		00:00:20	00:00:40		
TS (R=80.00')				3.71			00:00:00	00:34:21
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:34:28
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:34:41
				3.79	**00:13:11**	**00:13:50**	**00:07:40**	**00:34:41**
						Avg. Speed =	6.6 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Average intersection delay = 20 seconds.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Base Case - Using Base Synchro Signal Delay Output

Station	Speed (mph)	Distance (miles) Feet	Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:01:29		
3rd and Broadway				0.54			00:00:20	00:05:41
	30	660	0.13		00:00:27	00:00:36		
4th and Broadway				0.66			00:00:20	00:07:04
	30	664	0.13		00:00:27	00:00:39		
5th and Broadway				0.79			00:00:20	00:08:30
	30	660	0.13		00:00:27	00:00:39		
6th and Broadway				0.91			00:00:20	00:09:56
	30	670	0.13		00:00:27	00:00:35		
7th and Broadway				1.04			00:00:20	00:11:18
	30	655	0.12		00:00:27	00:00:28		
8th and Broadway				1.16			00:00:20	00:12:33
	30	670	0.13		00:00:27	00:01:54		
9th and Broadway				1.29			00:00:20	00:15:14
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:16:28
	25	680	0.13		00:00:25	00:02:12		
11th and Broadway				1.54			00:00:20	00:19:25
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:19:32
	30	590	0.11		00:00:22	00:00:43		
Olive and 11th				1.67			00:00:20	00:20:57
	30	820	0.16		00:00:31	00:00:44		
Hope and 11th				1.83			00:00:20	00:22:32
	30	790	0.15		00:00:30	00:01:36		
TS (R=80.00')				1.98			00:00:00	00:24:38
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:25:05
	30	610	0.12		00:00:26	00:00:18		
Olympic and Figueroa				2.11			00:00:20	00:26:09
	30	550	0.10		00:00:25	00:00:35		
9th and Figueroa				2.22			00:00:20	00:27:29
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:28:15
	30	650	0.12		00:00:23	00:02:41		
TS (R=80.00')				2.46			00:00:00	00:31:19
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:31:48
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:33:04
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:34:21
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:35:21
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:35:50
	30	1190	0.23		00:00:39	00:00:33		
5th and Hill				3.09			00:00:20	00:37:22
	35	1115	0.21		00:00:36	00:00:58		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:39:16
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:40:49
	30	555	0.11		00:00:25	00:02:12		
TS (R=80.00')				3.57			00:00:00	00:43:26
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:43:33
	30	650	0.12		00:00:20	00:01:37		
TS (R=80.00')				3.71			00:00:00	00:45:30
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:45:37
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:45:50
				3.79	**00:13:11**	**00:24:59**	**00:07:40**	**00:45:50**

Avg. Speed = 5.0 mph
Avg. Station Spacing= 0.16 miles

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 1 - Base Case with Improvements

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:00:55		
3rd and Broadway				0.54			00:00:20	00:05:07
	30	660	0.13		00:00:27	00:00:36		
4th and Broadway				0.66			00:00:20	00:06:30
	30	664	0.13		00:00:27	00:00:39		
5th and Broadway				0.79			00:00:20	00:07:56
	30	660	0.13		00:00:27	00:00:39		
6th and Broadway				0.91			00:00:20	00:09:22
	30	670	0.13		00:00:27	00:00:35		
7th and Broadway				1.04			00:00:20	00:10:44
	30	655	0.12		00:00:27	00:00:28		
8th and Broadway				1.16			00:00:20	00:11:59
	30	670	0.13		00:00:27	00:00:39		
9th and Broadway				1.29			00:00:20	00:13:25
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:14:39
	25	680	0.13		00:00:25	00:00:49		
11th and Broadway				1.54			00:00:20	00:16:13
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:16:20
	30	590	0.11		00:00:22	00:00:25		
Olive and 11th				1.67			00:00:20	00:17:27
	30	820	0.16		00:00:31	00:00:44		
Hope and 11th				1.83			00:00:20	00:19:02
	30	790	0.15		00:00:30	00:01:24		
TS (R=80.00')				1.98			00:00:00	00:20:56
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:21:23
	30	610	0.12		00:00:26	00:00:18		
Olympic and Figueroa				2.11			00:00:20	00:22:27
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:23:40
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:24:26
	30	650	0.12		00:00:23	00:00:38		
TS (R=80.00')				2.46			00:00:00	00:25:27
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:25:56
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:27:12
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:28:29
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:29:29
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:29:58
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:31:23
	35	1115	0.21		00:00:36	00:00:51		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:33:10
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:34:43
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:36:34
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:36:41
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:38:13
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:38:20
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:38:33
				3.79	**00:13:11**	**00:17:42**	**00:07:40**	**00:38:33**
						Avg. Speed =	5.9 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 2 - Two SB Broadway Lanes

Station	Speed (mph)	Feet	Distance (miles) Increment	Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:44		
TS (R=80.00')				0.29			00:00:00	00:02:36
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:43
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:24
	30	660	0.13		00:00:27	00:00:59		
3rd and Broadway				0.54			00:00:20	00:05:10
	30	660	0.13		00:00:27	00:00:22		
4th and Broadway				0.66			00:00:20	00:06:19
	30	664	0.13		00:00:27	00:00:38		
5th and Broadway				0.79			00:00:20	00:07:44
	30	660	0.13		00:00:27	00:00:38		
6th and Broadway				0.91			00:00:20	00:09:09
	30	670	0.13		00:00:27	00:00:33		
7th and Broadway				1.04			00:00:20	00:10:29
	30	655	0.12		00:00:27	00:00:26		
8th and Broadway				1.16			00:00:20	00:11:42
	30	670	0.13		00:00:27	00:00:34		
9th and Broadway				1.29			00:00:20	00:13:03
	30	660	0.13		00:00:27	00:00:30		
Olympic and Broadway				1.41			00:00:20	00:14:20
	25	680	0.13		00:00:25	00:00:41		
11th and Broadway				1.54			00:00:20	00:15:46
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:15:53
	30	590	0.11		00:00:22	00:00:25		
Olive and 11th				1.67			00:00:20	00:17:00
	30	820	0.16		00:00:31	00:00:41		
Hope and 11th				1.83			00:00:20	00:18:32
	30	790	0.15		00:00:30	00:01:24		
TS (R=80.00')				1.98			00:00:00	00:20:26
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:20:53
	30	610	0.12		00:00:26	00:00:16		
Olympic and Figueroa				2.11			00:00:20	00:21:55
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:23:08
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:23:54
	30	650	0.12		00:00:23	00:00:41		
TS (R=80.00')				2.46			00:00:00	00:24:58
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:25:27
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:26:43
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:28:00
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:29:00
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:29:29
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:30:54
	35	1115	0.21		00:00:36	00:00:47		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:32:37
	35	890	0.17		00:00:32	00:00:40		
2nd and Hill				3.47			00:00:20	00:34:09
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:36:00
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:36:07
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:37:39
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:37:46
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:37:59
				3.79	**00:13:11**	**00:17:08**	**00:07:40**	**00:37:59**
						Avg. Speed =	6.0 mph	
						Avg. Station Spacing=	0.16 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 3 - Broadway Transit Only Lane

Station	Speed (mph)	Feet	Distance (miles) Increment	Distance (miles) Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	660	0.13		00:00:27	00:00:40		
3rd and Broadway				0.54			00:00:20	00:04:52
	30	660	0.13		00:00:27	00:00:18		
4th and Broadway				0.66			00:00:20	00:05:57
	30	664	0.13		00:00:27	00:00:46		
5th and Broadway				0.79			00:00:20	00:07:30
	30	660	0.13		00:00:27	00:00:45		
6th and Broadway				0.91			00:00:20	00:09:02
	30	670	0.13		00:00:27	00:00:31		
7th and Broadway				1.04			00:00:20	00:10:20
	30	655	0.12		00:00:27	00:00:12		
8th and Broadway				1.16			00:00:20	00:11:19
	30	670	0.13		00:00:27	00:00:18		
9th and Broadway				1.29			00:00:20	00:12:24
	30	660	0.13		00:00:27	00:00:27		
Olympic and Broadway				1.41			00:00:20	00:13:38
	25	680	0.13		00:00:25	00:00:25		
11th and Broadway				1.54			00:00:20	00:14:48
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:14:55
	30	590	0.11		00:00:22	00:00:27		
Olive and 11th				1.67			00:00:20	00:16:04
	30	820	0.16		00:00:31	00:00:41		
Hope and 11th				1.83			00:00:20	00:17:36
	30	790	0.15		00:00:30	00:01:23		
TS (R=80.00')				1.98			00:00:00	00:19:29
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				2.00			00:00:20	00:19:56
	30	610	0.12		00:00:26	00:00:16		
Olympic and Figueroa				2.11			00:00:20	00:20:58
	30	550	0.10		00:00:25	00:00:28		
9th and Figueroa				2.22			00:00:20	00:22:11
	30	630	0.12		00:00:26	00:00:00		
8th and Figueroa				2.34			00:00:20	00:22:57
	30	650	0.12		00:00:23	00:00:41		
TS (R=80.00')				2.46			00:00:00	00:24:01
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:24:30
	30	825	0.16		00:00:31	00:00:25		
Hope and 7th				2.63			00:00:20	00:25:46
	30	680	0.13		00:00:27	00:00:30		
Olive and 7th				2.76			00:00:20	00:27:03
	25	420	0.08		00:00:18	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:28:03
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:28:32
	30	1190	0.23		00:00:39	00:00:27		
5th and Hill				3.09			00:00:20	00:29:58
	35	1115	0.21		00:00:36	00:00:47		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:31:41
	35	890	0.17		00:00:32	00:00:40		
2nd and Hill				3.47			00:00:20	00:33:13
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:35:04
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:35:11
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:36:43
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:36:50
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:37:03
				3.79	**00:13:11**	**00:16:12**	**00:07:40**	**00:37:03**
						Avg. Speed =	6.1	mph
						Avg. Station Spacing=	0.16	miles

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

LA Streetcar
Streetcar Run Times
Scenario 4 - Base Case with Improvements and 16 Stops

Station	Speed (mph)	Feet	Distance (miles) Increment	Distance (miles) Total	Run Time (hr:min:sec)	Delay Time (hr:min:sec)	Dwell Time (hr:min:sec)	Total Time (hr:min:sec)
2nd and Grand				0.00			00:00:00	00:00:00
	20	315	0.06		00:00:16	00:00:00		
TS (R=80.00')				0.06			00:00:00	00:00:16
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				0.08			00:00:00	00:00:23
	35	1100	0.21		00:00:29	00:01:45		
TS (R=80.00')				0.29			00:00:00	00:02:37
Curve No. 2 (1st & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				0.31			00:00:00	00:02:44
	30	550	0.10		00:00:21	00:00:00		
2nd and Broadway				0.41			00:00:20	00:03:25
	30	1320	0.25		00:00:42	00:01:31		
4th and Broadway				0.66			00:00:20	00:05:58
	30	1324	0.25		00:00:42	00:01:18		
6th and Broadway				0.91			00:00:20	00:08:18
	30	1325	0.25		00:00:42	00:01:03		
8th and Broadway				1.16			00:00:20	00:10:23
	30	1330	0.25		00:00:42	00:01:06		
Olympic and Broadway				1.41			00:00:20	00:12:31
	25	680	0.13		00:00:25	00:00:49		
TS (R=80.00')				1.54			00:00:00	00:13:45
Curve No. 3 (11th & Broadway)	10	100	0.02		00:00:07	00:00:00		
ST				1.56			00:00:00	00:13:52
	30	980	0.19		00:00:31	00:00:50		
Grand and 11th				1.75			00:00:20	00:15:33
	30	1200	0.23		00:00:39	00:01:43		
TS (R=80.00')				1.97			00:00:00	00:17:55
Curve No. 4 (Figueroa and 11th)	10	100	0.02		00:00:07	00:00:00		
11th and Figueroa				1.99			00:00:20	00:18:22
	30	1170	0.22		00:00:39	00:00:46		
9th and Figueroa				2.21			00:00:20	00:20:07
	30	1290	0.24		00:00:38	00:00:38		
TS (R=80.00')				2.46			00:00:00	00:21:23
Curve No. 5 (Figueroa and 7th)	10	100	0.02		00:00:09	00:00:00		
Figueroa and 7th				2.48			00:00:20	00:21:52
	30	1210	0.23		00:00:40	00:00:55		
Grand and 7th				2.71			00:00:20	00:23:47
	30	715	0.14		00:00:25	00:00:42		
TS (R=80.00')				2.84			00:00:00	00:24:54
Curve No. 6 (7th and Hill)	10	100	0.02		00:00:09	00:00:00		
7th and Hill				2.86			00:00:20	00:25:23
	30	1190	0.23		00:00:39	00:00:26		
5th and Hill				3.09			00:00:20	00:26:48
	35	1115	0.21		00:00:36	00:00:51		
4th and Hill (Grand Central Market)				3.30			00:00:20	00:28:35
	35	890	0.17		00:00:32	00:00:41		
2nd and Hill				3.47			00:00:20	00:30:08
	30	555	0.11		00:00:25	00:01:26		
TS (R=80.00')				3.57			00:00:00	00:31:59
Curve No. 7 (1st & Hill)	10	100	0.02		00:00:07	00:00:00		
ST				3.59			00:00:00	00:32:06
	30	650	0.12		00:00:20	00:01:12		
TS (R=80.00')				3.71			00:00:00	00:33:38
Curve No. 1 (1st & Grand)	10	100	0.02		00:00:07	00:00:00		
ST				3.73			00:00:00	00:33:45
	20	315	0.06		00:00:13	00:00:00		
2nd and Grand				3.79				00:33:58
				3.79	**00:11:36**	**00:17:42**	**00:04:40**	**00:33:58**
						Avg. Speed =	6.7 mph	
						Avg. Station Spacing=	0.25 miles	

NOTES:
1. Stationing, distances and horizontal curve radii based on LA Streetcar Routes for Final Screening.pdf
2. Assumed maximum allowable speed on mixed traffic roadways = 35 mph.
3. Intersection delay based on Synchro output.
4. Average ped. crossing delay = 10 seconds.
5. Acceleration & deceleration rates based on Skoda 10T normal performance (2.5 mphps).
6. Average dwell time = 20 sec. surface stations.

ATTACHMENT 3 – STOPS MODEL RESULTS

Run #	Description	Speed	Project Ridership	New Transit Trips
15	7th with Spur	6.5	6,358	3,464
25	7th with Spur	5.5	5,260	2,743
17	7th with Spur	4.5	4,339	2,135
22	7th Without Spur	4.5	3,077	1,248
23	9th with Spur	4.5	4,224	2,179
24	9th without Spur	4.5	3,019	1,317
26	7th with Spur Less Stops	6.5	5,368	3,188

Metro

L.A. Downtown Streetcar Project

7th Street With Spur with Less Stops (6.5 Miles / Hour)

Map Produced by Countywide Planning and Development, LACMTA, August 2015

Appendix M
Energy Calculations

LA Streetcar Energy Calculations (revised 5-25-16)

VMT Reduced (daily)

Alt.	2015	2020	2040
2	6,813	7,172	8,606
3	5,464	5,724	6,767
4	6,694	7,055	8,499
5	4,873	5,123	6,123

	2015	2020	2040
MPG [1]	21.26	24.35	35.61

Gallons Reduced (daily)

Alt.	2015	2020	2040
2	320	295	242
3	257	235	190
4	315	290	239
5	229	210	172

Gallons Reduced (annually @ 365 days/ year)

Alt.	2015	2020	2040
2	116,968	107,506	88,211
3	93,808	85,801	69,361
4	114,925	105,753	87,114
5	83,662	76,792	62,760

Annual BTUs Reduced (@120,556 BTU/gal) [2]

Alt.	2015	2020	2040
2	-14,101,224,375	-12,960,537,400	-10,634,352,756
3	-11,309,128,135	-10,343,853,329	-8,361,917,860
4	-13,854,923,817	-12,749,106,435	-10,502,133,869
5	-10,085,904,357	-9,257,784,871	-7,566,133,154

Footnotes: [1] Fuel economy factors used = Light Duty Auto (LDA) & Light Duty Truck (LDT). Taken from *EMFAC2014 (v1.0.7) Emissions Inventory; Los Angeles County; EMFAC2011 Categories.* [2] Energy content of fuel calculated from U.S. Energy Information Administration (EIA); carbon dioxide emissions coefficients, https://www.eia.gov/environment/emissions/co2_vol_mass.cfm. Accessed: 2/17/16.

Annual BTUs Reduced (in MMBtu)

Alt.	2015	2020	2040
2	-14,101	-12,961	-10,634
3	-11,309	-10,344	-8,362
4	-13,855	-12,749	-10,502
5	-10,086	-9,258	-7,566

Energy Figures for Table 3.4-3 (Annual MMBtu)

		Build Alts 2 and 4	Build Alts 3 and 5
MSF Energy Consumption	Electricity	740	
	Natural Gas	339	
	Worker commuting	2,379	
	Subtotal	3,458	
Streetcar Operation	Electricity	10,666	10,058
Subtotal - MSF + Streetcar Operations		14,124	13,516

Energy Savings from VMT Reductions			
	2015	2020	2040
Alt. 2	-14,101	-12,961	-10,634
Alt. 3	-11,309	-10,344	-8,362
Alt. 4	-13,855	-12,749	-10,502
Alt. 5	-10,086	-9,258	-7,566

Net Energy Consumption (MMBtu)			
	2015	2020	2040
Alt. 2	23	1,163	3,490
Alt. 3	2,207	3,172	5,154
Alt. 4	269	1,375	3,622
Alt. 5	3,430	4,258	5,950

Input Assumptions				
1 kWh =	3412.141633	BTU		
	120,556	BTU/gallon	419,611	annual miles per CalEEMod
			19,737.11	2015 gallons
Streetcar electricity	60,115	kWh/week		
	3,125,980	kWh/year		